Lecture Notes in Electrical Engineering 112

Liangchi Zhang
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Editors

Engineering Education and Management

Vol 2, Results of the 2011 International Conference on Engineering Education and Management (ICEEM2011)

Springer

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Volume 112

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ISBN 978-3-642-24819-1 e-ISBN 978-3-642-24820-7

DOI 10.1007/978-3-642-24820-7

Lecture Notes in Electrical Engineering ISSN 1876-1100

Library of Congress Control Number: 2011939479

Typeset & Cover Design: Scientific Publishing Services Pvt. Ltd., Chennai, India.

Printed on acid-free paper

9 8 7 6 5 4 3 2 1

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Contents

The Dynamic Process of Education Expenditure Distribution in Each Region of China

Wei Tan

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Abstract. This paper gave an analysis on the dynamic process of education expenditure in China with the Kernel density and Markov chain. The results showed: the differences of per capita education spending was big in each region, with the lower gradient layout from the east to west; the distribution of kernel density functions displayed a "Bactrian" collecting trend which further represented a severe polarization in education expenditure, since 1995, the regional differences had continued to be expanding; from the steady distribution of Markov chain, the per capita education spending in each region still had a great discrepancy and it was difficult to achieve balanced development in short time.

Keywords: Education expenditure, Kernel density functions, The Markov chain, China.

1 Introduction

Since the 1978' reform and opening up policy, China's economy has developed rapidly, thus the financial input in education are increased which promoted the development of education. The development of education provides high-quality labor force for economic development and further promote economic growth, and the two factors forms positive cycle. Though the Chinese education is in the rapid development, it has regional imbalance. Due to the geographical, economic development and its own factors of education which led to the bigger and bigger differences between eastern and western regions. The main cause is the diversity of education expenditure.

In recent years, the difference of per-capita education expenditure has caused the scholars' attention and the scholars analyzed it from different angles. From the literatures, at present, the various indicators of education expenditure differences are from the economics methods, the usual indicators includes the standard deviation, range, lorenz curve, the gini coefficient and the variable factors. But these methods are a common fault, which is they can outdo the dynamic and long-term trends. Being difference from the past researches, this paper gave an analysis on the dynamic process of education expenditure distribution in each region of China from 1990 to 2010 with the dynamic distribution method (MEDD).

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2 The Research Method

The dynamic distribution method can directly describe the distribution shape of variables and dynamic process as the time past by, and it has a distinct advantage over the traditional research method, and it is an estimation method which can more describe the phenomenon of the parameters. The dynamic distribution method(MEDD)includes kernel density functions and Markov chain, the former regards a sequence as a continuous state, and the latter regards a sequence as discrete.

2.1 The Kernel Density Estimation Method

The kernel density estimation is mainly used to estimate the random variable functions, supposing the random variable functions $X_1, X_2, \cdots, X_N$ are in the same distribution, and the kernel density function is $f(x)$, the distribution function is the following:

$$F_n(\mathrm{y}) = \frac{1}{N}\sum_{i=1}^{N} I(X_i \le \mathrm{y}) \tag{1}$$

In formula (1), N is the number of observations, $I(\mathrm{z})$ is the indicators function, Z is the conditions formula; when Z is real, $I(\mathrm{z}) = 1$, or $I(\mathrm{z}) = 0$. The kernel density estimation is as the following:

$$f(x) = \frac{1}{hN}\sum_{i=1}^{N} \eta\left(\frac{x - X_i}{h}\right) \tag{2}$$

In formula (2), h is the bandwidth, η is the kernel density function.

2.2 The Markov Chain Method

Supposing there is a random process x(t), the probability from the state i in period t to state j in period t+1 is p_{ij}, in period t, the probability in s_i state is $a_i(t)$, so there is the following formula.

$$a_i(t+1) = \sum_{i=1}^{n} a_i(t)\, p_{ij} \qquad (i = 1, 2, \cdots, n) \tag{3}$$

That is to say, the probability in period t+1 is closely relevant with that in period t, and it is not relevant with the former one, the state of transfer process is called Markov chain method.

3 Empirical Analysis

3.1 The Kernel Density Estimation of per Capita Education Investment

In order to further reveal the dynamic process of education expenditure distribution in each region, we chose Epanechnikov kernel function and Silverman best bandwidth, and gave the density distribution of education expenditure in main years by the kernel density estimation method. The results are in the following.

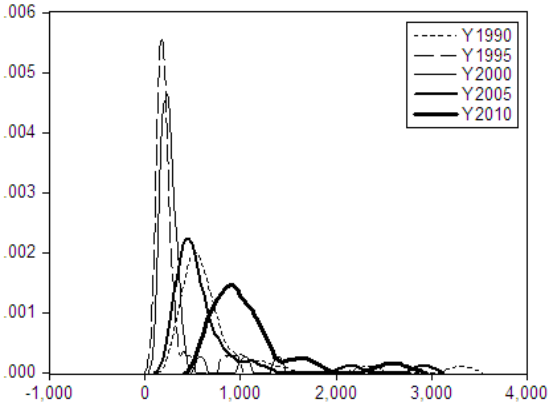

Fig. 1. The Dynamic Process of Education Expenditure Distribution

In the Figure 1, the horizontal axis represents average educational funds, the vertical axis represents density. From the two years of 1990 and 1995, the wave is higher and higher, and the right tail turns left which shows the average educational funds is polarization in this time, and the polarization gradually reduced. From the years of 1995 to 2010, the wave is lower and lower, and the right tail turns right and extending which shows the average educational funds increase in this time, and the polarization gradually expand.

3.2 The Transferring Probability Matrix of Relative per Capita Educational Funds

The relative per capita education spending is the total of education investment divided by population in an area. According to the overall level, we select four nodes value (0.5, 0.75, 1.0, 1.25) . The relative per capita education expenditure are classified into five groups of A,B,C,D and E. Calculating the transferring probability matrix and the steady distribution by Markov chain.

Table 1. The Transfering Probability Matrix and Steady Distribution

Type	X<0.5	0.5-0.75	0.75-1.00	1.00-1.25	X≥1.25
X<0.5	0.75	0.25			
0.5-0.75	0.051	0.823	0.126		
0.75-1.00		0.165	0.572	0.138	
1.00-1.25			0.191	0.571	0.238
X≥1.25				0.15	0.85
the steady distribution	0.06	0.295	0.225	0.163	0.258

The 1st column in table 1 is the per capita educational funds in t period; the 1st line is the sample state in t+1 period. The last line is the steady distribution. From the transferring probability matrix, the change of per capita educational funds is stable. The greater of elements on the diagonal which means the higher probability of regional per capita education in the next issue remains that of the last period. From the table 1, we can see the least element on the diagonal is 0.571, the greater is 0.85, and the average is 0.713 which means the probability of regional per capita education in the next issue remains that of the last period is 71.3%, the changes has the "sticky". Therefore, if the per capita education funds in various areas of China is still in the past trends, then the per capita education investment will still keep considerable differences, and it is difficult to achieve balanced development in short time.

4 Conclusion

By the Kernel density and Markov chain, this paper gave an analysis on the dynamic process of education expenditure in each region of China. The results showed: the per capita education expenditure had a great difference, with the lower gradient layout from the east to west; it displayed a "Bactrian" collecting trend which further represented a severe polarization in education expenditure; since 1995, the regional difference had continued to be expanding; and we can see from the steady distribution of Markov chain, the per capita education spending in each region still had a great discrepancy and it was not possible to achieve balanced development in short time.

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Cultivation of University Teachers' Education Technology Ability - A Study on the Strategies Basing on Learning Community

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Abstract. This article introduces the present situations and existing issues about education technology ability of university teachers, then comprehensively introduces learning community of university teachers' education technology ability basing on group dynamic ,which summaries the connection between group dynamic and learning community of university teachers' education technology ability. On this basis, the paper discusses the realizing ways of education technology ability of learning community of university teachers, and offers two ideas: one is traditional university education technology learning community, which mainly considers "school-based research, regional intercollegiate cooperation" as the platform, providing university teachers with chances to discuss and have a face-to-face communication. The other is university teachers' education technology learning community in the network environment, expecting to show some certain guiding functions.

Keywords: University teachers, Education technology ability, Learning community.

1 The Present Situation and Existing Issues about Education Technology Ability of University Teachers

When human fully step into the information society- the 21century, information technology has made tremendous influence on education, and that makes education technology ability become a significant part of the teachers' professional abilities. Only the university teacher improve their education technology ability constantly, can they adjust the new situation of the educational informatization.

From 2009.9 to 2010.12, through the design of the questionnaire "University Teacher Education Technology Ability and Training Practice Questionnaire" and informal discussions, the author carries out an random sampling survey into the Zhoukou Normal University in Henan province and another 5 universities, which mainly focuses on the present situation about teachers' education technology ability, training and advices on cultivation. Among them, 550 questionnaires are distributed, 336 are retrieved (recovery rate 61.1%), and 321 questionnaires are valid (effective rate 97.3%). As the survey shows, there are several major issues on education technology ability and training.

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1.1 "Free development" - The Common Phenomenon of Education Technology Ability among University Teachers

"Free development" of education technology ability among university teachers reflects itself in two aspects. One is individual success value and the other is uninterventionism of the universities. The main particularities of teaching as a profession lie in the fact that it is the teacher himself that finishes the whole teaching task. They refuse to upgrade themselves by turning to other teachers or experts for help, but acquire knowledge on teaching research through their solitary and incomplete teaching experience, so the universities have to demand their teachers to exchange valuable ideas through mutual class-listening administratively. For those teachers, only few available notes can be found on their lecture records, which are far from the deep thinking about teaching research in information technology environment. The phenomenon that university teachers continue to "fight" solely instead of giving substantial criticism and instructions to their colleagues represents that they are actually in a self-closed and negatively conservative condition, which is neither conducive to professional development nor to the improvement of their technology.

According to the survey, a great number of teachers believe that their workload is exceedingly heavy. Teachers overloaded account for 41.0%. However, only 22% teachers hold the view that they don't explore their potential to the most extent, and teachers with little workload are few, which reveals that teachers, in college or in high school, are working under great pressure. The survey also shows that a good many teachers indicate that there is a remarkable improvement after their induction as teachers, of whom about 35.7% teachers feel that they have a prominent improvement, while 51.8% teachers get slight improvement. Nevertheless, those improvements is gained mainly by using the way of self-cultivation (45.9%), and scientific research (44.9%), yet it is relatively low in the proportion of training attendance (1.67%), academic activities (14.1%), diploma education (11.5%) and investigation (6.6%). In conclusion, the development of education technology ability of college teacher must be guaranteed by a certain amount of time and energy, while lacking one of each will surely exert an influence on teachers' input in self-improvement. What's more, self-practice of university teachers can only be a slogan with the deficiency of persistence and systematizatism.

1.2 The Obvious Limitations of Traditional Ways That University Teachers Are Trained in Education Technology Ability

The traditional ways of training in education technology ability of university teachers are mainly, from up to down, led by government or college, thus the organizers of the training place more emphasis on overall size and effect. And the training is always a single way transmission, with drawbacks like single model and poor pertinence. Moreover the teachers trained are dominated, therefore they respond in a passive and negative way, leading to great limitations. These limitations are mainly that: firstly, the goals of training are not clear. So far, there does

not exist a comparatively complete and effective criterion for training faculty in information technology and curriculum integration. Many educational technology trainings fail to enable teachers to solve the practical problems encountered in teaching, and that is because what these kinds of trainings require is that teachers should attend several training classes, participating in the assessment, and finally succeeds to get a certificate at the end of the training; secondly, the training is characterized by single mode. Methods like mere installation and spoon-feeding are still adopted in quite some training, and particularities of adult-learners are not taken into consideration at all. This mode of group operations and uniform training ends up with a mere formality, with no effect to stimulate the enthusiasm and interest of the faculty in learning, let alone to exert the subjectivity, initiative and creativity as well as the effect of training. Thirdly, impetus of the group is ignored. Though the training is always attended by several dozens of teachers, the exertion of this kind of impetus is not taken into account. What is more, there is a serious lack of communication and collaboration among teachers, as some even fail to tell who are sitting beside him or her after the training, which makes it more difficult to effectively improve the education technology ability of the faculty; fourthly, assessments of the training is more emphasized than the process. In the education technology ability training, the changes of ideology, teaching philosophy, teaching methods happened to the faculty are paid less attention than the results, leading to the fact that the training is regarded as formality with little significance.

2 Education Technology Ability Learning Community of Teachers Based on Group Dynamic

2.1 Intension of Group Dynamic

The founder of group dynamic theory is Lewin. Group dynamic refers to the flow of will which leads the group. It aims at discovering the psychological and environmental aspects in the sources of group dynamic which pushes members of a group forward. A group dynamic system generally consists of three main factors – cohesion, drive and dissipative force. These factors can influence group members at the same time. They transact with each other and contend with each other. All three factors make contributions to the evolution and development of a group through the process of transformation from one to another. Cohesion assures the stability of a group. Drive makes a group keep developing and evolving. Dissipative force, however, is a negative factor which hinders a group from progressing and lowers the work efficiency.

Keep good man company, and you shall be of the number. Every teacher has a strong sense of belonging to the community. No one would like to be discarded by other group members. To improve the education technology ability of teachers, it's better to start from changing a particular group of them. To do a research on education technology ability of teachers, not only should we study individual development, but also study group development. Education technology ability learning community is the inevitable outcome of group dynamic theory.

2.2 Education Technology Ability Learning Community of Teachers

Education technology ability learning community of teachers is a group which aims at improving the education technology ability and other professional abilities of university teachers. It's organized by volunteers in universities. A learning community which aims at improving education technology ability usually includes teachers and educational technology experts. Constructing it can help teachers to exchange teaching experience and methods. It can also help them to solve the teaching problems and share what they've learned in teaching. Thus, the learning community could promote the development of both knowledge and ability. What's more, it will establish a cooperating community basing on education technology and improve teachers' abilities on education technology research. University education technology learning community which bases on group dynamics has some typical characteristics. One is target cohesion. What university education technology learning community struggles for is a goal—enhancement of education technology ability. The encouraging feature of particular goal determines teachers' role in directing and driving actions. Group goal is one of the important factors that generate cohesion. University teachers as individuals are attracted by the group goal and internalize it to their own pursuit, which will produce strong independence and belonging psychology. The attraction will be greater when the goal is particularly challenging and individual fully perform his or her self-value. Self-achievement comes to the second. Binding force from group forms and stress, as the driving force, which changes and maintains university education technology learning community, is influencing and promoting individual's initiatives and reduces energy wasting.

2.3 Realization of Education Technology Learning Community of Teachers

One is traditional university education technology learning community, which mainly considers "school-based research, regional intercollegiate cooperation" as the platform, providing university teachers with chances to discuss and have a face-to-face communication. The platform is fully related to actual work. They can learn from each other while experts are discussing or sharing ideas together, so they can adopt the others' strong points and overcome their own weak points, making progress together. University education technology learning community, basing on university teachers' voluntary and mutual recognition, is both a simple and efficient grass-roots research team. Cooperation development of university education technology learning community adapts some main forms, including target cooperative communication and case analysis communication. The former is established by teachers who have the need to develop themselves, recognizing each other and then organizing a learning community voluntarily. They make their

action plan and create a cooperative atmosphere. For example, two university teachers could prepare lessons, design lessons, and discuss cases jointly to complete the program research or program study related to education technology. Accordingly, university teachers can achieve their self-development in the process of joint exploring and experiencing. With case analysis communication carrying out and internal or inter-school observing teaching activities holding, university teachers take an active part in them and have good interaction. Along with the issues raising and analyzing, university teachers feel positive self-denial and enjoy the sense of achievement from peers as well. Their education technology ability has been improved, so has their professionalism completed.

The other is university teachers' education technology learning community in the network environment. University teachers' education technology learning community in the network environment is that individual university teachers (experts in the field, excellent teachers and peers) comprise the technology learning community. With the help of necessary support provided by the network environment, university teachers in the traditional education technology learning community can only communicate and cooperate with each other in an environment limited to space and time. Nevertheless, the learning community in the network environment is relatively virtual, which is often not real-time face-to-face communication but more through theoretical and practical knowledge exchange and exploration. It's good for the promotion of teachers' professionalism and their abilities of sustainable development. On the one hand, as the subjects and active constructors of education technology ability, individual university teachers actively attain real-time or non real-time help in the network environment. On the other hand, they are also the collaborators of learning community and designers of resources who provide learning opportunities for other individual university teachers. University teachers' education technology learning community can be composed of university teachers from the same region as well as from different regions, regardless of time and space.

3 Conclusion

University learning community is an organization, which can transform study to create, explore self energy. It is also a reversion to discourse right and the awakening of self- consciousness of university teacher. Every teacher in the learning community will be able to take the initiative to their researches, reviewing their teaching behaviors and carrying out individual study and bolding innovation efficiently. Most importantly, all the members will work hard together towards their common and special target, and the fulfillment of education technology ability. Today, "Technology can not take the teachers' place, but the teachers taking advantage of technology will replace those who do not use technology". In view of the research and practice on university teacher learning community, it will make positive impact on the training of the teachers' educational technology ability and the development of teachers' professional abilities.

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The Elective Course Setting Reform in the Perspective of Behavioral Decision Theory

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Abstract. The elective courses are an important part of curriculum setting and personnel training program in the university ,and also are important projects to implement the quality education and highlight the importance of students' personality. At present, some universities have a number of issues in the curriculum, teaching staff, teaching resources and assessment mechanism in the elective course system. Try to introduce behavioral decision theory of the economics into university elective course system to strengthen the course reform in the form of decision-making framework and empirical research.

Keywords: Behavioral Decision Theory, University, Elective Course System Reform.

1 Introduction

University elective courses are courses available to students in other majors to learn the expertise of other courses in higher education. This is a conventional system in the higher education system that combines the interest and becomes multidisciplinary experience. It gives full play to students' initiative and independence of creativity, and expand the professional caliber, and develop students' quality and ability. Moreover, it also improves the teaching and research ability of teachers and improve the university curriculum system. Therefore, public elective teaching is experiment about teaching innovation and the interactive platform for teachers and students that plays an important role in the university teaching system. But with the gradual reform of university curriculum in depth, the contradictions and problems in the elective courses system becomes increasingly obvious. The paper brings in behavioral decision theory in the economics into university elective course system to strengthen the course reform in the form of decision-making framework and empirical research.

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2 General Foundations of Behavioral Decision Theory

Behavioral decision theory has the following characteristics: First, the starting point is the decision maker's decision-making behavior; Second, the study focuses on the decision-maker's cognitive and subjective psychological processes, and concerns the psychological explanation behind the decision-making behavior, rather than the evaluation about whether the decision is wrong or not; Third, from the perspective of cognitive psychology, it studies the mechanism of determining and processing the information and the impact of internal and external environment, and then extracts behavioral variables that the rational decision theory does not take into account to amend and improve the rational decision model. The general paradigm of behavioral decision theory is:to put forward the hypothesis about people's behavioral characteristics--- to confirm or falsify the hypothesis ---- to get the conclusion. Behavioral decision theory's main contents include much. The human's rationality is between complete rationality and irrationality. The decision-makers is easy to be affected by the perceptual Bias in the recognition and perception of problems. Due to the limited time and available resources, it is impossible for the decision-makers to understand and master all the information and intelligence about decision-making environment. At the same time, decision-makers are often risk-averse and less inclined to accept the risks of the program. Decision-makers in decision-making often seek only satisfactory results, rather than seek the best efforts.

3 The Elective Course Setting Problems in the Perspective of Behavioral Decision Theory

3.1 Behavior's Limited Rationality Results in That the Curriculum System Is Inconsistent with the Training Objectives

Behavioral decision theory suggests that people are bounded rational. In the extremely complex realistic decision-making environment, human's knowledge, imagination, and computing power is limited. There is a big limitation of elective courses set, which is single in category .Most contents are inclined to focus on history class and literature and history, and courses involved with natural science and practice are in the minority and not practical, for example, Spanish, art appreciation, chorus and command, philosophy history, etc. Most students are not interested, and such courses for most students in other majors in the future study and work are seldom used, which , however, has become general courses. This is contrary to the original intention and goal and also the result of subject's bounded rationality.

3.2 The Perceptual Bias of Decision-Makers Results in That the Contents of Public Elective Course Do Not Match Its Form

Decision-makers are easy to be influenced by the perceptual bias in the problem identification .When they judge the state of the future, they use the intuition more than logic analysis methods. The so-called perceptual bias is that due to the limited cognitive ability, decision-makers only regard the part of problem information as the cognitive object. However, it is inevitable to be influenced by perceptual bias. They often focus only on theory and concepts and neglect the practice and practical ability in the teaching process. The rough quality of teaching goes against the teaching program. In the short term there is little teaching effect, resulting in great contradiction between content and form of elective courses.

3.3 That Decision-Makers Don't Seek the Best Solution Results in That the Teaching Quality Is Not Guaranteed

Decision-makers often seek satisfactory results, rather than seek the best efforts. Decision-makers do not continue the study with others positively , and they are often content with the current viable options. On the one hand, as elective courses are rich in contents, involving a broader range of knowledge and professional experience, it proposed more strict requirements to teachers. But under normal circumstances, teachers have heavy teaching tasks, which leads to that they put less energy in elective courses, and do not pay enough to support decision-making, and affect the teaching quality ;On the other hand, the university's teaching resources are limited, and some courses can not meet the course requirements and the teaching needs in multimedia equipment, laboratory, information and other aspects. In the management system reform process of the implementation of the autonomy of university education in China and highlighting the characteristics of the school, teachers' ability to open courses become one of restricted factors.

4 The Elective Course Setting Reform Path in the Perspective of Behavioral Decision Theory

4.1 Take Full Advantage of the Limited Human Rationality, Improve the Curriculum System According to the Training Objectives

When behaviors face and make choices, affected by the objective and subjective environment ,they can not always do a rational decision making. As social and economic development comes up with more professional and more high-end requirements,it requires that colleges and students should develop people's bounded

rationality to make decisions with the greatest degree. Universities should set up the corresponding courses according to the current needs of the students and their general desire, and focus on interdisciplinarity and innovation, for example, real estate marketing, appliance repairing, health care, disease diagnosis will attract more students, and courses will provide students with the platform for skills enhance. About the elective course system setting, we should set up the strict examination and approval system for public elective courses, and strengthen the assessment of work.

4.2 Overcome the Perceptual Bias, and Focus on Curriculum Innovation and Practical Ability

Today's society, decision-making from the subject behavior is influenced by social systems, historical and cultural traditions and the relationship between human beings and other factors. The universities have the burden to develop the college talents for the society. Innovative teaching of elective courses is becoming the center of the higher education. In addition to regular teaching, university can use elective course curriculum to improve innovative teaching experimentation and practice, and improve the proportion of experimental teaching and social practices .And they can enhance knowledge ability through practical methods, and require students to finish courses with investigating reports, thesis, or examinations manner elective assessment.

4.3 Seek the Best Program, Strengthen Teachers' Training, and Cultivate Excellent Teachers

Therefore, we must further improve the training of college teachers to improve the quality and meet the requirements of college better. The universities should adjust the content and curriculum of teachers' pre-service training, implement modern educational technology training and carry out the good international project about cooperation of key teachers training, and improve teacher training management system and operation mechanism. Meanwhile, in order to meet students' need and develop qualified personnel, universities should increase investment in education, including improving the teaching facilities and professional training for teachers. Invite experts in related fields to give the necessary teaching and support to improve the overall level of university teachers.

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Exploration and Practice in Engineering Education Reform of EE Major Based on CDIO Mode

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Abstract. CDIO engineering education mode is the latest result of international engineering education reform in recent years. Guided by the CDIO educational philosophy, our university has put forward educational reform idea on the basis of cultivating application-oriented talents of CDIO Electrical engineering major, we have also made active exploration on establishment of cultivation standard, modification of cultivation plan , implementation of project practice, reform of teaching mode , providing references for implementation of CDIO teaching mode as well as the cultivation of application-orientated talents.

Keywords: CDIO, Electrical Engineering, Engineering Education Reform.

1 Introduction

The Ministry of Education issued the New Undergraduate course catalog In 1998, combining the four majors in old course catalog into one major, Electrical engineering and automation. This major incorporates the advantages of other subjects like electrical engineering technology, computer technology etc, and overcoming the disadvantage of overly-categorized , narrow, weakly applicable major[1]. In order to realize the cultivation goal of talent of electrical engineering and automation, as the first local technology university that adopts the CDIO engineering education in campuses in China, national CDIO engineering educational reform Vice team leader Unit, Chengdu University Of Information Technology actively conducted the EE major Training Mode Reform in CDIO engineering education and practice on the basis of specific requirements of the market as well as status of talent cultivation.

2 Disadvantage of Traditional EE Talent Cultivation Mode

2.1 Faulty Construction of Knowledge System

Has long been influenced by the former Soviet Unit engineering education, our higher engineering education has become accustomed to the discipline-oriented course arrangement , three-stage mode curriculum such as public basic course, professional foundation course , professional courses has long been kept[2]. This

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approach reflects the typical view on curriculum, courses are separately conducted with disciplinary thinking, systematicness and scientificness of courses are overly emphasized. The discipline-oriented course arrangement neglects the interconnection between disciplinary knowledge, identical part of each discipline can not be avoided, More important is this mode emphasizes independence of the discipline , directly affect student's creation of the sustainable disciplinary knowledge frame, which is one of basic elements for the talents of this major to fit their work.

2.2 Disjoint between Quality, Ability and Knowledge Cultivation

The implementation of modern project is a cycle that complete a product or system from conceive to design to implementation and operation. Therefore, in addition to emphasize importance of engineer cultivation by teaching basic engineering knowledge and project knowledge to the students, cultivation of personal study ability, innovative ability, social ability, product, process, system building ability is also vital to engineer cultivation[3]. Under traditional engineering education mode, due to the lack of necessary project environment[4]. team spirit, communication ability, system control ability, and responsibility, career moral that are dispensable to engineer 's survival and development during project practice is hardly developed.

2.3 Lack of a Governing Standard

The ideal engineering education shall have a clear, complete, coherent talent cultivation goal or standard guiding the organization of teaching content as well as teaching activity. For long time the goal of talent cultivation is achieved through the reasoning of teacher on engineering science. There is no convincing description why engineer must possess such ability. Thus from 50s of 20th century, engineering science and education has become more and more disjointed[5]. In order to make engineering education standards more explicit for engineering talents cultivation , we need a concrete demonstration of the engineering practice, develop detailed teaching goal and result that understandable under rational frame.

3 The Reform and Practice of CDIO Mode of Electrical Engineering in Our University

3.1 Focus on Top-Level Design, Improve Talent Cultivation Programs

The top level design is the key point. If the direction is wrong, the CDIO vision will be hardly realized, no matter how good the following works are. The EE major of our university has established professional teaching guide committee composed of industry experts and employing unit. Based on adequate market research and

analysis of demand for talents, together with employment and capacity-building assessment reports by third Party MyCos company on our graduated students, and after careful comparison with similar majors at home and abroad , We defined specific orientation for our major with consideration of our university conditions , and aimed at LV power supply and distributable new energy and its application. Meanwhile, During the process of formulating talents cultivation plan, we also gave enough consideration to the demand of party of interest such as schoolfellow, teacher, industry, society, then made professional cultivation plan, gave detailed description to index system of the three stages, including knowledge, ability, quality aim.

3.2 Deepening Course Reform, Building Integrated Course System

Integrated curriculum system shall be established with view from top level of the system . The course system arrangement shall give consideration to both ability and disciplinary knowledge acquirement , infuse the quality and ability education into professional teaching , and make quality education a part of whole education process, thus construct a curriculum system with overall effect greater addition of separate course, and its parts mutually supported. By course optimizing and modularization, total class time is compressed, more opportunity of knowledge expansion and alternative to strengthen professional ability are available to students. The theoretical study and engineering practice are incorporated in the same study space, after class education is enhanced, students' purpose and application ability through disciplinary knowledge acquirement is intensified. The personal ability, social skill, product, process, system construction ability are built through practice instead of adding ability courses. In our revised 2010 teaching program for EE major , three-stage index system of cultivation program has corresponding course and practice with relevant foundation.

3.3 Focus on Ability Building, Strengthen the Engineering Practice

According to the society demand for talents, together with the ability description and requirements to the student by international engineering cultivation outline, we have arranged project practice program for grade of 2008, 2009,2010.This made the students understand and familiar with real engineering, cultivate their basic engineering design ability, social ability and team working ability, we emphasis that student shall learn in engineering environments, and keep them improving ability in problem-finding ,problem analyzing and problem solving. As specified in the detailed rules and regulations of project practice, from one perspective, student team shall be comprised of different disciplines, ensure support with professional knowledge, from another perspective, the major tasks and key test points of each term are specified. At same time, the engineering practice

evaluation is made on the basis of "team assessment and project scoring": the engineering practice is evaluated in team unit, a randomly selected team member shall attend project replication, Then the team leader shall make secondary allocation of marks according to the involvement of the members. Through the effective implementation of project practice, students' creative ability and team working ability is improved. As participants, students of our major has gained cheerful result in electronic design contest and Freescale Cup National Smart Automobile competition.

3.4 Change of Educational Concept, Reform of Teaching Mode

Student centered teaching philosophy has been established to guide student "study with enthusiasm". Several reforms has been conducted on the teaching contents , method, media and test method for major such as electric power and electronic technology, Power grid automation , power supply and distribution technology, Energy convert and control technology, which further intensify the cultivation of students comprehensive ability such as engineering practical ability, problem finding and solving ability, technical creativity, team working ability .

4 Conclusion

CDIO mode is a comprehensive way to understand the engineering. It is a new engineering concept incorporating science, technology, humanism, society, economy, management, etc. The reform of CDIO talents cultivation itself is a systematic project, which needs elaborate organization, deep research and solid implementation. We carried out active explorations on other aspects with CDIO vision to cultivate modern engineer: we invited domestic and overseas masters, leaders of transnational enterprises make a series of speeches and forums to promote engineering education and academic atmosphere; By teaching and practice , we train students to treat themselves as future engineers with career morals; To cultivate talents with career moral, honesty, responsibility, We pay attention to the humanism education; With cooperation to the university enterprise , students' comprehension on enterprise concept, R&D, Study, management, culture is promoted, their adaptive capability to the vacation is also promoted.

Acknowledgments. This work is supported by Scientific Research Fund of SiChuan Provincial Science & Technology Department under Grant No.2010JY0181 and by the Scientific Research Foundation of CUIT under Grant No. KYTZ201017.

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Several Key Technologies of Virtual Simulation on Aviation Ammunition Teaching Software

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Abstract. In order to solve the inconsistent problem between updating quickly for the air ammunition and updating slowly for the teaching materials, and meet troops' training and teaching demands, the virtual simulation technology is introduced in the teaching software of aviation ammunition development. The virtual simulation technology includes IGES (Initial Graphics Exchange Specification) entity model construction technology, which implement the new NURBS model. Entity object optimization technology alleviates the complicated structure of air ammunition body for optimizing the virtual reality environment. Key frame animation technology can make the drawing performance related to computer hardware and scene based on high-precision time stamp. These technologies improve the interaction and intelligence of teaching software, and provide a kind of powerful supplementary means for the autonomous learning and classroom teaching of aviation ammunition.

Keywords: Aviation ammunition, Virtual reality, OpenGL (Open Graphics Library), Time stamp.

1 Introduction

In recent years, the air ammunition updates quickly, which makes the relevant teaching contents out of date, and the teaching materials update slowly, and lag seriously [1]. In order to meet the immediate demands of troops' training and teaching, we develop the air ammunition teaching software, and the software introduces the virtual reality technology in order to improve the teaching effect.

2 Hierarchical Structure Design of Software System

User tier: i.e. above man-machine interactive module, with different functions at client side and server side. However, they are all the interactive bridges between system and users, whether they have good design or bad design, will directly affect the usability of system. The user tier includes forms, text, button, dialog box and other element composition of graphical interfaces.

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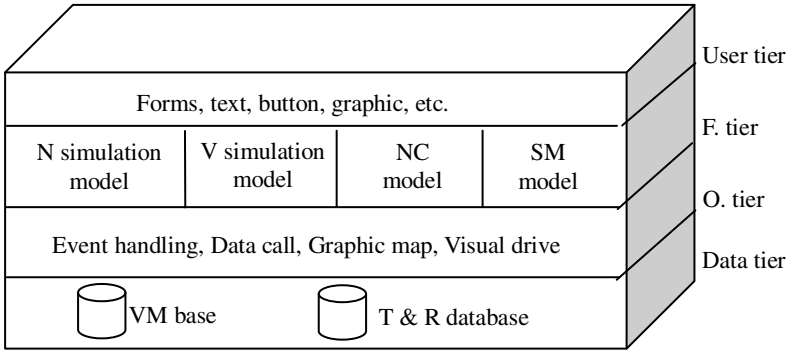

Fig. 1. Hierarchical structure of software

Function tier: It can complete various function missions of simulation software, including numerical simulation, virtual simulation, network communication, system management function module.

Operation tier: It is the main implementation part of virtual simulation teaching mission, according to orders spread from user tier, it gives the corresponding handling event, and calls the data from data tier and parameter data spread from user tier to drive function module operation.

Data tier: It mainly provides the storage service to data, and there are two types of data storage used: data document and database.

3 Relevant Technology of Virtual Simulation in the Teaching Software

In recent years the application of virtual reality technology in military and education fields is very active, and it collects many key technologies such as computer graphics, multimedia technology, artificial intelligence, man-machine interface technology, and research on sensor technology, highly parallel real-time computer technology and human action. The virtual reality technology is introduced in the software, and its courseware can make people have realistic experience.

3.1 A Method of NURBS Entity Model Based on IGES

For the control of ammunition body structure, the entity model generation can not be separated, and surface of most of the entity models has the smooth feature, and is comparatively complicated [2]. In order to quickly and easily generate the virtual simulation model with smooth surface, and improve the design efficiency of virtual reality system, we study the format specifications of IGES (Initial Graphics Exchange Specification)[3], and summarize the methods of extracting NURBS [4] curve and curved surface data information from IGES standard contents, design

the data structure in line with shits specification, and successfully realize the introduction of NURBS virtual simulation model in the virtual environment. The author introduces this specification to the virtual reality (including visual simulation, etc.) as the method of quickly generating virtual simulation model.

In virtual environment, virtual simulation models can show visually real feature and space relation of objects. At present, the virtual simulation models are often rendered with polygon mesh type. But when we want to describe some slippery surface objects through the polygon mesh, we need to increate more amounts of the polygon patches to improve the smoothness character. If smooth structure of more virtual models were complex, the polygon amounts should be million. So this virtual mesh model would be adverse to saving, transmitting and rendering in the virtual reality environment.

IGES contents include five parts: S (Start segment), G(Globe segment), D(Directory segment), P(Parameter segment) and T(Tail segment). The data information of NURBS are found fully out in parts D and P, others can be ignored.

The data information of NURBS objects is included in directory segment, and its parameter information is included in parameter segment. The table 1 give out the NURBS objects index.

Table 1. Entity Property of Object

102	126	128	142	144
composite curves	NURBS curves	NURBS surfaces	curves in surface	tailored surfaces

In the process of analyzing the IGES contents, the IGES framework can organize effectually every structure levels be clear about the NURBS objects besides including the data information. Its organization format about NURBS entity is, tailored surface is the topmost level, and every levels point to its secondary level until pointing to the real entity data of the NURBS surfaces and curves. Fig. 2 generalized a relation between their structure levels.

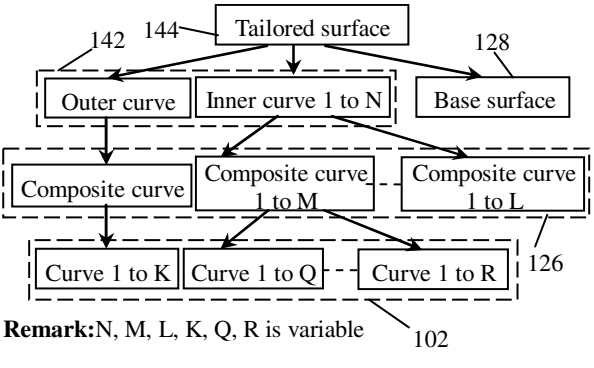

Fig. 2. Framework for NURBS data

Fig. 2 show that the base surfaces(128) save to the tailored surfaces (144) whether they are tailored or not, and one tailored surface point only to one based surface. So, if only spreading over every data (144) would find out every NURBS surface and curve data.

In the data structure design of NURBS virtual model, we only care for NURBS curved surface and curve geometric entities, in which the curve is used to complete the cutting for the curved surface, so the data structure is designed as follows aiming at these two entity models (c++ language environment):

```
struct NURBS_CURVE //NURBS curve data structure
{
  int controlCount;  //control points k+1,k times B-spline curve
  int order;  //order of basis function
  int knotCount ;   // knots
  float *knots;  //knots group
  float *controlPoints;   //control points group
};
```

In order to get the better virtual model effect, this article makes the best of the advantages of bottom graphical interface and entity modeling software; the bottom graphical interface can use OpenGL as the graphical drive, and generate IGES standard data files through modeling software.

(1) Coordinate adjustment

When constructing the model, the coordinate system located is not in line with coordinate system under OpenGL, general difference is -0.5•π, and the homogeneous transformation equation got is shown as follows:

$$p_{ij}=[x_{ij}\ \ y_{ij}\ \ z_{ij}\ \ 1]\cdot R_x(\alpha)$$

In which, $[x_{ij}\ \ y_{ij}\ \ z_{ij}\ \ 1]$ is the control point homogeneous coordinate variables of U, V directions got from IGES file; p_{ij} is the homogeneous coordinate after transformation. $R_x(\alpha)$ is the transformation matrix around X coordinate axis, i.e.

$$Rx(\alpha)=\begin{bmatrix}1 & 0 & 0 & 0\\ 0 & \cos\alpha & \sin\alpha & 0\\ 0 & -\sin\alpha & \cos\alpha & 0\\ 0 & 0 & 0 & 1\end{bmatrix}$$, in which, α=-0.5·π.

(2) Nurbs takes the plane curve to represent a NURBS curved surface, which can be represented as

$$s(u,v)=\frac{\sum_{i=0}^{K1}\sum_{j=0}^{K2}w_{ij}d_{ij}N_{i,M1}(u)N_{j,M2}(v)}{\sum_{i=0}^{K1}\sum_{j=0}^{K2}w_{ij}N_{i,M1}(u)N_{j,M2}(v)}$$

In which, $d_{ij}=(x_{ij}, y_{ij}, z_{ij})$ is control point, w_{ij} is the weight factor corresponding to d_{ij}, $N_{i,M1}(u)$ is $M1$ times base function at the U direction, and $N_{j,M2}(v)$ is $M2$ times base function at the V direction; Nurbs curved surface still can use 4D

homogeneous coordinate representation way, and the control point can use homogeneous coordinate point with weight, i.e.

$$P_{ij}=[\omega_{ij}\cdot \mathrm{d}_{ij}\ \omega_{ij}]=[\omega_{ij}\cdot x_{ij}\ \ \omega_{ij}\cdot y_{ij}\ \ \omega_{ij}\cdot z_{ij}\ \ \omega_{ij}\ ]$$

The function gluNurbsCurve() and function gluNurbsSurface() in the OpenGL environment use homogeneous coordinate to represent NURBS curve and curved surface, therefore when obtaining control point d_{ij} from IGES file and after obtaining the corresponding weight factor ω_{ij}, herein the multiplication of d_{ij} and ω_{ij} is to be neglected most likely; in addition, we need to state that the vertex type is GL_MAP1_VERTEX_4 or GL_MAP2_ VERTEX_4.

In the IGES data, it don't correspond between array of the control points and U/V direction. So they need to adjust the control points or U/V direction. In relation to adjusting the control points, we can write the following program.

```
int K1= K[0]+1,K2= K[1]+1;
for(int i=0;i<K1;i++){
  for(int j=0;j<K2;j++){
  memcpy(&controlPoints [(i*K2+j)*4],
    & controlTem [(j*K1+i)*4],sizeof(float)*4);
  }
}
```

3.2 Entity Object Optimization Technology

Due to the complicated structure of air ammunition body, there are more entity models, which can affect the rendering speed of whole scene, and can generate the phenomena such as inconsistent picture, multi frame and little frame under the serious situations, and aiming at such situations, it is necessary to carry out the optimization processing to model:

(1) Use hierarchical detail algorithm to optimize 3D model. In the operation, according to the distance change between object and point of sight, call the models with different complex in the model base.

(2) Simply treat the model with low resolution ratio. Under the circumstance of not high accuracy requirement, we can simplify the model through reducing points of cross section, establish 3D model base at the low resolution ratio, and reduce the computing loss.

(3) OpenGL display list optimization. The display list is a program optimization tool of OpenGL, it greatly increases the display speed rate through making the drawing operation packaged in a static list, and then staying in the internal memory with compiling treatment.

3.3 Key Frame Animation Based on High-precision Time Stamp

Because of different visual angles when user side is learning by simulation, the model mesh amount entering vision is different, thus lead to that the frame frequency of drawing the scene may be different, if the programmed algorithm is

wrong, it can lead to that the animation action displayed can not carry out synchronously.

The higher the precision of time record, the better the effect of action consistency. In the common computer system, there includes high-precision operating counter, the high-precision time stamp can be obtained with it, and its precision relates to clock frequency of CPU. Using the method of obtaining high-precision time stamp can meet requirements, and the obtaining method uses the following steps:

Step 1: remember the happening time T_{former} of former event and the counter parameter C_{former} obtained through calling QueryPerfrmanceCount function when this event happens.

Step 2: when the events happen, respectively call QueryPerfrmanceCount function, the numerical value C_{self} of high-precision operating counter is obtained when the event happens.

Step 3: the numerical value difference and frequency f of two times high-precision operating counter obtained from time T_{former} of former event happening, according to formula $T_{self}=T_{former}+(C_{former}-C_{self})/f$, calculate the high-precision time of event happening.

In conclusion, the basic thinking of key frame animation based on high-precision time stamp is: firstly the key frame data and local high-precision time stamp data between the animation beginning and ending, then calculate the time delay according to this time stamp data at the data receiving end, each key frame animation needs to be added time delay at the beginning, and ensure the synchronous beginning of animation. At last between the key frames, the animation drawing also calculates based on high-precision time stamp, which can make the drawing performance related to computer hardware and scene, however, the drawing time does not related to them, the record time between various key frames needs to be ensured, and ultimately make the drawing animation carry out synchronously as much as possible.

4 Realization of Teaching Software

The courseware development uses Borland C++ Builder 6.0 as basic development tool, which is a kind of popular software development environment facing objects, and provides the visualization development component library (VCL) in order to improve the development efficiency. Borland C++ Builder 6.0 is based on C/C++ language, in the numerous visualization integrated development environment, it is one of best selections of developing Windows application program, and uses OpenGL as the main development tool of simulation scene.

5 Conclusion

This teaching software initial application can show that the software has the low requirements to the hardware environment, it has the better operation performance, and it has the very important meaning for students to grasp new air ammunition knowledge, improve teaching effect, and increase the training guarantee capability.

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Introduction Research and Practice of Training Mode Reform in the Higher Engineering Education

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Abstract. This paper is based on modern engineering background, and viewed of the current situation of higher engineering education and problems, to guide the implementation and practices of the higher engineering education from the analysis of the engineering education reform environmental and the main issues of the modern engineering training, as well as training requirements. Based on CDIO, build the engineering education training model which takes strength the general project education as the main line, takes improving the overall skills and developing the high quality engineering talent as the goal, and practiced the training mode and achieved initial results.

Keywords: Engineering Education, Project teaching, CDIO.

1 Introduction

Higher engineering education is the important part of the higher education. Its target is to foster the senior engineering technique talented person. To the development of the economy with our country, it plays an important role. The talented person whom it trained must face the engineering practice, but that exactly is the main lack of the engineering technique education in our country. How to foster a large quantity high talented engineering technical persons who can apply modern science theories and the technical means synthetically, understand the economy and management, and have the knowledge of humanities and society, is realistic problem to the colleges, need urgently to research and resolve. Although some universities are already aware of these problems and begin to take some measures for educational reform, but from the real goal of engineering education it is still a big gap. How to train the university students in the school environment to possess the ability of adapting, the society and the future work, is always a hard nut with educational reform.

2 The Status and Problems with the Higher Engineering Education in China

The current model of professional education is still based on traditional subject-based professional education in our country, this model of professional education

L. Zhang and C. Zhang (Eds.): Engineering Education and Management, LNEE 112, pp. 33–37.
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and training can not meet the requirements of modern engineers. The thought of more heavy theory of light practice is serious in our higher engineering education, most of the domestic engineering colleges take the construction of Research Universities as their target. Under this thought instruction, the school is weak or even lack of practice teaching, and it leads to lack of practical ability for the graduates, although maybe they can have the strong theoretical knowledge. Under the guidance and influence of the traditional training goals and training mode, the creative capability is the soft spot to our engineering talented persons generally. The traditional teaching methods of spoon-feeding that the teachers teach and the students record also enable students to develop learning passively, and as the result, the awareness of self-initiative is weak with the students. The infusion of monotonous professional knowledge in the school leads to the lacking of other related knowledge for the students in their task, they usually take care of a thing and miss the other in the engineering project, and lack of the ability to control the system. Implementation of the project is not isolated, but is existed in the social environment and system, our graduates are not obviously to prepare to work in this environment.

3 Based on CDIO, Build the Engineering Education Training Model Which Takes Strength the General Project Education as the Main Line, Takes Improving the Overall Skills and Developing the High Quality Engineering Talent as the Goal

CDIO denotes Conceive, Design, Implement and Operate, it is the newest research result of international engineering education reform in recent years, it not only inherits but also develops the idea of European and American engineering education reform more than twenty years[1]. CDIO philosophy is in line with our major of engineering education reform. CDIO is an open system that can have a variety of pattern, it provides us with broad space to play our intelligent freely. Based on CDIO, this paper build the engineering education training model which takes strength the general project education as the main line, takes improving the overall skills and developing the high quality engineering talent as the goal[2].

3.1 The General Education of Project Teaching

The key with the general education is to emphasize the various capabilities with the students, not only teach them with specific knowledge. CDIO correlative principle reflects the essence of general education, it requires the students to achieve the general capability with studying and practicing some concrete engineering project, and then can solve some issues with general engineering project in the project life cycle[3]. In other words, " learning-by-doing " could be carried out through specific projects, and abstract the capabilities and methods from the concrete engineering practice, this mode is in line with the general learning process that from the particular to the general. From the number of content varied engineering projects, which

should be selected to use in the teaching, the result may be same that all of them should make the students to access the general methods and improve the general capacities[4]. At the same time, the nature of CDIO general education to study is within specialties rather than disciplines, the realm of the concrete engineering project to study is limited, but the capability to achieve is beyond the limits, even if meet the new projects in the future work, students should have the ability to settle all the problems rely on the general solution. Actually, the length of schooling is limited, any professional education should not teach their students with all the knowledge needed to their future work, the key lies in proper understanding of general education is to train students with the high-quality, high capacity, is to obtain self-study, practical ability and innovation ability , this is their inexhaustible treasure for their life.

3.2 Implementation of General Education

The practical capacity development system of "progressive-stage, situation-based practice" is established in this paper. With the theoretical teaching, we can take the method of "essential teaching and practice in the best quality, combine instruction with practice", promote the method such as enlightened teaching, case teaching, simulated training and so on, exert ourselves to enhance the participation of students. In the respect of practice capacity development, in order to enable the students to directly feel the business atmosphere and experience personally with the project development, at the end of every semester, in the training scheme, we should combine the knowledge structure that the students have already had and set up practice activities.

For the freshmen, it is not suitable to get in touch with complete engineering project, but they can observe, study simple technique, listen to lectures on the project case etc, and have intuitive, personal contact and understanding with engineering project and enterprise practice.

Let sophomore complete simple true enterprise projects. Recognized by the former fulfillment, the lower grades of students are able to use their limited knowledge and self-knowledge to participate in some concrete projects. In the process of the project implementation, the students should be grouped according to the actual situation, in order to ensure the project completed in time, every group will complete the same task. During the implementation of the project, teacher will be the guidance and play the role of project manager. In this stage, the project must be real business project, not a virtual project. By this stage, students can exercise the research capability and cooperation capability, and then to have the engineering talent of the primary qualities.

For the junior, they will have the basic research capabilities, and also have the professional interest point and direction, in this case, they can accede to the laboratory to complete related research projects. At this stage, the time required to

complete the project may be different, the difficulty will vary widely, but require that the project is associated with the real needs of business, or is their real project. The ability to independence or cooperation will be assessed of the students in this stage.

Let senior enter the enterprise to complete the diploma project, at this time, the students will not be accompanied by the teacher, and it will not be many students into the same enterprise, the students will depend on themselves to integrate into the enterprise. In this process, students will achieve the integration of academic knowledge and business practice, while completing a business task, achieve the ability to work independently, the skills of integrate with others, and achieve the happiness to success in the enterprise.

3.3 Attention to the Cultivation of Comprehensive Skills and Quality

Now the problem in the engineering field are no longer a simple technical problem, but with the social, economic, ecological, cultural, and other humanities-related complex system problems. Problem of modern engineering is no longer the problem with a purely academic or an independent single domain. Work in the environment, it has to make the request of economic brains and supervision capability to majority of students, the reserve and development of this aspect in the school is necessary. Of course, it will be the method and link to achieve such knowledge from the course, but in the process of project study, the personal experience through served as team leader or a variety of roles in the project, the uses of various skills, the continues to improve the correction of perspective and way of thinking will be understand more deeply for the students. Therefore, the cultivation of comprehensive skills and quality not only achieved by the course, it must be combined with the project study, and also by “learning-by-doing”.

4 Summary

CDIO has already obtained success abroad, we can reform the teaching strategies based on this philosophy, and train the engineering talent that meets the actual needs of enterprise. We have reformed the strategies of engineering practice ability with professional education for many years. Over the years, we broke the traditional teaching mode, develop variety of research in the curricular teaching, and experimental models of independent innovation with a variety of experimental extra-curricular learning, emphasis on the teaching engineering concepts that "student-centered", "system object "and "product as the goal ", promote students " learn-by-doing", and have already developed a large number of high-quality talent with innovative spirit and practical ability. Graduates received the praise of the employer.

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The Misunderstandings and Implementation Difficulties in Education and Training Program of Excellent Engineer

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Abstract. The Misunderstandings and Implementation Difficulties in Education and Training Program of Excellent Engineer were analyzed. Universities should not misinterpret and overstate its connotations; the target should be training the practical ability of vast majority engineering major students rather than minority elite, and with the "mode returning" of engineering education and training perspective to review and implement the Education and Training Program of Excellent Engineer. The initiative of enterprises, the construction of practice teaching base in enterprises and the teachers in enterprises should be solved. State or local government should provide policy support for the relevant enterprises, universities should offer preferential terms for relevant enterprises, and only this can mobilize the participation enthusiasm and activeness of enterprises. The practice teaching base in enterprises should be Co-financing by the State, universities and enterprises; the two-way communication of talents between universities and enterprises should be pursued to strengthen the dual-qualified teachers.

Keywords: Excellent Engineer, Education and Training Program, Difficulties, Misunderstandings.

1 The Misunderstandings in Education and Training Program of Excellent Engineer

To improve the training quality of engineering education comprehensively, and to train high quality Engineering and technical personnel which adapt to the demands of economic and social development, the first batch pilots for "Education and Training Program of Excellent Engineer" were carried out by Ministry of Education in June, 2010, only 60 of the 1003 undergraduate universities which have Engineering majors were included in the pilot list. Many local universities are actively applying to join in the second pilots which will be started in 2011.

There are three characteristics of Education and Training Program of Excellent Engineer [1]: first, industries and enterprises were deeply involved in training process, second, the Engineering personnel will be trained with common standards and industry standards in universities, third, the engineering and innovation ability of students will be Strengthen.

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According to the aims of Education and Training Program of Excellent Engineer carried by Ministry of Education, its main purpose were to solve the defects of "Emphasizing the academic education and neglecting the training of practical ability", which exists in the personnel training mode of engineering major universities, and to solve the employment difficulties of graduates. However, the issue of employment difficulties of graduates, one hand, a large number of college graduates couldn't find jobs, on the other hand, it's difficultly for many enterprises to find personnel satisfied their own development needs and business capacity requirements. This suggested that there are not any jobs, but the personnel trained by universities can not meet the requirements of enterprises.

Despite of the pilots for "Education and Training Program of Excellent Engineer" have been taken in more than 60 universities, and many universities are actively applying to join in the pilots, the Misunderstandings about Education and Training Program of Excellent Engineer are existing commonly, according to the actual situation of universities where pilot have been implemented and the universities applying for.

1.1 Misinterpret the Education and Training Program of Excellent Engineer and Blindly Applied to Participate

Many universities hadn't really understood the connotation and implementation purposes of Education and Training Program of Excellent Engineer when they participated in or applied for the pilot, they regarded this project as a flagship or a reward to promote the popularity of the universities and to benefit for enrollment and employment. The really connotation of Education and Training Program of Excellent Engineer were neglected, or never consider how to implement the project.

1.2 Overstating the Education and Training Program of Excellent Engineer Blindly

Many universities comprehended the Education and Training Program of Excellent Engineer from literal meaning, considering excellent as good, an aimed to train excellent top-notch talents instead of practical engineering application talents. Thus when the project was carried out, the excellent students, which were selected from every major in the universities, had a total number of no more than 1 percents of all engineering major students in universities. High-quality teachers and laboratory resources of the university were centralized to server for very few students when drafting the training program and practicing the teaching plan.

Actually, it is more appropriate to regard Education and Training Program of Excellent Engineer as the "mode returning" of engineering education and training. For example, in 1980s, educational circles of Unite States, with The Massachusetts Institute of Technology as the representative, putted forward the engineering education philosophy of "returning to engineering", this suggested paying more attention

on engineering practices, improving the content of engineering education, overcoming the lack of engineering education "scientific", and returning from "scientific mode" to "engineering mode". The education philosophy of "returning to engineering" emphasizes the role of engineering practice and training in engineering education, especially emphasizes to train the engineering design ability of students, and all of this were a significant change of engineering education "scientific" mode[2,3]. Tsinghua University also conducted "cradle of engineers" as its talents training objectives before 1990s. Nowadays, many universities in china regard "research-oriented university" as their own development aim, and ashamed to talk about the goal of "training engineer". And this is the status the Ministry of Education wants to change via the pilot of Education and Training Program of Excellent Engineer, because the training aim of "elite education" was inconsistent with the original intention of Education and Training Program of Excellent Engineer.

1.3 Lacking Conditions for Implementation, and False Declaration Education and Training Program of Excellent Engineer

The Education and Training Program of Excellent Engineer emphasizes and demands enterprises deeply involved in training process, the Education and Training Program of Excellent Engineer can be really implemented and completed without the participation and support of enterprises. In addition, the experts from enterprises should participate in to draft the industry and enterprises personnel training requirements and training standards when applying for the project. In fact, some universities drafted the training program and implementation plan unilaterally, without the support and participation of enterprises, that was unilaterally established the school's "corporate standards", the differences with general training program executed in universities before were the change of practice process teaching location from school to enterprises and the change of teacher lists which adding the experts from enterprises. In fact, such projects were false declaration without participation of enterprises, and it would never be actually executed even if approved by the Ministry of Education.

2 The Implementation Difficulties of Education and Training Program of Excellent Engineer

Currently there are many common problems exists when decelerating or implementing the Education and Training Program of Excellent Engineer, and those difficulties are the key factors affecting the project implementation. If those difficulties listed below could not be resolved, the Education and Training Program of Excellent Engineer will be a mere formality or end in abortion.

2.1 How to Get Support and Participation of Enterprises

The making subjects of Education and Training Program of Excellent Engineer are Ministry of Education and universities, and enterprises must join in the implement of project, but where is the enthusiasm of enterprises? Colleges and universities have the task of personnel training, and the participation of Education and Training Program of Excellent Engineer can improve their reputation and the quality of graduates. But for enterprises, they should receive the obligations of training students besides normal production with no corresponding economic benefits and the affect of normal production, even a security risk. So it is unattractive for enterprises which have the purpose of pursuing economic benefits. This is the common problems encountered by universities during the declaration and implementation of the project, only the State or local government provide policy support for the relevant enterprises such as tax incentives, or the universities offer preferential terms for relevant enterprises such as staff training or staff incumbency diploma education, the participation enthusiasm and activeness of enterprises could be mobilized, and the problems encountered in implement of the Education and Training Program of Excellent Engineer could be solved.

2.2 Problems of Practice Teaching Base Construction in Enterprises

The construction of practice teaching base was the difficulties problem in practice teaching in the practice links of universities. In the planned economy era, the higher education was elite education in China, China's Large and Medium Enterprises all have the experience of accepting student internships, and they had the ability to accept them. But after the enrollment expansion in 1999, the higher education became popular education, the students in universities increase significantly, and enterprises were no longer willing to accept student internships. The practice links in enterprises were implemented by the network of people actually, no enterprises were willing to accept student internships actively, and this led to the poor practice ability of engineering major students trained by universities. In the Education and Training Program of Excellent Engineer, students should study at least one year in enterprises, which far exceeded the previous practice time in enterprises, so it is urgent to solve the problem of practice teaching base construction in enterprises. The practice base should not be constructed by enterprises themselves, as this would reduce the participation actively of enterprises, and the practice base should be funded by the State, universities and enterprises. The Education and Training Program of Excellent Engineer could be actually carried out only if the practice base construction in enterprises problem be solved.

2.3 Teachers in Enterprises

In the implementation process of Education and Training Program of Excellent Engineer, another difficult problem is the teachers in enterprises. The teachers in

enterprises are different with teachers in universities; their main duties are teaching student the appropriate practice course in enterprises except theory courses when implementing the project. The teachers should have practice experience besides the ability of teaching theory courses. That is the teachers should be dual-qualified, but the dual-qualified teachers, which are compound talents, are penurious currently. In present situation, the teachers in university have strong theory ability and lack of practical experience, while the engineers in enterprises have little theory teaching ability but rich practical experiences. The effective way to train dual-qualified teachers is the two-way communication of talent between universities and enterprises, the universities send teachers to practice in enterprises and the enterprises send engineers to universities teaching. In addition, the evaluation system of dual-qualified teachers should be built. To strengthen and push the construction of dual-qualified teachers, direct introduce talent from enterprises or other methods as improving wages can also be adopted[4,5].

3 Conclusions

The connotations should be captured when universities declaring and implementing the Education and Training Program of Excellent Engineer started by the Ministry of Education. The connotations should not be misinterpreted and overstated blindly, the target should be training and improving the practical ability of vast majority engineering major students rather than minority elite, and the perspective to review and implement the Education and Training Program of Excellent Engineer should be the “mode returning” of engineering education and training.

Acknowledgments. This work was funded by The Eleventh Five-year Plan Research Subject of Shaanxi Education Science (SGH 10060), and also supported by Education Reform and Research Subject of Xi’an University of Science and Technology (JG10020).

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Reform and Practice of Schools and Enterprises Build CDIO Engineering Education Mode

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Abstract. CDIO engineering education mode is the latest achievement in international engineering education reform. Though studying the successful experiences of foreign CDIO engineering education carefully, with the help of schools and enterprises build platform, we comprehensively studied and explored personnel training mode based on CDIO engineering education mode, and we also constructed an engineering teaching system of theory and practice, which was practiced in automation (systems integration) discipline. The education mode reform and practice will be shown in our paper.

Keywords: Schools and Enterprises Build, teaching reform, engineering education, CDIO.

1 Introduction

CDIO engineering education mode is the latest achievement in international engineering education reform[1]. By adhering to the principle of "learning for applying", we adhered to the path of school-enterprise cooperation in education. With the help of our schools and enterprises build platform, we constructed an engineering teaching system, and practiced it in automation (systems integration) discipline, which achieved good results.

2 School-Enterprise Cooperation, Exploring CDIO Engineering Education Mode

CDIO concept is the inheritance and development of Europe and the U.S. engineering education reform over 20 years, more importantly, 12 operable evaluation criteria were put forward which were about capacity-building, testing and full implementation[2]. By carefully studying and learning successful experiences of the international CDIO engineering education, we explored the education mode with our school characteristics.

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2.1 Schools and Enterprises Build Which Lay the Foundation of Engineering Education

In order to cultivate outstanding engineering and technical talents, we should have first-class environment for engineering practice. In recent years, by unremitting efforts, we cooperated with many international famous companies from 9 countries to build several laboratories, experimental centers and training centers. At present, we have built 23 build labs such as Mitsubishi Electric Automation Laboratory, Siemens Advanced Automation Joint demonstration Experimental Center, GE Automation System Integration Laboratory, Bosch Rexroth Mechatronics Experimental Center, Mitsubishi Electric laser processing machine Laboratory, Delta Automation Experimental Center, Weinuo Si Han CNC machine tool training center, Swan NC Simulation Laboratory, Asia-controlled Kingview automation software laboratory, U.S. Cypress PSOC Joint Laboratory and so on. And our center was one of Colleges and universities experimental teaching demonstration centers in Jiangsu Province. Engineering environment was created, and we are playing a leading role model in National Training Center of Experimental Colleges and Universities.

2.2 Training Programs Were Jointly Developed by School Enterprise Cooperation

Industry and business experts were invited to develop our personnel training plan. Based on 12 CDIO standards, by researching the employers, analyzing jobs and professional ability, designing curriculum and teaching, and discussing with enterprises, personnel training programs, curriculum and quality standards were made, which were CDIO training programs with the characteristic of "Undergraduate background + Professional ability"[3]. In our training mode, "project teaching, reality training" was the feature of theory teaching, engineering education was taken seriously, "learning by doing" was valued, students practical ability and professional quality were trained carefully.

2.3 Teaching Materials Were Jointly Prepared by School Enterprise Cooperation

Cooperating with U.S. GE Automation (Shanghai) Co., Ltd., Mitsubishi Electric Automation (China) Co., Ltd., and Germany Siemens (China) Co., Ltd, new materials for engineering education were prepared by enterprise engineers and experienced teachers.

3 Combining with Foreign Resources, Full Implementation of the CDIO Engineering Education

Since 2007, a comprehensive CDIO engineering education model reform was implemented on the automation (system integration) expertise. Four characteristics

were formed throughout the implementation process: enterprises to participate in the industry were invited, engineering practice ability was strengthened, standards guidance was focused on, and overall quality improving was emphasized.

3.1 Implementation of the CDIO Engineering Education Training Program

In our reform, engineering practice was emphasized in the training plan, some measures were taken. The proportion of practice in the education sector was highly increased on the bases of some necessary theoretical knowledge: in our basic course and courses, theoretical knowledge and practical knowledge ratio was 1:1, and the classrooms were our laboratories. "Learning by doing" teaching method was achieved. The control of automated production lines was the main teaching content with a reasonable combination of course modules. With the help of school enterprise cooperation laboratories, experimental centers and training centers, Various forms of engineering training were given, and students' engineering capabilities, technical expertise, professional quality and cooperating ability were improved obviously.

3.2 Constructing a Theory and Practice Engineering Teaching System

According to our new automation training program, we had built a practice education system for our automation system integration discipline: a main line, two modules, three links, and four stages.

A main line: the main line of practice teaching was system integration control of flexible production line in Industrial automation (FMS/CIMS), it involved Electronics, sensing and detection technology, hydraulic and pneumatic technology, PLC, computer control technology, numerical control technology, transmission technology, robot technology, bus technology, interface technology, human-computer interaction technology, etc.

Two modules: hardware configuration and control software of various techniques that involved in integrated control system.

Three links: basic experiment, project design and comprehensive training.

Four stages: Interim arrangements for mastering all kinds of system integration control technologies. Fist, introduction to Engineering Practice (visiting to enterprises and laboratories, production practicing). Second, Basic experiment works (Demonstration of Principle, experiments). Third, Construction projects (medium-sized and small projects Designing and controlling). Fourth, integrated engineering (electronic systems training, specialty comprehensive training, and graduate design).

3.3 Comprehensive Training to Enhance the Ability of Students

After the first two years of basis professional theoretical study, With integrated circuits, electronics, microcontroller, sensors and other technologies, students will have a 4 weeks comprehensive training called" Electronic system design and

debugging", which will give them a complete training experience about "concept - design - implementation - operation". In seventh semester, a 12 weeks Specialty Training called "Automation system integration and engineering training" was given, and enterprises will involve during the whole process. And Low-voltage electrical, PLC, Inverter, HMI, servo systems, field bus and other common areas of automation and control equipment, technology will be used.

The development and practice of professional comprehensive training course showed students today's advanced automation products and equipment training environment, and ensured that students master the system of automatic control technology, which made them possess the ability to control electromechanical control system.

Practice has proved that our students are highly recognized by peers and corporate employers.

3.4 Training Creative Ability in Extracurricular Science and Technology Competitions

A closely integrated with the engineering practice extracurricular technological innovation capacity-building new model was created. We provided students with a good extra-curricular science and technology innovation platform, and strongly supported them participating in various competitions. At present our students took part in National Electronic Design Contest, Automation Design and Innovation Competition, Robotics Competition, Engineering Training Competition and so on, and won 18 national awards and 47 provincial-level awards. Through competitions, the students' design cooperating, communicating, reporting and other processes level were significantly improved, and their overall Innovation ability was greatly increased.

4 Conclusion

"Excellent Engineers Education Program" is an important part of "Education Plan ", it is also one of major initiatives to build more powerful engineering education system[4]. Based on school-enterprise cooperation, researching international CDIO engineering education mode, and exploring applied talents training mode with our own characteristics, are effective ways to implement engineering education reform.

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Explore the Laws of Students' Cultivation by Grasping Features of Courses Accurately

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Abstract. The students' knowledge and their ability developments were treated as an integrated thing in this paper. By starting from the need of specialty, the theoretical leading function of basic courses was enhanced. By rooting in improvement of students' ability specialty, the extension of basic specialty courses was achieved. By focusing on the practical ability, the practical extension of basic specialty courses was demonstrated. This optimized the setting of curriculum system to achieve seamless transition from basic courses to basic specialty courses to specialty courses. Respect the laws of cognition and emphasize the integrity of students' cultivation. Adhere to the teaching laws and embody the uniformly of teaching perception. Depend on the development laws and stress on the comprehensiveness of ability develops. Especially, let students experience the "understanding-practicing-summarizing" learning method after the setting of course has been optimized. Thus, the students' knowledge accumulation and ability development simultaneously could be promoted. In this way the integration of students' cultivation can be achieved.

Keywords: Knowledge, Ability, Cultivation, Integration.

The courses students major in electric engineering are supposed to take are basic courses, basic speciality courses and speciality courses. During the process of learning knowledge and skill are supposed to improve and integrating ability should be trained. It's a very important subject in modern teaching revolution to view the process of fostering students as a whole from the perspective of the integration, coordination, connection and sustained developing of the education, and it's also of great importance to connect all courses well by grasping their characteristics so that students' knowledge and ability system can be improved coordinately.

1 Enhance the Theoretical Leading Function of Basic Courses by Starting from the Need of Speciality

Basic courses, which are also known as generalizing basic courses, or common basic courses are supposed to be learned firstly so as to foreshadow the following courses, exerting theoretical leading function in the integrated system of courses.

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During the process of basic courses, conduct the relationship between basic courses and speciality courses centering around the aim of fostering students and the need of speciality: design the curriculum of basic courses reasonably, which is required to embody the teaching perception that basic courses serve for speciality courses, making their contents meet.

1.1 Adjust the Setting of Basic Courses with Consideration of Integration and Objectives

The aim of basic courses must be redesigned based on the aim of fostering students, stressing the improvement of integrating skills and speciality skills of students to meet the general aim so as to exert the theoretical leading function for the opening of speciality courses. Enhance the communication between teachers of basic courses and teachers of speciality courses and adjust the proportion and emphases of each branch of basic courses based on the need of each speciality so that the aim of basic courses teaching can be strengthened and the integrity of fostering students can be brought forward to the basic courses process.

1.2 Cultivate Students Basic Speciality Quality, Focusing on Connectivity and Permeability

The relationship between different courses should be paid attention to while constructing the curriculum to assure that different courses be arranged in order and that the combination of theory with practice be intensified. The demand of construction of knowledge and skill of students should be meet and cooperation with speciality teaching should be made by stressing practicability and pertinence of contents and meeting the needs of speciality teaching in contents and teaching orders while penetrating speciality perception in basic courses in teaching method and the selection and edition of textbook under the premise of achieving knowledge system. During the teaching process both citing and practicing should be related to speciality if possible, so that students can broaden horizon and improve sensitive recognition in their speciality, and they can learn and love their speciality while immersed in it, even exploit and renovate their speciality, and that's the aim of fostering students: improve their ability in full respect.

1.3 Stress the Leading Function of Basic Courses with the Perception of Sustained Development

Laying a broad foundation for speciality courses should be considered during the setting of basic courses, because students must grasp comprehensive ability for future development. View form the development of curriculum setting, the construction of basic courses system must serve the form of students' ability to hold a

post, and their adaptation to the future development. The process of the form and the practical value of knowledge should also be paid attention to so that student's ability can be improved, and the updating of knowledge can be accelerated. It also helps lay foundation for student's ability to hold a post and lifelong study, and enhance the ability to develop persistently.

2 Achieving the Extension of Basic Speciality Courses by Rooting in Improvement of Students Ability Speciality

Basic speciality courses are the connection of basic courses and speciality courses, which accelerates the improvement of the whole knowledge and ability system. Achieve the extension function of basic speciality courses by connecting basic curses and speciality courses, and accomplish the scientific connection of knowledge system and ability training by extending practical ability and penetrating speciality knowledge based on basic theory.

2.1 Apply the Basic Theory Flexibly and Improve the Practical Ability Centering Around the Basic Speciality Contents

Basic speciality courses are based on the knowledge of basic courses. They have connection with basic courses while distinguishing from it. The internal relation between basic courses and basic speciality courses should be shown to the students at the beginning of the study of basic speciality courses, and the perception should be acknowledged that the new courses are extension and specialization of the basic knowledge they have learned. Meanwhile differences should be made clear to the students: it is independent and it is supposed to solve practical problems while basic course make merely pure theory research.

2.2 Extend Practical Ability by Penetrating Speciality Knowledge at Proper Time While Learning Basic Speciality Courses

The direct-vision of speciality knowledge helps analyze basic perceptions, and the practicality of speciality knowledge helps illustrate basic perceptions, and then arouse interests, desire and exploring spirits of students. Focus on practical link in basic speciality courses, which is very important to train the ability to analyze and solve problems of students, and updates the content and improve the proportion of integrating and designing experiments. Let students be the main body of experiments by encouraging individualism and developing renovate thinking. Make the lab available so that students can understand what they can not digest in class in virtue of practicality. Help students solve problems they have in practicality as soon as possible.

3 Demonstrate the Practical Extension of Basic Speciality Courses by Focusing on the Practical Ability

Basic speciality course is supposed to apply basic knowledge to speciality field, and it also a process to deepen and solidify the basic speciality knowledge, meantime it should lay theoretic foundation for practical course. The transformation of theory to ability should be emphasized during the process of compromising knowledge; we accelerate the combination of theory and practice by the "theory-practice integration" teaching method during the process of extending to practice.

3.1 Give Prominence to "Theory-Method-Ability"Compromising Basic Speciality Knowledge

Students have already achieved some speciality knowledge during the basic speciality courses, so they can easily cross the threshold of speciality theoretic course. During the theoretic speciality course, stress the compromising of basic speciality knowledge and theoretic knowledge by means of teaching, and emphasize the designing of teaching method in order to accomplish the "theory-method-ability" training, so that a good theoretic foundation could be laid for speciality ability.

3.2 Achieve the "Integrity of Theory and Practice" Teaching Method by Combining Tightly with Practice

It's difficult to have a good teaching effect in class because there are a lot of abstract perceptions in speciality course and practicality is emphasized, but the effect would be improved once connected with practice. During the process of theoretical speciality course, break the limits between theoretical course and practical course and combined them together. The teaching mode of integrity should consider quantity while focusing on practicality, and build several modules so that theoretical teaching and ability training could be combined well. The integrating teaching method can prevent theoretical teaching from being divorced from practical teaching, thus reduce the redundant part. The teaching method helps improve teaching quality and ability training by letting students participate in it subjectively.

4 Accelerate the Development of Knowledge and Ability Simultaneously for the Final Aim of Students' Cultivation

4.1 Respect the Laws of Cognition and Emphasize the Integrity of Students'Cultivation

Students can experience the "understanding-practicing-summarizing" learning method after the setting of course has been optimized. The application of reasonable

method and scientific recognition discipline in the teaching process can improve students' perception, understanding and memorizing, so that the ingestion of knowledge and improvement of ability can be carried through at the same time, achieving the aim of improving the integrating skill. the construction of curriculum system should be a closed teaching chain in which the recognizing process worked as the medium and the ability training be the aim, so the knowledge system and ability training could be connected.

4.2 Adhere to the Teaching Laws and Embody the Uniformy of Teaching Perception

Teaching process is a regular one whose disciplines are reflected by the process of students grasping knowledge under the guidance of teachers and the internal relations. The disciplines play a very important role in teaching process. Teaching discipline is objective law that reflects the essence. Teaching discipline should be based when teaching principle, teaching organizing form and teaching method were made. When the curriculum system was being settled, direct and indirect experience should be connected, passing on knowledge and developing intelligence should both be considered and the people oriented teaching perception should be embodied by both teachers and students participating positively.

4.3 Depend on the Deveopment Laws and Stress on the Comprehensiveness of Ability Develop

The formation and development of human ability is subject to natural laws which mainly consists of auto activity forming law, changing object developing law, creative activity accelerating law, progressing developing law, combine efficiency law, knowledge system accelerating law, theory guiding accelerating law and social demand restricting law. During the process of learning of four courses, the connection of three courses helps students form the independently knowledge gaining ability, scientific thinking ability, practical ability, creative ability and persistent developing ability, which deeply impressed students' personal development and helps them to hold a post.

Design teaching methods reasonably based on current curriculum system, and train ability scientifically by insisting profiting students so that students could improve their ability and skill coordinately and finally possess the integrating skills to hold their posts.

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The Practice and Exploration of "The Enlightened Self-study" Method

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Abstract. Aiming directly at the current situation of traditional teaching mode, no enthusiastic students' participation and the unsatisfied teaching effect, according to the educational philosophy of "the development for the students" and the cultivating regulations, this paper puts forward "the enlightened self-study" method, the background of which is given firstly. Then the classroom teaching mode and the key link of "the enlightened self-study" method are proposed. This method has lots of advantages, such as cultivating students' enthusiasm of self-study and innovative thinking capability, exerting the teacher's predominance and the students' subject function, promoting students' individual development by teaching them according to their aptitude, improving the communication between teachers and the students at the atmosphere of mutual cooperation. This well represents teacher's leading role and students' dominate position. The method stimulates students' enthusiasm of self-study and improves students' creative thinking.

Keywords: Enlightened, Self-study, Query, Creative Thinking.

At present, the universality of the multi-media means and the rise of the network teaching raise a new upsurge of teaching reform. The innovation of the teaching method is calling the renewal of teaching philosophy. The modern teaching should well represent the educational philosophy of "the development for the students", stimulate students' enthusiasm in their study, foster thinking ability and pioneer creative consciousness. The "enlightened self-study" method makes a beneficial exploration in this aspect.

1 The Background of Putting Forward "The Enlightened Self-study" Method

Under traditional teaching mode, teachers usually dominate in teaching process, impart knowledge and make great efforts in disciplining and teaching. Though they burn themselves, teachers may not give light to others. The students then become object and the client, the container of passively accepting knowledge. They are either followers led by the teacher or the rebellious forced to obey. What

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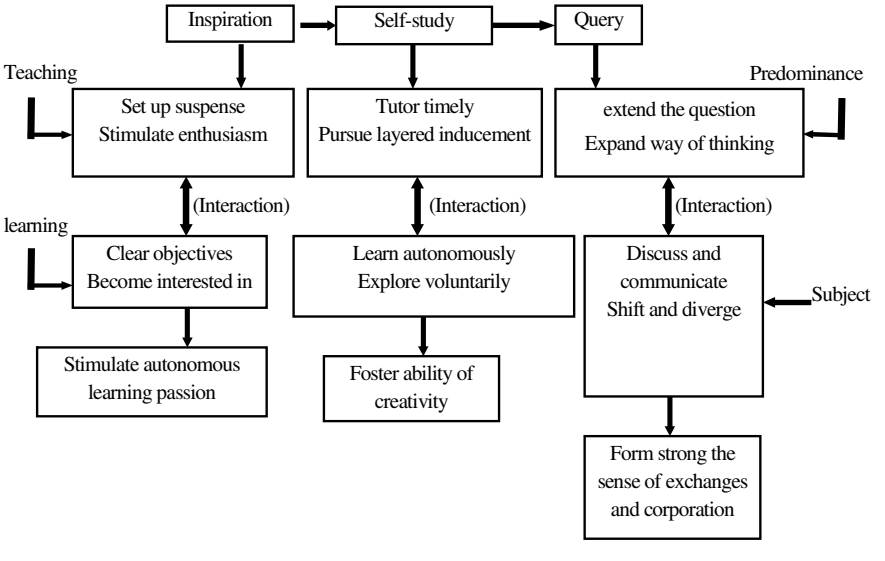
they usually experience is depression, tediousness, inaction, and even helpless sufferings. The teaching mode of "manipulation- attachment" causes the misunderstanding of the teachers and the students, and the opposition between teaching and learning, not to say learning while teaching and efficiency of the teaching.

The “enlightened self-study" method is to teach students how to study independently, think actively, and cooperates with each other. The students are led to explore and discover a problem in teacher’s guidance and inspiration, to seek the train of thought and method of problem-solving. The method not only can raise the enthusiasm and initiative of students’ study, develop students’ learning and thinking capability, strengthen creative consciousness, but also can promote exchanges and cooperation between the teacher and the students in the teaching progress. During the teaching, it has well represented teachers’ role and students’ dominate position, which changed the mode of traditional teaching of one-way infusion and adapted to the new request of "innovation education".

2 The Classroom Teaching Mode of "The Enlightened Self-study” Method

The “enlightened self-study" method should embody the total characteristics of autonomous study, initiative exploration, exchanges and corporation. It attaches importance to study independently and focuses on the cultivation of thinking and creativity. Its core is: autonomous study is the main body, and the inducement is the main thread. In the interactive process, students are supposed to learn how to learn, acquire knowledge independently and try to lay the foundation of creatively settling problems by discovering and putting forward problems in their self-study.



3 The Key Link of the “Enlightened Self-study" Method

3.1 Enlightening

At the beginning of the class, the teacher can skillfully create a situation to stimulate students’ thirst for the new knowledge and the autonomous learning passion to stir student s’ thinking fire. A well beginning of successful self-study is to create a good knowledge and mental atmosphere for students and form a self-study background.

There are many ways of inspiration. As far as contents and teaching objects are concerned, the writer of this paper tries to adopt the following ones:

a. enlightening students by setting suspense and arosing their interest

By setting suspense and creating a situation, the teacher can make students desire to know what they don’t know and solve what they don't understand, which can produce the cognitive needs and arouse students’ self-study interest. In the teaching of Aviation Chemistry Power, we usually set up suspense by inciting the phenomenon about the familiar fault of storage battery in the daily life and work to initiate students’ positive thinking to solve problems effectively in their self-study.

b. enlightening students by setting bridge between students and knowledge

When enlightening, the teacher should consider the difficult points in students’ self-study and give directions timely. The knowledge may become easier for them to comprehend by comparing related knowledge points. For example, when it comes to Cadmium-Nie storage battery, the teacher can inspire students to compare it with zinc silver storage battery, which will reduce the difficulty of learning new knowledge. At the same time, it also can consolidate the learned knowledge.

c. enlightening students by putting forward questions

To enable students to have a desire for problem-solving and activate their thinking, the teacher can skillfully put forward several questions. Then they can discuss together and work them out one by one. The teacher can guide the students to think correctly and analyze the problem the same as peeling an onion---peeling off the suspicions covered on the surface of the truth and then revealing the truth and regulation. It will be helpful for students to discard the dross and select the essential, eliminate the false and retain the true, proceed from the one to the other, proceed from the exterior to interior, which can continuously stimulate students’ learning passion and strengthen their self-study motivation.

d. enlightening students by placing a premium on a conclusion

In some courses, we can also try to start from the conclusion and guide the students to explore the process by self-study. Students should know the hows and the whys, which will deepen their thinking.

3.2 Self-study

Self-study is the key link that can successfully give full play to students’ main function of acquiring knowledge. Guided by teacher, the students can study purposefully and pertinently and acquire knowledge initiatively. As far as age structure and knowledge structure are concerned, the students already have a strong self-study

capability. They can grasp the steps and rhythm of their study, find and solve the problems. After self-study, the students can have a clear idea about the knowledge system and put forward questions. The systemization and integration of knowledge will be a great help to students' understanding of the learned knowledge.

There are three concrete methods: extensive reading, reading in detail, intensive reading. (a) Extensive reading is to read material roughly, and get an overall comprehension of the content, then schedule the self-study reasonablely; (b) Reading in detail is to read the specific content carefully, clarify principle and analyze the process, at the same time, to mark the important and difficult points; (c) Intensive reading is to study repeatedly, analyze detailedly, and think carefully the important contents as well as the questions unsolved while you read in detail.

3.3 Query

After self-study, Students unavoidably will have many difficult problems, which lead to launch a discussion between the students and the teacher. Some problems can be solved by questioning and answering among the students. Some are the universal problems existed which can be designed by teacher in advance. Those problems will stir students' thinking and enable them to hold a heated discussion. The teacher can participate in and give directions and hints to students timely.

The students together with the teacher can solve the problems by questioning and answering mutually in an atmosphere of equality, mutual help, and cooperation. This interactive bilateral activity creates a classroom atmosphere of teacher-student's tacit mutual understanding, emotion exchanges, wisdom collisions and passion. The students easily gain knowledge by their personal participation. On the other hand, the teacher tutors them timely, deepens knowledge properly, and grasps the crucial moment of discussion freely. At the end of the lecture, the teacher will achieve the teaching objectives by summarizing the contents and sublimating the knowledge system.

4 The Advantage of the "Enlightened Self-study" Method

4.1 Cultivating Students' Enthusiasm of Self-study and Innovative Thinking Capability

The "enlightened self-study" method gives students many self-study opportunities and thinking space. In order to inspire, encourage and help mutually, the students actively read, think, do experiment, operate, launch mutual discussion, and communicate the study method, even the learning attitude, emotion, and will...etc. The teacher guides the students to discuss the key and difficult points, thinking mode, teaching material freely. The teacher and the students can rectify, supplement and evaluate mutually. The course practices students' thinking qualities of flexibility, extensity, profundity, and criticalness etc.

4.2 Exerting the Teacher's Predominance and the Students' Subject Function

To create a situation and trigger self-study desire, the teacher himself has to dive into the teaching material, design enlightening method skillfully, and guide correctly. Students' learning styles have changed from passive acceptance to active exploration, which provides sufficient space for the divergent thinking and effectively open the passage of study imagination. To the maximum extend, it can mobilize students' imagination and creativity, thus to create a harmonious class atmosphere.

4.3 Promoting Students' Individual Development by Teaching them According to their Aptitude

The "enlightened self-study" method gives students a lot of time and space, which increases the freedom degree of learning. According to their respective level need, students can start from reality in achieving learning objectives and tasks, and implementing teaching requirements, approaches, methods and speed etc. Finally, the students will achieve the common progress and gain somewhat each. The method enables teaching effect truly implement to each student and fully represents the educational concept of "all for the students.

4.4 Improving the Communication between Teachers and the Students at the Atmosphere of Mutual Cooperation

The method is beneficial to build the equal and cooperative relationship between teacher and students, promote the democracy in the classroom, and carry out a tacit understanding between teachers and the students. To the maximum extend, it realizes the teacher-student interaction and stimulates students' learning passion. The method also cultivates students' humanistic spirit and scientific thought, which enables quality education to enter into the classroom.

Teaching is a regretful art. There is no best, only better. Therefore, the research and pursue of teaching method is never finished. The new ages gives us new mission, lets us work harder and harder and forges ahead with determination, which enables modern teaching to root, sprout in the fertile soil, and bear rich fruits in our college.

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The Cultivation of Competent Engineering Majors Oriented by Industrial Demand

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Abstract. Most majors in Harbin University of Science and Technology are engineering ones. But in higher engineering education of the university several years ago, there were such internal problems as outmoded educational ideas and modes, unbalanced courses offered, less close cooperation with entertainments, weak links in practice, and less internationalized development. To solve these problems, by the inquiry and analysis in some important and hot industries of northeastern old industrial base, HUST have made a series of reforms on her engineering education recently to reconstruct higher engineering education's talents-training ideas, to implement creative education, to consolidate students' engineering practice, to advance further coordination between industries, university and research centers, and to advocate internationalized ways. After four-year practice, the effects are perfect.

Keywords: Higher engineering education, Cooperation of university and enterprise, Talent cultivation, engineering competence.

1 A Brief Introduction to HUST

Located in the northeast of China, Heilongjiang Province is an important base of equipment manufacture industry. Harbin University of Science and Technology was set up in 1950 and was affiliated to the Ministry of Machinery Industry of China with engineering programs only. Since the reform of educational system of China in 1998, Harbin University of Science and Technology has been under the administration of Heilongjiang Province and has become a multidisciplinary university.

From the figures, we can see engineering specialties account for 52 percent and the students majoring in engineering account for 69 percent. The engineering specialties are still taking a leading position in our university, as is also the case in other universities in China. Statistics show that the total of 6,550,000 engineering undergraduates in 2006 ranked the first in number in the world [1]. So priority should be given to the cultivation of engineering majors.

L. Zhang and C. Zhang (Eds.): Engineering Education and Management, LNEE 112, pp. 61–66.
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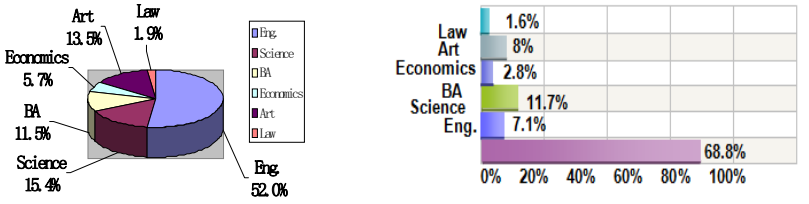

Fig. 1. The Ratio of Specialties and Sources of Students

2 The Problems Confronting Engineering Programs

Currently, there exist some unavoidable pressing problems confronting engineering problems as follows:

- The development strategy and the target orientation are not clearly defined. The education authorities advocate the cultivation of students with a broad range of professional knowledge, while the enterprises demand students with specific knowledge.
- The out-dated engineering curricula and inadequate professional practice make it less closely related to the demand of the industries [2]. Some teachers are less experienced in systematic engineering practice. The university is lacking in effective exchange and cooperation with enterprises in terms of students cultivation.
- The system of certified engineers has not been perfectly set up yet, which has resulted in the vacancy of external comparatively-consolidated criteria to evaluate engineering education.
- The increasing number of students and the broadening of the students' professional knowledge have created a gap between the university and the enterprises, leading to the weakening of the characteristics of specialties.

Consequences: The inconsistence of cultivation orientation, the mismatch of the students' cultivation and the demand of the industries, and the teaching quality has also been queried.

3 New Opportunities for Further Development

- The newly-issued National Medium and Long-term Educational Reform and Development Program has put forward a set of measures to solve the problems mentioned above and required that a new mechanism be established to cultivate the students cooperatively by both universities and enterprises.
- A great number of engineering majors are badly needed in the process of the transformation and the industrial restructuring of the Northeastern Industrial Base.

"Ideas on the Strategy of Revitalization of the Northeastern Industrial Base" issued by The Central Committee of the Communist Party of China in 2003; "Ideas on the Strategy of Further Revitalizing the Northeastern Industrial Base" issued by the State Council in 2009; Education Serving the Revitalization of the Northeastern Industrial Base" issued by the Education Department of Heilongjiang Province in 2004; "Educational Development Strategy for the Strengthening of Heilongjiang Province" issued by Heilongjiang Provincial Government in 2008.

- Our university has shifted its focus from size expansion to quality construction and increased the fund on the construction of labs in recent years, which has helped to greatly improve the lab conditions.

All this provides a very good opportunity for the reform of engineering program in our university.

By investigating the key enterprises in the Northeastern Industrial Base, we come to the understanding of the reform on the cultivation of high-level engineering personnel as follows:

(1) The need for engineering majors in our country determines the basic requirements of the structure, employment orientation, competence and quality of the students.
(2) The main reason behind the difficulties for students to search jobs and for the enterprises to hunt for competent graduates lies in the indeterminate goal in the traditional mode of cultivation, and leads to the unbalanced knowledge structure and inferior practice ability.
(3) The demand for engineering majors takes the shape of a pyramid in terms of quantity. What we can do is to meet the demand by cultivating our students at different levels and with specific purposes.
(4) A large number of graduates majoring in applied engineering and technology are needed in the process of industrialization in our country, so we need to attach great importance to the cultivation of the students' practical abilities. [3]

4 Pilot Programs

Based on a sufficient consideration of these three aspects, namely, industrial demand, programs and disciplines, and the development of students' individuality, we have engaged ourselves in establishing a cultivating system of engineering education oriented by the need of industries in such programs as Electrical Engineering and Automation, Mechanical Design and Manufacture and Automation, and Software Engineering since 2006.

4.1 Reform on the Student-cultivation Mode on the Basis of University-Enterprise Cooperation

Drawing on the experience of the cultivation of engineering majors at the international level, engineering practice should be the focus for the curricula of senior

students. Therefore, the "211" cultivation mode has been introduced into the pilot classes. The so-called "211" mode means that in the first two years of college, the students will have rudimentary courses and rudimentary courses of technology, while in the third year, they will take specialized courses relevant to their majors, and in the fourth year, they will have relevant practice in the enterprises and at the same time complete their graduation projects.

4.2 The Establishment of Diversified Curricular System

4.2.1 Offering Relevant Core Courses and Elective Courses to the Demand for Graduates of Different Capabilities

Each pilot program has formulated two sets of student-cultivation schemes: one is academically-oriented, emphasizing the theoretical studies and lab experiments in the curricular design, as well as scientific research training in the practice program; the other is application-oriented, emphasizing the internship and operation training in the curricular design, in addition to skill training in the practice program.

4.2.2 Setting Up Enterprise-Entrusted Classes

So far we have set up several Enterprise-entrusted Classes as well in cooperation with some key enterprises, such as Tebian Electric Apparatus Co. Ltd. in electrical engineering program and Neusoft Group, the largest IT solutions and services provider of China, in software engineering program, etc.

4.2.3 Increasing the Ratio of Elective Courses and Practice Program and Laying Emphasis on the Development of Students' Individuality

4.3 Constructing "Two-Phase" Engineering Practice Teaching System

(1) We have set up on-campus practice teaching base to create authentic enterprise environment and have built up authentic case corpus. And at the same time we have strengthened every aspect of the practice program to develop the students' ability of essential practice.
(2) We have set up off-campus engineering practice bases, at which the students can experience the authentic enterprise environment to develop their capability of solving practical problems using what they have learned. In this way we expect the students to improve their competence in engineering practice and industrialized quality.

4.4 Establishing Dynamic Adjustment Mechanism Concerning Programs and Curricula

The programs and curricula are adjusted timely according to the change of job-demand from the industries in cooperation with the enterprises so that the new knowledge can replace the old.

4.5 Introducing Advanced Teaching Methods

We adopt the "Learning by Doing" method by using CDIO concept of the engineering education. Case teaching is introduced as well based on the actual cases from enterprises.

4.6 Reforming the Evaluation of Students

The emphasis of the evaluation of the students in pilot classes has been shifted from the assessment of knowledge to the assessment of competence. In this way, we hope to inspire the students' interests and creativity.

4.7 Setting Up Open Mechanism of the Construction of Engineering Faculty

(1) Every year 3 to 5 young teachers in each pilot program may have the opportunity to study and do research work in the relevant large-sized enterprises so as to enhance their competence in engineering practice.
(2) Every year the technicians from large enterprises will be invited to work as part-time teachers so that students can learn about the latest technology, management methods and the latest trends of the industries.

4.8 Trying to Set Up Long-Term Mechanism to Improve Teaching Quality

By introducing the concept of CMM, we have set up a Capability Maturity Model in the process of teaching to implement quantitative management and quantitative evaluation, and to improve the mechanism in the process of teaching, which ensures the enhancement of the teaching quality.

Acknowledgement. Item in-aid: Research item for talent cultivation of science and technology in engineering from ministry of education(10JDGC007).

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Personalized Multi-layer Talents Cultivation Mode of the Material Molding and Control Engineering Major

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Abstract. Considering students' multi-level career development, employment trends, a new multi-level talents training mode has been designed. In this mode, the professional education on academic knowledge in a broad general way was developed. Meanwhile, not only the theoretical system with condensed contents and strong foundation but also the open practical teaching system with multi levels and various directions were constructed. In teaching organization, students were divided into classes according to their scores and personal intentions for fundamental courses, and the hierarchical teaching method was adopted for different career requirements. In teaching design, both the compulsory and the optional programs were provided. Many quality-deepen modes in the second class can be independently chosen to meet with the demand of personal learning. Therefore, students can choose the topic interested and specialized in many sections such as curriculum design and graduation design. Satisfactory effects have been achieved through seven-year practice.

Keywords: Training mode, Personalization, Multi levels, Material forming and control engineering.

1 Introduction

With the development of the society, how to cultivate senior talents who can satisfy the needs of The Times is always being an issue that people all care about. Higher engineering education reform has been a question that people concern a lot. Aimed at this problem, the domestic education workers have carried out a lot of research. Literature[2] analyzed the problems existing in such aspects of higher engineering education as course system, teaching process and the construction of teaching material. Literature[3] introduced the school's "the mechanical types" teaching and curriculum system reform plan. Literature [4] introduced Tsinghua University's experience on how to cultivate the students' innovative spirit and practice ability in communication circuit practice. Literature[6] gave MIT as a typical example, analyzed the international development trend of higher engineering education reform in such aspects as of engineering education system and teaching management

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reform, course system and contents. Literature [5] emphasized using practice to cultivate the students' learning ability and innovation ability. In conclusion, all literature [1-6] provides some valuable advice and guidance method for our school.

In 2005, our school started to open a new major named material molding and control engineering, which was combined with former casting, forging, welding, heat treatment and other specialties in 1998 .At present, the major---material molding and control engineering continue to have its original professional curriculum features, only more comprehensively. For example, some universities' curriculum is compressed and synthesized greatly on the main teaching content of the old major including casting, forging, welding, and heat treatment. In each subject direction, one or two courses are extracted from old major , and some common courses are opened; In some colleges curriculum stresses on mechanical or material class besides retaining the main course of material forming and processing; while some other colleges' curriculum leans to mould design and manufacture. The major in our school belongs to the integrated one and focuses on welding direction.

2 Cultivating Goals

At present, employment flow of the local university graduates presents stratification: (1) quite parts of students are admitted to be postgraduate for further study. (2) a part of the students are employed in enterprises like foreign investment, joint ventures or large state-owned enterprise. (3) about 40 percent of the students are employed by local enterprises. This situation put forward higher request for students and schools. Single talents cultivating mode and uniform teaching can not meet personalized requirements of students' individual development any more. Under these new circumstances, although University of South China is a college which was co-built by Hunan province and State Commission of Science and Technology for National Defense Industry, to some extend our graduates have industrial advantage in employment, our college also meet new pressures on talents cultivating along with other local universities.

Based on the above analysis, we have established new concept for personalized multi-level talents cultivating to meet multi-level social needs, respect students' diversified value orientation, and focus on quality training and ability training. According to the situation of our school, the gradual goals were established: (1) ensure about 15 percent of graduates continue to pursue advanced studies of postgraduate. (2) ensure around 35 percent of graduates to be employed in relevant institutions affiliated with State Commission of Science and Technology for National Defense Industry and nuclear industry system engaged in design job at the leading edge of this discipline domain. (3) ensure around 40 percent of graduates work in local enterprises with applied technology jobs of this discipline.(4) about 10 percent students employ themselves and work in some other domain.

3 Concrete Implementation Plans

3.1 Construction of Talent Training Mode

Students of the major—material molding and control engineering in our school were not only required to grasp the forming principle and methods of traditional mechanical manufacturing, but also emphasized with the metal plastic forming as the main line, welding technology as the key, and being familiar with processing methods of typical nuclear power machinery parts for features. Aimed at this feature, considering the industry and local character we should unify recognitions that we should persist in enclosing the core of develop multi-level talents in the time of professional orientation and training mode build. Following the principle of students-oriented, not only the mode-teaching students according to their aptitude was strengthened according to personalized requirements, but also autonomous learning was encourage. Meanwhile, not only the theoretical system based on subject knowledge with condensed contents, strong foundation and selectable "platform & module" but also the open practical teaching system with multi levels and various directions, which co-built by school and enterprises were constructed. Students' subject status was highlighted in study, and their personality and specialty were full developed. In many teaching sections such as classroom teaching, practice, extra-curricular activities, curriculum design and graduation design, not only the coordinated development of students' knowledge, ability and quality was emphasized but also spirit of innovation and the innovation ability was highlighted.

3.2 Curriculum Settings

Firstly, according to teaching objectives, a curriculum foundation that composed of Advanced Mathematics, Physics, theoretical mechanics, mechanics of materials, and engineering graphics etc. was set up. In view of professional characteristics, a series of specialized curriculums that composed of materials science foundation, material forming principle, welded principle, liquid forming technology, metal processing technology, heat treatment developed principles and process were set up. And relevant optional curriculums, such as CAD/CAM, CNC technology, nuclear power equipment welding technology curriculums were prepared for students. Secondly, to keep up with the development of disciplines and the demand of employing units for talents, both the professional curriculum design and graduation design were set up in multiple professional direction modules, students can choose interested topic independently according to specialty, which was welcomed by students and also guaranteed the quality of training.

3.3 Measures of Layered Teaching and Personalized Cultivation

(1) Considering a necessary of different needs , students were sorted into A and B class according to their scores and individual intend in basic compulsory curriculums like English, math, physics and others, which guaranteed that around 15 percent of students passed the postgraduate entrance exam, got the chance to further study. With regard to students who have spare capacity, deepening module of the multiple second class forms was provided, so that they could study further independently. In practical teaching, the experiment content was divided into two parts, required and selective ones, which students can choose interested part to satisfy their needs for personalized study.

(2) Autonomous learning was advocated, for self-learning ability is the necessary quality for students' sustainable development. In order to encourage students' autonomous learning, training plans were made both considering students' generality and personality development. In curriculum setting, the proportion of elective courses which open to all the students increased, and all professional electives were prepared by module for students.

(3)Considering the process of students' learning and cognition, a series of practice were arranged progressively, the aim and requirement of which were declared, meanwhile the content and methods of practice were reformed. There are four different levels of graduation practice during four year education, such as cognitive practice, metalworking practice, and procreative practice. All of these practices were carried out in the factory of school and medium-sized enterprises such as Sino steel of Hengyang, and Hengyang Steel Tube Plant which helps students to understand the various types and characteristics of mechanical production in industry gradually and deeply, especially make them master the applicative methods of the professional academic knowledge. With all of these means notable effects have been made.

(4) Reformation test method. Besides the traditional closed book examination, open-book examination, writing papers, interview, etc. were added. Higher score for their daily performance were given to those students who have distinctive opinion and innovation to arouse their enthusiasm and cultivate personality and innovative consciousness well.

4 Effect

With years of research and practice, the construction of the major --material molding and control engineering has achieved good results in our school. The students are more competitive in certain employment, for example, in 2010, 15 percent of graduates entered some "985" universities for further study, while 30 percent of them were employed in large or medium-sized enterprises of nuclear power field and about 45 percent of them worked in some local enterprises. Since 2006, the students of this major have got 3 awards in national academic competition, 10 provincial awards as well as 25 university-level prizes, including the first prize

which was awarded in the 11th "challenge cup" national university students' extracurricular technology works competition in 2009, a first prize in the eighth "challenge cup" of Hunan province, totally 10 times of university-level recognition. This teaching method based on people-oriented guides' students of different levels to finish school effectively, and stimulates every student's innovative potential well. With the effective measures, a strong practical innovation atmosphere has formed in this major. In recent three years, nearly 60 percent of students of this major participated in various technological innovation activities. This training mode also got high praise from the experts who were in charge of profession evaluating.

Acknowledgements. The authors gratefully acknowledge the foundation by Teaching & Education Research Reform Projects of Hunan Province with the project number 2010-206.

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Engineering Education Reform in the Synchronization of Higher Education Management

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Abstract. People have realized the importance of engineering education, proceed with the reform of education in the training mode, some people proposed a lot of more scientific, innovative training models of reform, however, in the course of implementation these models of reform has been difficult, and with little success, the reason is related with the behind-hand management system of engineering education. This paper discussed the engineering education reform in the synchronization of higher education management from these aspects, such as higher engineering education innovations of principle in school management, construction and management of teaching staff, construction of a new student management system, and so on.

Keywords: Engineering Education, Project teaching, School Management.

1 Introduction

Since the Industrial Revolution, engineering and technical personnel has played a huge role in promoting of the national economic and technological progress. Whether it has a large number of high-quality engineering talent has become the important factor of effecting national core competencies. In recent years, engineering education is being subjected to the thought that science has absolute predominance than engineering, it emphasizes theory study too much, doesn't attach importance to engineering practice and synthesis capability. It needs more to carry on innovating with educate idea and reforming with teaching mode. Higher engineering education reform can not be done independently, the whole school system and management must guarantee for its implementation, it is necessary that the system is updated and the management reform is synchronous, and it is the important guarantee for the success of engineering education reform.

2 Higher Engineering Education Innovations of Principle in School Management

The success of any reform is started from the concept of innovation. The reform of training model is the result of profound reform with education thought and

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educational concept. In the past, we focused on content innovation, but now, we realize that if we want to do some innovative content, the first step to make the concept of innovation.

In our country, higher education has entered the stage of popularize education, from the history and reality of world higher education, in this stage, it is required that each higher education institution forms the relatively definitely and reasonable functional-level, training model is multiform, the school management also has distinctive features. However, there are many issues with the college and university in our country, such as characteristics are not prominent, blindly keep up with to the search type university, emphasizes theory study too much, doesn't attach importance to engineering practice and synthesis capability, and so on, the main cause is that our country is still not running away from the traditional concept of elite education. The reasons may be various, but from the perspective of management, school orientation is unclear is an important reason. Therefore, we should think deeply, "What kind of training people" and "how to train people", on this basis, change the management philosophy[1]. The thought of the school and management model should be different with each university. They should establish the management systems which meet the needs of management philosophy.

3 Construction and Management of Teaching Staff

For the talented training, the teacher is the direct manager. Currently, the majority of our university take the system which combines the counselor and lecturer, the counselor is mainly responsible for the ideological and political things or daily life management, the lecturer is mainly responsible for teaching and directing the study and graduate design of the students, counselor and lecturer is the key management team in our country. Implementation of new training models, the students will have more choices with specialty selection, course selection and the whole process of study, the forms of learning will also be more flexible, it means that students will face more problems, and need more guidance and assistance. At the same time, due to pay attention to the training of comprehensive capability and diathesis, the school not only wants to teach, but also should guide students to develop their own interests, talents, development and planning of life goals. Lecturer not only to impart knowledge in the classroom, but also with their academic attitudes and charisma to influence, guide and develop students interest with learning, develop the new way in organizing students to actively participate in research seminars, and guide students to self-solve difficulties in the learning process, train the students with self-learning ability and practical ability. These all proposed for our teacher with the higher and specified ability, to do this, we must improve the level of professionalism of teachers, and draw lessons from the experience that the foreign tutor undergraduate, enhance their sense of responsibility. We should look for breakthroughs in the human resource management with schools, such as improving the existing performance appraisal system, the introduction of incentive system, competitive system, and elimination system, and so on.

In higher engineering education, it is required that the teacher should take the initiative to accumulate its own engineering experience, and continuously upgrade their engineering capabilities. Especially with the implement of project-based teaching, it will be indispensable to the teacher's practical engineering ability and experience. But the existing shortage of most teachers is that the engineering experience of our teacher is very limited, although maybe they will have solid professional knowledge. To improve this situation, universities should introduce measures, and provide the necessary conditions for the teachers to improve their ability, such as off-job training, semi-sabbatical study, do some projects with the enterprise etc. In addition to sending teachers to the enterprise for training, we should also invite experienced industry engineers as our part-time teacher, and let our students get the engineering knowledge, capability and experience from them.

4 Construction of New Student Management System

Student management as an important part of the school general management, includes learning management, extra-curricular activities management, extracurricular activities management, life management and so on[2]. In addition to the normal maintenance of the fundamental role of education and teaching, student management effects the students development with the talented training objectives, training content and methods, and it plays very important role to achieve the objectives of school[3]. At present, the pattern of our student management is single, focuses on rigid management, easily neglect the student's master and activity. So it is the real request that build the new training model which adapts to the student management system. Some universities deeply considered about the internal and external relations based on student management and training reform, and do a lot of attempts, exploration and innovation in practice. Of course, the manage system reform still should be set out from the physical truth of each school, according to the situation of every school, have special feature.

5 Emphasis on Management and Coordination Functions of the University

It is an important function of the university management that coordinates the work of different departments of school, coordinate the relationship with school and community, or school and other segments of society. Internally, the segment of university is numerous, although the clear division of each segment, it needs the close coordination with each other to ensure the efficient operation of the entire university system, and ultimately realize the school's fundamental task of training. From the outside, the present university is no longer an ivory tower, successfully market themselves, build up the prestige and popularity is an important guarantee to develop in the market economy. Therefore, coordination function in the university management system has become an important part, it should coordinate the operation of internal departments of school, but also handle the coordination of

schools and other social segments actively build a broad and open university platform, actively promote exchanges and cooperation between schools and enterprises. Bring the coordination function of university management into full play is an important guarantee for university efficient operation.

6 Material Security Reform

No matter which mode of engineering education reform is implemented, all need the support and guarantee of objective conditions, it is necessary to increase investment, on the premise of limited resources, coordinate the allocation of resources and improve resource efficiency. State support is essential, but from the perspective of the school actively thinking about how to get more adequate funding for education, expand of school financing ,improve the efficiency of the limited funds, change passive position is new perspective for our university to reform the project education. These are new challenges to university management. Meanwhile, concern about the above issues, they also remind us that schools in the reform process of implementation should be gradual and act according to our ability. Any reform is not a short time, one process, schools should complete full investigation, argument and viability assessment etc. before the implementation of the reform, establish the comprehensive implementation plan and the routes to ensure the implementation of the reform[4].

7 Summary

The target of higher engineering education is to foster the senior engineering technique talented person. To the development of the economy with our country, it plays an important role. Higher engineering education is based on the thought of "Practice". The talented person whom it trained must face the engineering practice, but that exactly is the main lack of the engineering technique education in our country. However, higher engineering education reform can not be done independently, the whole school system and management must guarantee for its implementation, it is necessary that the system is updated and the management reform is synchronous, and it is the important guarantee for the success of engineering education reform.

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Development of Master of Engineering Programs for Engineering Education

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Abstract. In order to accomplish the strategic plan of The Ministry of Education of the People's Republic of China, masters of engineering program for full-time students are offered since 2009. The background, objective and obstacle are elaborated. Then graduate professional degree programs in School of Mechanical Engineering, Shandong University, are proposed, mainly introducing their curriculum structures. Finally, we outline types of graduate project/thesis for MEng students. We conclude the body of the paper with some brief comments about implementation.

Keywords: Master of engineering, Professional degree, Curriculum, Engineering education.

1 Introduction

Before 2009 there were only academic master degrees offered for full-time students in China. It's found that the academic masters can't meet the requirements of the developing society, because most of them did not continue PhD degrees, but chose to find occupations. The enterprise complains that the academic masters have no enough professional skills and even no enough research ability, for the research projects are always done by doctors. In order to accommodate to the need of the high-level professionals, master of engineering programs have been undertaking reformation from 2009, which began to admit graduating students to the program. From 2010 enrollments of academic degree students were cut down to increase the professional degree students, with the ultimate goal of professional and academic graduate ration of 1:1 in the near future [1].

In order to accomplish the strategic plan of The Ministry of Education of the People's Republic of China (MOE), the graduate program committee of School of Mechanical Engineering, Shandong University, has started to offer masters of engineering program for mechanical engineering, industrial engineering, vehicle engineering and industrial engineering. In the following section we present 4 classes of instructional objectives for our program and the obstacles. In the next section, we outline the curriculum structure so that the reader will know explicitly what has guided us. Then we outline types of graduate project/thesis for master of engineering students. We conclude the body of the paper with some brief comments about implementation.

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2 Program Objectives and Problems

The Master of Engineering (MEng) is a professional degree program intended for those who have a Bachelors degree or equivalent in an engineering or closely related science field from a college or university of recognized standing[2,3].

The essential objectives of the MEngs are as following:

(1) Knowledge: solid theoretical basis and extensive professional knowledge;
(2) Ability: using the professional knowledge to analyze and solve problems, ability to creatively engage in practical work of the high-level professionals;
(3) Professional ethics and spirit of innovation;
(4) Team work and communication skills.

Efforts to teach MEng within university and industry have begun, but, here too, progress has been relatively slow. Several reasons help to account for this:

(1) Backwardness idea – The society, including industries and students, is not so familiar with the program yet. The first grade is graduating in 2012. There is prejudice that MEng is less qualified that academic masters.
(2) Organizational issues – Professional skills education needs cooperation of industries and university. The industries in China haven't built their interest to support MEng students' field practice.
(3) Shortage of qualified practicing professors. Now most of the young faculties have no professional experiences by themselves. How can they train MEng students? .
(4) Inertia and resistance to change [4]. New training course and effort should be done. But there is Inertia or resistance to change by nature.

3 A Proposed MEng Program

A MEng program for full-time students is developed in School of Mechanical Engineering, Shandong University. Here we mainly illustrate studying years restricted, curriculum, and project/thesis types. We hope that our proposal will spur comment and thought, and best of all, suggestion for us.

3.1 The Program Template

The proposed program is for 3 years' study, in which there is at least one year's industrial experience. It requires 28 credit hours of graduate study. The 28 credits consists of minimum of 8 credit points of general coursework, 10 credit points of major theory coursework, and 8 credit point of practice work. Project or thesis work is 0 credit point, but compulsory. The curriculum is illustrated by Table 1.

Table 1. The proposed curriculum structure

Module Description	Credits at least
general module	8
major theory module	10
practice module	8
project or thesis work (Compulsory)	0
In total	28

3.2 The Courses

The teaching content should integrate theoretical and application oriented stuff. Case study and practice study are strongly encouraged. Ability training and profession oriented teaching are emphasized in teaching strategies. Teamwork, field research and simulated training are utilized to build problem solving spirit and ability. The courses include general module, major theory module and practice module.

(1) General Module

It is the public course carried out by the University, including:

PP0809001 Marxism Theory, 2 credit point

PP0891016 English for science and technology, 3 credit point;

PP0819001 Engineering mathematics, 3 credit point

(2) Major Theory Module

Mandatory courses and elective courses of the majors are offered. Each student should take no less than 3 mandatory courses, each having 2-3 credit point, and no less than 2 elective courses, each having 2 credit points.

The mandatory courses are designed according to the first class discipline-Mechanical engineering. The elective courses are designed according to different secondary class discipline-mechanical manufacturing, mechatronics, mechanical design theory, vehicle engineering, industrial engineering, and industrial design engineering.

(3) Practice Module

Practice courses are designed according to training objective, including mandatory practice courses and elective practice courses. Each student should take no less than 2 mandatory practice courses, each having 2-3 credit points, and no less than 2 elective practice courses, each having 2 credit points.

3.3 Field Experiences

Professional practice is the important training links for MEng students. Sufficient and high-quality professional practices are essential to guarantee the education quality. In the three years' study, MEng students of fresh graduate should have at least one year's field experiences. It can be done as a focused practice or sectioned practice.

In order to pave the way for MEng students' field practice, we are seeking and signing practice base or partnership with the enterprises. The advisors are also responsible for recommend and identify students' practice experiences.

3.4 Graduation Project/Thesis

The objective of Graduation project / thesis is to make sure that MEng students can be trained comprehensively in engineering design and development. The graduate project/thesis should embody the characteristic of MEng, which is not pure academic research or simply summary of practical work. It is how to analyze and solve real problem with major theory, major knowledge, and professional tools. So the selected topic should come from application projects or real-world problems with specific profession background and application value. Graduation project/thesis types can be in varied forms, such as application research, planning & design, product development, case analysis, etc.

3.5 Conclusion

The MEng program for full-time students is still new event in China. Its background, objective and a program template are proposed in the paper. The obstacles of the program are also analyzed.

It is very important to point out that MEng program is a very dynamic program because the content of the courses can be developed constantly taking account the characteristic and needs of enterprises. The main goal remains to form MEng graduates qualified in their career.

Acknowledgments. We have benefited from discussion with colleagues involved in MEng education and associates in industry and graduate school. Thanks own to all of them. The research is funded by Graduate Education Innovation Programs of Shandong Province (No.SDYY09008) and Shandong University (No.yc090080) .

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Construction Management Program for Bachelor's Degree Based on a Survey

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Abstract. To meet the requirements of the society, the quantity and quality of the graduates majored in construction management should reach a higher level. In order to improve the construction management program to cultivate more competent graduates, a survey was conducted to collect the views from graduates who are from the first batch of certified universities. Based on feedbacks, four potential aspects to be improved in the program are discovered; it is lack of humanistic education, lack of innovation capability development, weakness in the practical section, and weakness in the section of graduation project. Suggestions to improve the program are presented. The findings may be useful for other universities to improve their construction management programs both in China and other developing countries.

Keywords: Construction management program, Graduate survey, China.

1 Introduction

Achievements of China's construction industry have attracted worldwide attention in these days. However, China's construction industry is still at low efficient level and has caused a great deal of waste and loss (Tai et al., 2009). Low management level is one of the key reasons. It will be of important to improve the current management level and investment effectiveness and to reduce losses by developing competent project management personnel.

Because of China's huge investments, a large number of high-quality construction management personnel are urgently needed. Higher education institutions should take the responsibility to develop qualified management personnel for China's construction industry. The program of construction management was introduced in China in 1980. There were 323 higher education institutions that provided construction management program in China by April 2008.

In order to improve the teaching levels, the Assessment Committee on Undergraduate Program of Construction Management was established by the government. Some documents on the standards of the program were prepared. In 1999, construction programs of the first batch were certified by the committee. They are Harbin Institute of Technology, Chonqing University, Tongji University, Tsinghua

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University, Xi'an University of Architecture Technology, and Southeast University. 27 universities of seven batches were certified by the committee till 2009.

More than ten years has passed by since the first batch universities were certified. In order to optimize the program and to develop a more practical one, a survey was conducted to collect the views from the graduates who are from the certified universities of the first batch. The survey aims to collect information on performance of the graduates and what knowledge structure and skills they should have, comments and suggestions on the program. The results are helpful to improve the program. In addition, the findings of the survey may be useful for other universities to improve their construction management programs both in China and other developing countries.

2 Profile of the Survey

Taking into account the degree of tension in the work of employees and their working environments, most of the questions were objective, quantity of the questions is small, and open-ended questions were limited.

The questionnaire consists of two parts. The first part is about the work profile of the respondents, and the second part is about feedbacks on the program.

Considering the features of construction professional, most of the graduates work at the construction sites located different places; the survey was conducted through e-mail.

Through various sources, e-mail addresses of the graduates were collected. The method is fast, efficient and low cost. On the other hand, the replies are electronic and are easy to be kept and analyzed.

326 e-mails were sent out and 94 replies were returned. The recovery rate is 28.8%. 4 replies were not filled completely and considered to be invalid. The number of valid replies was 90, so the valid recovery rate is 27.6%.

3 Data Analysis

There are two parts in this section. One is about the work profile, and the other is feedbacks on the program from the graduates.

3.1 Work Profile of the Graduates

"What is the category of your employer?" The category distribution of the employer of the surveyed graduates is as shown in Figure 1. Construction related industry is the largest employer. Construction firms accommodates 37% of the surveyed graduates, real estate development firms 29%, while higher educational institutes, the owner and government agencies had 8%, 7% and 4% respectively. Only 9% worked at other industries, such as banking, IT and energy, etc.

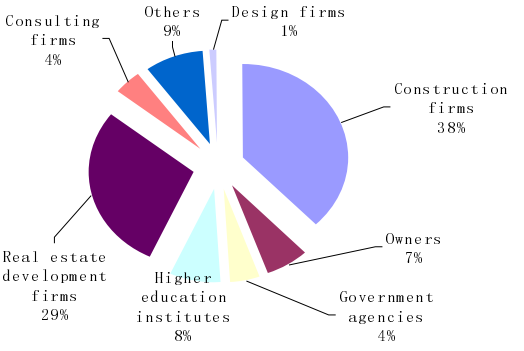

Fig. 1. The category distribution of the employer

"Does your job fit in with your vocational training in your university?" The replies of 70% of the respondents are very well and well, only 6% not fit completely, see Fig. 2. The figure indicates that the jobs of the most majority of the graduates are construction management related.

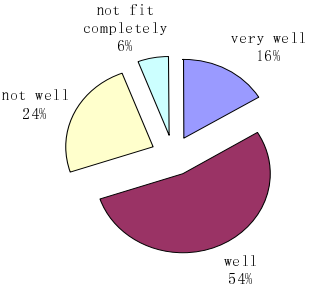

Fig. 2. Job fit in with vocational training

"What do you think of your career prospect?" The career prospects of 79% of our surveyed graduates are very good and good, see Fig. 3.

"What is the skill that you most need to improve?" This is a subjective and open question without any prompts, the graduate filled out the blank based on his or her own experience. According the survey, the most need skill is interpersonal skill that accounts for 49%, while innovation ability, practical ability and professional knowledge has 18%, 11%, and 8% respectively (see Fig. 4).

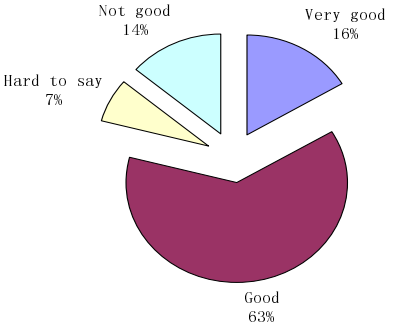

Fig. 3. Career prospect

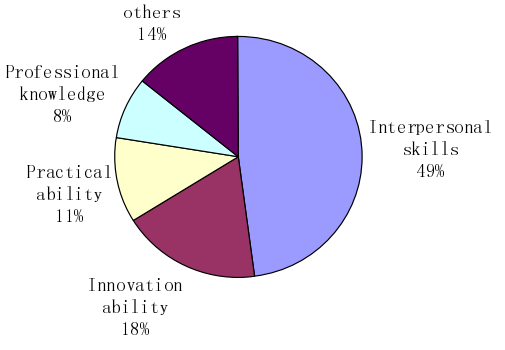

Fig. 4. The most needed skill to improve

3.2 Feedbacks on the Certified Program from the Graduates

According to the survey, 60% of the respondents think that the current program needs to be improved. Therefore, there is something to do to optimize the program. The following 4 questions are subjective and open questions without any prompts.

"Please list three most valuable courses that you have taken in your university life." The listed most valuable courses can be divided into two categories. One is technical courses, such as construction mechanics, construction technology, reinforced concrete, architecture, building material, etc. The other is managerial courses, such as project estimate, project management in construction, engineering economics, international construction project bidding, FIDIC, contract administration, and building laws and regulations, etc. These courses almost cover all the main courses in the teaching program. This indicates that the program is generally reasonable and feasible.

"Please list three courses that should be strengthened or added in your view." The listed courses that should be strengthened or added can be divided into three kinds. The first kind is the existed courses needed to be strengthen, such as CAD,

estimate software, law, and contract administration. The second is added to broaden professional knowledge, such as project consultation, engineering design, construction safety, investment, and tax affairs. The third is the humanities aspect, such as interpersonal networking, public relationship, and writing communication.

"What are the problems in the section of graduation fieldwork?" According to the replies from the graduates, this section is urgently needed to be improved. The goals are not achieved to some extent. This section receives inadequate attentions from both the universities and the supervisors. The duration of graduation fieldwork is too short. Students need more guidance. Some graduates think that this section is just going through the motions. The management and evaluation process is quite loose, too.

"What are the problems in the section of graduation project?" This section should be strengthened and the plagiarism should be eliminated completely. Focuses of this section should be training students to think, analyze and solve problems independently. Graduation project for students majoring in construction management should be more practical projects. The topics can be bidding, construction planning, quality management, and estimate planning and control, etc. Topics of graduation project should be concrete and deepness, rather than broad and generic. The topics should be updated periodically.

4 Weakness of the Current Program

From the survey, some problems in the current program are discovered.

(1) Lack of humanistic education. The six universities are technology institutes that were established and administrated according to the former Soviet model. Their strengths are technological and engineering disciplines. They pay more attentions to science and professional knowledge and the relationships among objective things while few attentions are paid to relationships among human beings. That is to say, we are good at "hard" science education, but the "soft" science education is ignored.

Although the aim of construction management is to complete a construction project in an efficient way, every task or subtask must be done by persons. Therefore, understanding construction project is not enough while understanding people become more critical (Zeng, 2007; Bernard et al, 2010).

(2) Lack of innovation capability development. Innovation capability development is another important problem discovered by the survey. Students are fed with "dead" knowledge. Since China is heading for market economy, innovation capability development must be reinforced to meet the changing requirements of the society. Students must be trained to be innovative to deal with changing world.

(3) Weakness in the practical section. Construction management is a very practice-oriented subject. Practice is very important for the students. Through practice, students can understand the concepts, theory, and knowledge learnt. By integrated use of the basic technology, methods and means of construction, students are familiar with methods and procedures to analyze and solve the engineering

problems. But construction firms are reluctant to accommodate the students to practice and provide only a few opportunities. They think that the students will bring negative effects on their production since their job plans are disrupted and they have to look after the safety of the students.

(4) Weakness in the graduation project. Graduation project is a very important section of the program. Through the graduation project, what the students learnt can be summarized and used comprehensively. The ability to analyze and solve engineering problems is trained and developed. It can be a bridge between students and professionals. The topics of graduation projects are outdated, plagiarisms can be found sometime, and capacity-building is not fulfilled well.

5 Summary and Conclusions

From the survey, certified construction management program is successful to meet the basic needs of society. Meanwhile, some critical problems urgently need to be solved were discovered. The program is lack of humanistic education, lack of innovation capability development, weakness in the practical section, and weakness in the section of graduation project.

To meet the changing needs in market economy, the philosophy of our universities has to change. In the past, students are cultivated as "tools" to build the country in planned economy. The society is changing since 1978 while the university is last bastion of the planned economy. The aim of the university should be to develop "people" other than "tools". Humanistic education and innovation capability development should become the integral part of university education.

The university should establish solid relationship with the industry. We have to improve the program based on the needs of the industry. We have to find a way to strengthen the practical section. Students and their practice can be bridge between university and the industry. As long as we pay much attention to the needs of the industry, it will be not a long time that students practice becomes win-win to both the university and the industry.

In addition, the topics of graduation projects should be from the construction industry. The faculties from the university and the engineers from the industry can co-supervise the graduation projects. The university and the industry should be hand in hand to develop competent professionals for the construction industry.

Case teaching may be a solution to develop some skills for the students. Under the guidance of teachers, students are organized to case investigation, analysis, discussion, and exchanging ideas. Through the cases, analysis and problem-solving skills are developed.

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Research of Graduates' Educational Satisfactory Evaluation in Heilongjing Province Based on LISREL Model

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Abstract. Through the research of university students satisfactory, it is easy to find the advantages and disadvantages of each service, and to serve valuable messages of college development. Postgraduate education service management is an important subject of university educational management. This paper takes Heilongjiang province for example, it is structured the LISREL model of graduates' educational satisfactory evaluation, and analyzed customer satisfaction theory apply to high education.

Keywords: Postgraduates, university, satisfactory, LISREL model.

1 Introduction

In recent years, China's postgraduate education developed with high speed, the growth rate of postgraduate students' (including professional master) year matriculation population is above 20 percent. Under the situation of postgraduate education high-speed development and mode of training diversified, how to guarantee the sustainable development of postgraduate education and quality with scientific development perspective have become social common concerned hot, also become one of the research orientation of scholars. Many scholars believe that postgraduate students are the modern postgraduate customer of postgraduate education activity, this idea has been generally recognized and accepted, therefore, the postgraduate student education has become a product the university education services to provide. Postgraduate student, are the subject of education in colleges, universities must understand postgraduate's satisfaction degree, only through the research of postgraduate student satisfaction, can understand the shortcomings and insufficiency of postgraduate education, can carry on a better education process of postgraduate education, can postgraduate education developed, can higher schools be developed.

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2 Overseas and Domestic Condition

In 1995 American scholar Levitt Noel used SSI scale which can applies postgraduate education satisfaction index model to the study of student satisfaction assessment. Devine thinks the expectation and perceived service vary with student population statistic characteristics in MBA program[1]. Paula • K Kwan believe that the main factors to enhance the quality of higher education are course contents, paying attention to the students', teaching facilities, assessment, guidance, social activities and personnel[2].Carrie Leugenia Ham think students have high expectations to timely school services, comfortable campus and the classroom environment, complete facilities , some students asked that school officials have willingness to student services[3].

Qi xingui put forward higher school education service should take the student satisfaction as a target[4]. Zhou wenHui, Gao ming think that teaching quality of service has six factors, respectively which is practical, responsiveness, employment sex, participation and empathizing and tangibility through investigating the influence of MBA teaching to student satisfaction[5].

To sum up, at present domestic and overseas scholars to the student satisfaction survey research mainly study with qualitative method. They study student satisfaction with subjective evaluation method through theoretical innovations theory push[6]. At present they still didn't use objective quantitative method to research student satisfaction. Therefore, using LISREL model to study the student satisfaction fills the blank of this field.

3 Postgraduate Student Satisfaction System Structures

3.1 Postgraduate Student Satisfaction Systems

According to the postgraduate education satisfaction index system design principle, the index system construction and basic framework are as follows:

Table 1. Postgraduate education satisfaction index systems in Heilongjiang province

One class index	Secondary indexes
perceptibility	Campus environment
	Academic atmosphere
	The school management service quality
	The school teaching service quality
feedback	The school teaching service cash commitment
	Faculty problem solves promptly to students reflect
empathizing	Teachers' teaching level and business skills
	Management personnel understanding the needs of the students
satisfaction	Students to schools provide teaching service quality satisfaction
	Students to schools provide management service quality satisfaction
	Students' comprehensive quality improvement

3.2 Postgraduate Education Satisfaction Empirical Analysis of Heilongjiang Province

This postgraduate student satisfaction survey research from November 1, 2009 to September 10, 2010, in the selection of respondents tested, test questionnaires and collect data with the school as the unit, after the student fully understand questionnaire requirements for anonymous answer and complete the questionnaires, we can get valid questionnaires after the final examination paper by artificially eliminate invalid.

The investigation and study face dozen universities which postgraduate professional in Heilongjiang province, according to the basic principle of the proportion of postgraduate students determine sample size. Survey adopt quota sampling method to ensure each city in the province of the respondents age, gender, social status and so on various aspects can accurately represent all the college postgraduate student in Heilongjiang province. Respondents selected the master and doctoral students of Harbin industrial university, Harbin engineering university, North-East agricultural university, Northeast Forestry University and Harbin Medical University, Heilongjiang university of traditional Chinese medicine, Heilongjiang University, Harbin university of science and technology, Harbin Normal University and Harbin commercial university, Daqing Petroleum Institute, Qiqihar university, Jiamusi university to wait for more than 10 universities, total 1000 questionnaires and 948 copies back ,after artificially rejecting invalid papers, the effective questionnaire are 926 copies and effective recovery of 92.6%. Specific conditions as figure 3:

Table 2. The composition of sample

	Sample distribution	Sample (people)	Proportion (%)
Degree type	master	852	92.01
	doctor	74	7.99
For professional interest in the situation	Very interested in	184	19.87
	More interested in	367	39.63
	general	304	32.83
	Not interested in	57	6.16
	Not very interested in	14	1.51

Through the model LISREL of postgraduate education satisfaction in Heilongjiang province established and analysis the proportion relationship between first-order index (hidden variables) and secondary indexes (show variable), the evaluation results are as follows:

(1) the correlation coefficient of perceptibility and satisfaction is $\gamma_{12} = 0.896$, This shows the college postgraduate student in our province, perceptibility has bigger influence on satisfaction, which is mainly manifested in the campus environment, academic atmosphere, the school teaching service quality and school management service quality. Thus we can see that if colleges want to improve the postgraduate education satisfaction in Heilongjiang province, they should give enough attention on those factors, the key point is to in this several aspect. Meanwhile, the correlation coefficient value of feedback and perceptibility is the highest $\phi_{21} = 0.687$,also means that the correlation coefficient value of feedback and perceptibility is the highest, explain that the postgraduate student can timely feedback and be susceptible to influence when his education satisfaction is lower,; Conversely, when satisfaction, they also are more easily be satisfied.

(2) Through a model of the sample statistic, score to secondary indexes of perceptibility mean; result from high exactly in accordance with arranged for: academic atmosphere3.582, and the school education service quality 3.2184, campus environment 3.175, management service quality 2.988. This shows that academic atmosphere and school education service quality is very important for college postgraduate students in our province, the largest education postgraduate students appeal to is to pursue good academic atmosphere and education service quality. Meanwhile, campus environment and management service quality of postgraduate degree of satisfaction also have certain effect, but do not take a major position. Explained that the current education service quality do not fully meet the customer needs standards.

(3) As the aspect of satisfaction, its three secondary indexes mean by large to small arrangement, respectively is: students to schools provide management service quality satisfaction 4.387, students' comprehensive quality improvement to the school 3.9264; students provide teaching service quality satisfaction 3.7418. Explained that in satisfaction, University graduate in our province are more satisfied of management service quality, for their comprehensive quality improvement and the school provides teaching service quality satisfaction level is relatively low, full explanation only as a graduate student of teaching provides high quality products and services, can make customer groups get satisfaction.

Through the above model reveals problems can see, applies the LISREL model to satisfaction assessment can solve education quality assessment of satisfaction well and propose the way to solve the direction and ideas on improving postgraduate education satisfaction.

3.3 Improve Postgraduate Student Satisfaction Countermeasures

Establish the teaching quality monitoring system. One of the effective methods to improve college postgraduate education satisfaction is to integrate resources of higher school teaching management. Through the joint efforts of internal departments, constructing scientific and reasonable teaching quality monitoring system of higher school, a guarantee higher school postgraduate education high level of satisfaction stable and effective system formed.

Perfect the scientific discipline curriculum Settings. The need of postgraduate education reflect the national quality of talents on the basis of the essential requirements, cultivate the students' comprehensive quality. According to whole optimization principle, set the professional course system, enhance the course adaptability, frontier and practicability, cross and functional. Each discipline overlapping comprehensive is the main characteristics of modern science and technology development, the overall development of the subject with integrated as the foundation, reasonable constructing a scientific curriculum system and integrating course content is one of the principle of constructing new curriculum system.

Strengthen the construction of the teaching staff. The construction of the teaching staff is the root of education teaching in higher school postgraduate students. In the construction of teachers' team ,higher school should insist on external education teaching talent introduction and internal combination of teacher training. Promote postgraduate training channels, strengthen diversification process of education teaching and accelerate the establishment of a talent employment mechanism of higher school education teaching faculty base, strengthen education teaching level of higher school teachers. Eventually reach to the goals to improve postgraduate student satisfaction.

Establish academic exchanges platform. Academic exchanges is process of scientific work process, provide and obtain the academic achievement, thought, and academic exchange aims to promoting the advancement of science and technology and the discipline development, promoting science and technology and economy, promoting the construction of effective integration into decision-making field, promoting technology and technological achievements into modem productivity, will benefit postgraduate master effective transformation of new knowledge, correcting error, widen our sight and active academic thinking, and inspire innovative thinking, but also beneficial to verify scientific achievements.

4 Conclusion

Through the postgraduate student satisfaction system, and LISREL model, the paper research the postgraduate student satisfaction. The result of the research on the postgraduate student satisfaction shows that the postgraduate students in Heilongjiang province are satisfied with education of their universities.

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China's Emergence as a Leading Country in Artificial Intelligence-From a Bibliometric View

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Abstract. The current study provides an integrated bibliometric view of China's presence in the field of artificial intelligence. China has already become a leading nation in the artificial intelligence research field in terms of the number of publications and the most influential papers. However, the mean citation impact of Chinese artificial intelligence publications still need improvement. The rather concentrated distribution of institutions and journals of Chinese publications deserves much attention. Hong Kong's institutions are apparently the biggest contributor to Chinese AI publications, and have an extremely leading position. Other Chinese institutions in the mainland China are lack of competence to some extent. A thoroughly comparative analysis is conducted among China and several other "giant" countries in the same field.

Keywords: Artificial intelligence, China, Publications, Relative citation indicators, h-index.

1 Introduction

Artificial Intelligence (AI) is a fast-growing research field attracting widespread attention from both the academic and technologic communities. China has become the fifth leading nation in terms of its share of the world's scientific publications [1]. The question arises that whether China has also become a major player in the AI research field and what the historical evolution of China's publication and citation performance in this specific field. The current study will provide an integrated bibliometric view of China's presence in AI field. Comparative analysis will be conducted among China and several other "giant" countries in the same field.

2 Data and Methods

ISI Journal Citation Report (JCR) is substantially used to evaluate the most important academic journals worldwide. JCR classifies all the academic journals into 172 subject categories. There are in total 103 journals listed in the category of

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"Computer science, Artificial intelligence" in JCR 2009. In order to include the most recent influential publications, the top 10 journals in AI filed with the highest Journal Impact Factor (2009) are taken into consideration in the current study. The publication period and citation window is set as 2001-2010. The document types are defined as "articles, reviews, letters and proceedings paper", since other document types do usually not provide sustained information for the citation analysis. Finally, we got 6046 publications as the data set in this study. All the data was collected on 10, April, 2011.

Several bibliometric indicators are used to analyze the activity and impact profiles of China in the AI research field, including total publications, share of world publications, overall citation rates, share of world citations, share of un-cited publications, *h-index* et al. Furthermore, the following relative citation indicators are used to gauge observed citation impact against the expected impact:

1. *Mean Observed Citation Rate* (MOCR) is defined as the ratio of citation count to publication count.

2. *Mean Expected Citation Rate* (MECR). The expected citation rate of a single paper is defined as the average citation rate of all papers published in the same journal in the same year.

3. *Field Expected Citation Rate* (FECR). Analogously to the previous indicator, the field-expected citation rate of a single paper is defined as the average citation rate of all papers published in the same subject in the same year.

4. *Relative Citation Rate* (RCR) is the ratio of the observed and journal-based expected citation impact.

5. *Normalized Mean Citation Rate* (NMCR) is the ratio of the observed and field-based expected citation impact, namely,

6. *H-index and h-core.* In this study, we base the measure of highly cited publications on the *h-index* proposed by Jorge Hirsch in 2005[2]. A scientist has index *h* if *h* of his or her papers have at least *h* citations each and his/her other papers have no more than *h* citations each. All publications, which have received at least *h* citations, form the *h-core* [3]. The papers in *h-core* are then considered as the most impacted publications.

3 Results

3.1 Publications of China in AI

Among the 6046 publications under study, USA is the world leadership without any doubt, followed by England, China, France and Germany as the major players in AI filed. Figure 1 presents the ten leading countries with most publications in the top AI journals during 2001-2010. There are in total 554 publications with "Peoples r China" as a country name in their addresses.

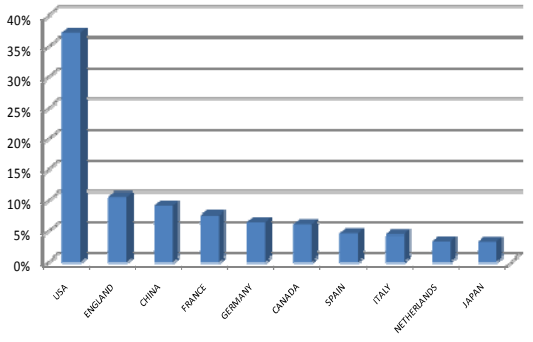

Fig. 1. Top 10 countries with the most publications in AI (2001-2010). Data source: ISI Web of Science.

To understand not only the current situation, but also the evolutional development of the country distribution in AI, Figure 2 provides the historical trends in terms of publication shares of the leading countries in AI. Japan serves here as an Asian country to be compared with China.

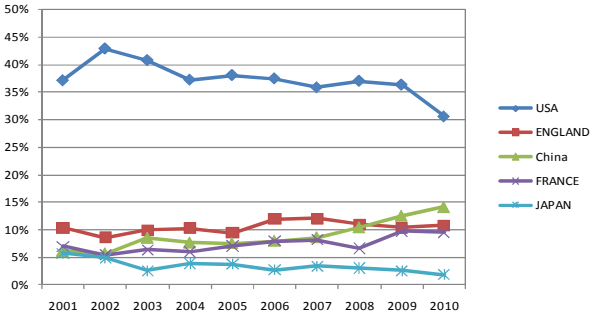

Fig. 2. Percentage of world share of AI publications.

USA is the abosulte giant in AI field, however, its publications share shows a decreasing trend recently. China's progress in terms of the publication share is quite remarkbale. In 2001 and 2002, the ranking of China was only 6th in the world. Since 2003, China rised to the top three leading countries of AI publications. Then it surpassed England in 2009, and has become the second giant in terms of AI publications share in the world. On the contrary of China, Japan's obvious deline, especially after 2007, is somewhat surprising. It's ranking in terms of the world share of publications presents an exactly linear decline: 9th (2007) to 12th (2008) to 15th (2009) to 18th (2010).

3.2 Citation Analysis of Chinese Papers in AI

The 554 Chinese publications in 2001-2010 have received 11248 citations up to the data retrieval. The world citation share of China is 7.88%, which is lower than it's world share of publications (9.16%). Among the 554 publications, there are 106 publications which have not received any citations, namely, the share of uncited Chinese publications is 19.13%. It's much higher than the same indicator in the world: 14.67%.

Table 1 presents the MOCR, MECR and RCR values of Chinese publications in the top 10 AI journals during 2001-2010, based on the definition in the method part. The RCR indicator measures whether the Chinese AI publications attract more or less citations than expected on the basis of the journal impact measures, i.e., the average citation rates of the journals in which they appeared. RCR<1 means lower-than-average, RCR>1 means higher-than-average citation rate, RCR=1if Chinese publications attract just the number of citations expected on the basis of the average citation rate of the publishing journals.

Table 1. Different relative citation indicators of Chinese publications in the top 10 AI journals (2001-2010).

Journal	MOCR	MECR	RCR
ARTIF INTELL	22.31	13.45	1.6587
IEEE T FUZZY SYST	20.85	18.41	1.1325
EVOL COMPUT	17	15.22	1.1170
COMPUT INTELL	6	6.02	0.9967
IEEE T PATTERN ANAL	30.5	34.49	0.8843
J WEB SEMANT	6.4	7.5	0.8533
IEEE T EVOLUT COMPUT	15.76	33.85	0.4656
IEEE INTELL SYST	3.62	7.99	0.4531
MED IMAGE ANAL	5.83	20.23	0.2882
INT J COMPUT VISION	5.55	30.71	0.1807

In table 1, we observe that there are three journals, namely, *Artificial Intelligence* (ARTIF INTELL), *IEEE Transactions on Fuzzy Systems* (IEEE T FUZZY SYST) and *Evolutionary Computation* (EVOL COMPUT) where the RCR of Chinese publications is over 1. It means the citation impact of Chinese publications in these three journals is higher-than-average, especially in the journal *Artificial Intelligence* with a RCR of 1.6587. The RCR in *Computational Intelligence* (COMPUT INTELL) is almost equal to 1, which means Chinese publications' citation performance is just as expected in this journal. However, all the RCR in other six journals is below 1, which demonstrates the poor observed

citation impact of Chinese publications compared to the expected indicator. The mean citation rate of Chinese publications is even lower than half of the expected value in *IEEE Transactions on Evolutionary Computation* (IEEE T EVOLUT COMPUT), *IEEE Intelligent Systems* (IEEE INTELL SYST), *Medical Image Analysis* (MED IMAGE ANAL) and *International Journal of Computer Vision* (INT J COMPUT VISION). The extremly low values of RCR are observed in the last two journals, respectively, 0.2882 and 0.1807.

3.3 Comparative Analysis of China with Other "Giant" Countries in AI Field

This part will focus on the comparison of China with other most active countries in AI field, mainly based on the *relative citation indicators* and the *h-indicators*. The relative citation indicators of the six "giant" countries in AI are listed in table 2. The *Field Expected Citation Rate* (FECR) is 23.62. The *NMCR* is then calculated based on the defination in the methodology section. The *NMCR* gauges citation rates of the papers in a country againt the standards set of the AI field publications under study, which has been introduced by Braun and Glänzel (1990) in the context of national publication strategy [4]. Its neutral value is 1 and *NMCR* > (<) 1 indicates higher (lower)- than- average citation rate than expected on the basis of the average citation rate of the subfield.

Among the six most active countries, USA has the highest *MOCR* and *NMCR*, which means USA not only occupies the biggest share of publications in AI field, but also have the most distinctive citation impact, which is much higher than the world average. China ranks in the lowest position with respect to both of the *MOCR* and *NMCR* indicators. In general, USA, Canada, England and France perform better on citation impact than the world average. However, Germany and China haven't received good reputation on this indicator.

When descending the citation counts by each paper of the total 6046 AI publications under study, there are 140 papers having received at least 140 citations each, which means, the value of h-index of the 6046 AI publications is 140. Therefore, the 140 highly cited papers comprising the "h-core" publication set are the most influential AI papers in the current study.

Table 2 demonstrated the comparable data of the six major countries. USA has contributed to more than half of the 140 highly cited publications (80 *h-core* publications are from USA). The share of its *h-core* publications (57%) is even much higher than its world publication share (37%). Different from the poor performance on basis of the previous citation indicators, China has surpassed England and become the second major contributor to the most influential publications in AI. Its share of *h-core* publications (0.11) is higher than its world publication share (0.092). On the contrary of USA and China, the other four major countries, Canada, England, France and Germany, showed somewhat un-satisfactory performance in the share of *h-core* publications. The share of *h-core* publications in each of these countries is lower than the corresponding share of the world publications.

Table 2. Relative citation indicators of the most active countries in AI field (2010-2010).

	MOCR	NMCR	H-core publi-cations	Share of H-core	Share of Publication
USA	28,67	1,21	80	0,57	0,370
Canada	27,68	1,17	5	0,04	0,061
England	25,22	1,07	13	0,09	0,110
France	24,50	1,04	8	0,06	0,076
Germany	20,55	0,87	7	0,05	0,065
China	20,30	0,86	15	0,11	0,092

3.4 Who Is the Big Contributors to Chinese Publications in AI?

When taking a deeper look into the Chinese publications, some rather concentrated distributions could be observed. Figure 3 clearly demonstrates the occupied position of some institutions in Hong Kong. Several leading Hong Kong institutions, such as *Chinese Univ Hong Kong*, *City Univ Hong Kong*, *Hong Kong Univ SCI & Technol*, *Hong Kong Polytech Univ* and *Hong Kong Baptist Univ* have published half of the 554 Chinese AI papers. *Chinese ACAD SCI*, *Tsing Hua Univ* and *Shanghai Jiao tong Univ* are the top institutions in the mainland of China.

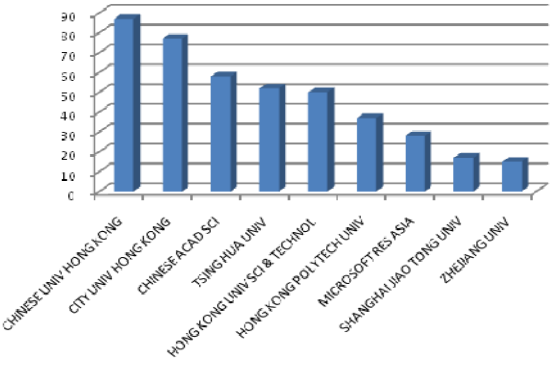

Fig 3. The most active institutions of Chinese AI publications (2001-2010).

The journal distribution of Chinese publications is concentrated as well (Figure 4). Two thirds of all the 554 publications are presented in *IEEE Transactions on Fuzzy Systems* (IEEE T Fuzzy Syst) and *IEEE Transactions on Pattern Analysis*

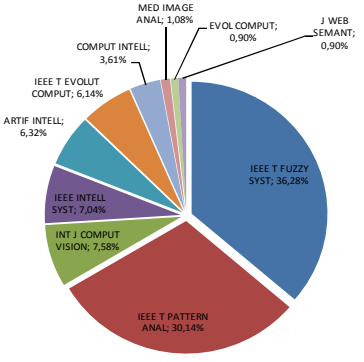

Fig. 4. The journals distribution of Chinese AI publications (2001-2010)

And Machine Intelligence (IEEE T Pattern Anal). The other eight AI journals only have published one third of Chinese papers.

4 Conclusion and Discussions

China has already become a leading nation in the AI research field. It has overtaken England since 2009, and has become the second giant in terms of AI publications in the world. On the other hand, the mean citation impact of Chinese publications is not quite convincing, on basis of several relative citation indicators. However, it has provided the second large number of the most influential AI publications, and again, has overpassed England.

The rapid growth of Chinese AI publications and increasing impact are partly effected by China's incredible economic growth, for instance, more funding has be made available for the academic research. Actually, more than 20% of Chinese AI publications have been funded by NSFC, and many of other researches received funding from other funding agencies and projects in China.

The rather concentrated distribution of institution and journals of Chinese publications deserves much attention. Hong Kong's institutions are apparently the biggest contributor to Chinese AI publications, and have an extremely leading position. Other Chinese institutions in the mainland China are lack of competence to some extent.

Finally, we mention that since artificial intelligence is a highly interdisciplinary field, it is difficult to identify which papers belong to this field. There is not an ideal retrieval solution to get the complete publication set of AI field. The focus on the most impacted journals classified in the "Computer science, Artificial intelligence" in JCR provides a representative insight into the AI academic research. However, an extended data set for gaining a more conclusive result is strongly recommended for the future study.

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Construction of the Innovation Mechanism in Independent College Based on the Merged Knowledge

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Abstract. In order to solve the teaching problems of the independent college in the present education, construct the taking-students-into-the-first-consideration teaching method and improve the innovation of the engineering students, a new innovation mechanism is put forward in this paper, which is based on the integration of different course and different academic degree. The innovation mechanism of the independent college pays more attentions on three aspects: 1) the teaching ideas are changed from taking the teachers to the students as the main body of the education; 2) the educational quality are changed from taking scores to students' abilities as the center; 3) student teams are constructed and strengthened in innovation programme. The new mechanism can attract more teachers and students of different majors to join in the innovation programme and guarantee its continuity and practicability. The new mechanism can also realize the truly tutorial-system education method.

Keywords: Integration of different course, innovation mechanism, ability of innovation, independent college.

1 Introduction

With the market competition increasing, the design and manufacturing of the mechanical product are facing the unprecedented challenge, which become more and more serious [1-2]. Mechanical products with simplex function did not appeal to the market. And the mechanical products with the integrated application of various physical effects are playing a dominant role in the current and future market. Facing the intensive competition of the market, the requirements of the person with ability become increasingly fierce and the competencies of student are more and more higher. In order to meet the requirement of society for the high-quality composite personnel, the students' team spirit, cooperative and innovation ability are all the important factors which could be taught in college [3-4].

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2 Existing Problems

After many years of the professional knowledge learning, the undergraduate and/or the graduate students have already mastered methods for traditional design. However, facing the complex, multidisciplinary design work, students are confused in the start of the task [1]. The first and most important reason is the major limitations of students. The students from different majors have different knowledge. They can work by the help of experience and the guidance of experts to solve the problem within the limit of their knowledge. But they can't correctly and quickly finish the task which is beyond their professional knowledge. Secondly, students' training of different academic levels is artificially divided into different parts. In many colleges and universities, personnel training are divided into undergraduate stage and graduate stage separately. This way of separated personnel training has its favorable effect, but it also makes the staff allocation unreasonable and the knowledge of students discontinuous. The inadequacies of the separated personnel training are obvious in the research of the big projects, which are the commonplaces and needs many people's cooperation in modern society.

3 Deep Analysis of the Problem

3.1 Self-centered Study Model of the Students

The self-centered study model prevents the students from the application and development of the creative capacities. At the same time, team spirit is lack in both the family and the school education. Instead, the create-your-own-deity idea is very popular in our society today. Compared with team work, the students prefer "one man operation" to show their value and abilities. The "one man operation" research model may simulate the student's creative capacity to a certain degree. But it can also limit their creative capacity to reach its maximum point. Today, most of the engineering designs are system works, which can't be finished well by one person alone and needs team cooperation. Working in a team, the creative capacity of the individual will improved quickly [5], which is better than the "one man operation" model.

3.2 Inadequacy of Creative Education

The students are losing or have lost their self-study, active learning and team cooperation capacities under the traditional education system which was led by teachers and the students learned by the means of spoon-feeding or filling. All of these education methods will make the students become disoriented and lose the creative consciousness. They will become the slaves of "experience" and "tradition", which will wall themselves from generating creative inspiration and putting them into practice. As a result, these students couldn't or dare not to do creative

design. The educational methods will confine the development of students' creative ideas and couldn't cultivate qualified engineers. The students without creative inspiration can't pay attention to the problems around them, not mention solving them. What's worse, with their "knowledge" increasing, their design limitation will also enlarge, and their creative capacities will shrink, even lose them. The absence of the innovation ability will make the students unable to use their knowledge flexibly, learn from practice, solve practical problem or design good products. The students will never have a feeling of achievement by innovation. Over time, students will be disgusted with learning and lose their interests in college, which will lead to a danger situation.

4 Construction of the Innovation Mechanism Based on the Merged Knowledge

In order to cultivate high-quality, comprehensive talents who can meet the needs of modern society, an important way is to stimulate the creativity of students, develop their team work abilities and integrate different intelligence with different majors and backgrounds. To achieve these objectives, the ability to find problems is the first quality that must be learned by college students. With the purpose to find out answers, students' learning will have objectives, stronger impetus and vigor. At the same time, learning will become a happy thing for the students. The second ability that college students should learn is team work, which includes the collaboration with manpower, material resources and intelligence of every team member. In a team, the students learn self-consciously and intentionally in order to solve the problems. In addition to learn the compulsory courses, the students will learn all kinds of knowledge which is useful to solve problems. The self-regulated learning ability is very important to improve college students' comprehensive qualities. Individual ability is too limited to do a big design work. In the self-regulated learning, the students may ask for help from the seniors, the postgraduates or the teachers. If the problem couldn't be solved yet, the student may request help beyond their majors, schools or colleges. If it can be guided and promoted correctly, the sprit of asking for help may become a team work ability and integration of intelligence with the "subject" as its centerpiece. The third ability is to find solution of problem. Based on their problems, students have already done the comprehensive work of study, training and cooperation. Then, the solution of the problem is a very natural thing. What's more important, college students must learn to find new problems in the process of solving old problems, which will be the basements of the follow-up study. At the same time, team work and intelligence integration must be consolidated and reinforced, which will guarantee the innovation improvement of both the team and the members. In order to develop college students' ability of innovation, team work and intelligence integration, colleges and universities should pay more attention to the following three aspects.

The teaching ideas which take the teachers as the main body must be replaced. The students must be taken as the center in the new educational methods. The students' abilities, which include self-regulated learning and the solution hunting of the problems, should be constructed and stimulated. The main role of the teacher is a guider. To teach fishing is better than to give fish.

The idea of educational quality takes scores as the center must be changed. The teachers should responsible for not only their courses, but also to stimulate students' inspiration and capability of innovation. In classes, teachers ought to guide students to find the problem in production practice based on their own knowledge. Then, the students are guided to solve the problem by their self-regulated learning or practices.

The construction of student team must be strengthened. The supervisors, which include the graduate tutors and the undergraduate advisors, must attract more students from different grades and different majors to join the research groups. The students in the group will learn and work on the same subject. The group is a team which is made up of undergraduates, graduates and several teachers. In the group, students are the protagonists while teachers play their role in guide and guard. Students who are the main body of innovation and the team manager should do all the works by themselves. Students in the group are divided by their knowledge characteristics and abilities. They work together to design the products to test their ideas, improve the products based on experiments and produce products with ideal functions finally. The students' creative and practical abilities will increase quickly in the team work.

5 Conclusion

The establishment of the innovation mechanism will absorb more and more student with different majors and backgrounds. And the team work will improve the students' innovation abilities and comprehensive qualities. All of this will have positive effects on the work of talent cultivating and the "big professional" training in the future.

Acknowledgement. This work was financially supported by the Education Reform Project of Shandong Province (2009621), the Education Reform Project of Quancheng College of University of Jinan (QYJY200901), the Graduate Education Innovation Program of Shandong Province (SDYY09027) and the Graduate Education Innovation Program of University of Jinan (JDYY08009).

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Management Motivation, Borrowing Cost Capitalization and Long-Term Construction Projects

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Abstract. This study examines empirically the associations among discretionary application of accounting policy, management compensation and the qualifying asset investment decisions of the firm. Compared to firms of similar size in the same industry, top managers in firms investing in qualifying assets and capitalizing borrowing cost receive significantly higher compensation, and further undertake more long-term construction projects. This amounts to excess compensation above the expected industry-year average compensation level. Capitalization of borrowing cost removes the disincentive of reduced earnings due to higher interest on borrowing and related expenses, and excess compensation rewards managers for their additional efforts involved in long-term construction projects. The results of our matched-pair treatment-control analysis and comparison of actual with expected compensation suggest that capitalizing borrowing cost exerts a favorable effect on the motivation of managers in undertaking long-term construction projects and higher compensation add on to the motivational effect.

Keywords: Capitalizing borrowing cost, management compensation, motivation, long-term construction project.

1 Introduction

The conflicts of interests between the main stakeholder groups, the principals (owners) and the agents (managers), might lead firms to invest above or below their optimal levels. Thakor points out that when the decision-makers (managers) act in their own personal best interests inefficiencies may occur, including underinvestment and overinvestment [1]. A substantial literature illustrates that managerial compensation contracts are needed to motivate effort-and-risk-averse managers. However, accounting-based bonus plans have been found to have potential shortcomings when both the capital investment-related decisions and the choice of reporting methods are delegated to managers. For instance, Kaplan and Atkinson point out, "Executives could decline investments that increase the long-run value of the firm but penalize short-term earnings [2]." It is plausible for the

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board of directors to mitigate some dysfunctional aspects of accounting earnings-based plans by adopting implicit performance evaluation. Larcker, among others, recognizes the potential for implicit performance evaluation and examines total aggregate direct compensation (salary plus bonus) to capture one manifestation of managerial incentives [3].

According to ASBEs (Accounting Standards for Business Enterprises, 2006), borrowing cost capitalization begins when all the three criteria are met, namely, the reporting entity incurs expenditures for the qualifying asset, incurs borrowing costs and undertakes activities that are necessary to prepare the asset for its intended use or sale. Top management of firms deciding whether to undertake long-term construction project, they have discretion over both whether to capitalize borrowing cost and the amount and timing of borrowing cost capitalization. In this sense, whether borrowing cost is capitalized or expensed is the result of managerial discretion.

In this study, we limit our analysis to the incentive for managers to take up long-term construction projects and address the problem of underinvestment. This is a preliminary study aimed at examining empirically the motivational effect of accounting policy on qualifying asset investment through an examination of management compensation. We identified 95 firms listed in Mainland China between 2006 and 2009 and formed our borrowing cost capitalization sample. Our findings support our hypotheses, indicating that managers of firms capitalizing borrowing cost receive higher compensation and appear to undertake more long-term construction projects.

The remainder of this paper is organized as follows. The next section describes the research design; the third section outlines the sample selection, highlights key characteristics of the sample and discusses the empirical procedures and results; the last section is devoted to a discussion of the findings and the limitations of this study.

2 Research Design

If a firm expenses all borrowing costs, implementing any investment plan with debt financing results in higher interest expense because of the additional borrowing. If managers' compensation is entirely a function of reported earnings, applying the accounting policy of capitalizing borrowing cost, *ceteris paribus*, would facilitate the investment project because it removes the disincentive of reduced earnings due to expensing the borrowing cost. Further, as evidenced from the identification and implementation of long-term construction projects, managers expend additional efforts above that required for maintaining current operations. It would be rational for the Board of Directors to provide incentives to managers to undertake these actions through extra remuneration even during the construction phase. Lambert argues that owners should remunerate the manager in the short term for his or her additional long-term effort [4]. Evans and Sridhar suggest that allowing the manager to over-report in a period when he or she is also making an

effort that will benefit the firm in future periods provides incentives to the manager to work harder [5]. Capitalizing borrowing cost and offering higher compensation might be elements of an effective strategy to motivate managers. Whether the Board of Directors adopts such an implicit evaluation of managerial performance is an empirical question.

Hypothesis 1: The top managers of the firms capitalizing borrowing cost receive additional compensation than those in firms that expense borrowing cost.

Hypothesis 2: Firms capitalizing borrowing cost have a higher intensity of capital expenditures and incur more long-term debt.

3 Sample, Data and Empirical Results

We obtained financial statements, amount of capitalized borrowing cost and compensation of top managers from the Resset Database and identified 95 firms capitalizing borrowing cost between 2006 and 2009. For each of the 95 firms in our sample, we found a matching firm with the same 2-digit SIC codes and matching as closely as possible in terms of size, on the basis of current year's sales. The average amounts for a selected set of attributes for both the treatment firms and the control firms are reported in table 1.

The results of the matched-pair analysis support hypotheses 1 and 2, revealing that an additional compensation of RMB 181,892 on average for the treatment firms ($t=4.065$, $p<0.0005$), a higher capital expenditure of RMB664 million on average for the treatment group ($t=3.034$, $p=0.003$), a higher capital expenditure intensity ($t=2.752$, $p=0.007$), and a higher amount of long-term debt. Results are consistent using the Wilcoxon matched-pairs signed-ranks test.

Firms capitalizing borrowing cost pay significantly higher compensation to top managers ($U=2552$, $N_1=95$, $N_2=95$, $p<0.0005$ two-tailed), undertake more capital investment projects, employing the proxy of capital expenditure per RMB of Sales ($U=3669$, $N_1=95$, $N_2=95$, $p=0.026$ two-tailed), incur more long-term debt with a significantly higher long-term debt ratio.

To examine whether top managers earn differential compensation for expending additional efforts in undertaking more long-term construction projects, we compared the actual compensation in firms capitalizing borrowing cost to an expected level of compensation for firms in the same industry. Following the approach of Lambert and Larcker, we used the simple model of compensation developed by the American Management Association to estimate the aggregate direct compensation (ADR) [3].

$$\text{Log}_{10}(\text{compensation})=a+\beta\log_{10}(\text{sales})+\varepsilon. \quad (1)$$

The estimated coefficients for each industry-year group and the sales of the treatment firm for a year were used to compute an expected level of compensation for a firm of the given industry. The excess compensation, computed by comparing

Table 1. The descriptive statistics of variables for the treatment firms and the control firms

No. of Observations = 95	Treatment Group		Control Group	
	Mean	Std.	Mean	Std.
Comp.(RMB)	48690.60	42850.39	305011.73	287339.28
Sales(million)	27120	33390	13150	13270
Cap. Exp.(Million)	9619	11800	2982	4597
Cap. Exp./Sales	0.1882	0.22897	0.1153	0.14831
Debt(Million)	4606	10330	1373	2348
Net Inc.(Million)	854	1701	1412	4489
Interest(Million)	247	317	830	985

Paired Differences	Mean	t Value	Df.	p Value
Comp.(RMB)	-181892	-3.554	94	0.001
Sales(million)	-14000	-4.145	94	0.000
Cap. Exp. (Million)	-6640	-4.951	94	0.000
Cap. Exp./sales	-0.0728	-2.591	94	0.011
Debt(Million)	-3230	-2.999	94	0.003
Net Inc.(Million)	-558	-1.119	94	0.266
Interest(Million)	-583	-6.432	94	0.000

the actual ADR to an expectation of ADR as an industry-specific log-linear function of sales, is a proxy for the performance-contingent compensation resulting from both explicit and implicit evaluation of top managerial performance.

Assuming stable effects of the omitted variables on top managers' compensation, the empirical results lend support to hypothesis 1. Top managers of the treatment firms earn significantly higher compensation on average than the expected level for firms of similar size in the same industry, with actual ADR mean of 5.5778 against expected ADR mean of 5.4234. The higher compensation seems to reflect a favorable performance evaluation of the top managers during a period when the firm is implementing an overall strategy including long-term construction projects. The Wilcoxon test reinforces this finding ($p<0.00025$).

4 Conclusions

This paper examines empirically the associations among discretionary application of accounting policy, management compensation and the capital expenditure decisions of the firm. Concurrent with the project, the firms capitalizing borrowing cost have, on average, significantly higher capital expenditure relative to sales compared to a set of pair-matched firms expensing borrowing cost. Managers receive additional compensation when they expend long-term effort with expected benefits to the firm in the future.

However, it might be myopic to conclude that the increased compensation is solely due to managerial decision to undertaking long-term construction projects and capitalizing the borrowing cost involved in the capital expenditure. Further limitations of the analysis include potential measurement error in the variables examined, problems underlying the matching procedure, and the limitations of the expectation model used in computing excess compensation. Despite the limitations, the results are consistent with an inference that the Board of Directors views long-term construction projects and related growth-oriented efforts favorably, as reflected in their implicit performance evaluation of managers by allowing borrowing cost capitalization and offering higher compensation.

Acknowledgement. The study is financially supported by China National Social Science Fund Project No.07CJL022.

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The Application of EDA in the Engineering Practice of Quality Training

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Abstract. In recent years, EDA (electronic design automation) technology has developed rapidly, which has penetrated into all areas of electronic system design and has brought a revolutionary change to improve the quality of electronic system design .This article is based on the development of the practical ability of students, and it analyzes the EDA teaching and engineering practice ability of students respectively and the relationship between them. The importance of the development of students of the circuit analysis, design and application development capabilities is emphasized. By introducing the specific implementation of the EDA teaching content on the electronic information class of students in my school, which is in the Process of the EDA practical training in engineering, to further clarify the EDA practice teaching for students of engineering practice quality and innovative ability of the feasibility and importance.

Keywords: EDA, Practice teaching, Engineering quality.

1 Introduction

Higher education needs for the community, to cultivate a community with a solid basic knowledge and basic skills, practical ability with a strong cross-type, compound talents, is the urgent task facing all colleges and universities. How to become more "real" society, which trains professional characteristics of our university graduates, university courses have become the driving force of development and reform.

With the integrated circuit technology and computer-aided design technology, the rapid development of electronic design automation technology has become the development trend of electronic technology, modern electrical and electronic engineering technicians must master the technology. Competition from the electronic market, we can see that a modern electronic business, in product research, development and design, EDA tools and must have the technical means, and only reduce cost, shorten the development cycle in order to enhance the product market competitiveness. Therefore, as for the community college to train and provide a base for high-quality personnel, we must master the development trends of new

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technologies and social demand for talent. With our school's students to develop goals and plans, we have students in electrical and electronic specialty training process to strengthen the teaching content of the EDA to establish awareness of the engineering practice of students so that students master the use of EDA tools for the computer to complete the functional design of electronic systems, logic design, quantitative simulation, PCB layout design, and ASIC design and lay a good foundation. Implemented in teaching and comprehensive training curriculum, the strengthening of practical training of engineering students to improve their analysis of issues, problem-solving skills, enhance their sense of engineering practice.

2 EDA Teaching and Students' Engineering Practice

With the rapid development of higher education, the growing enrollment, the traditional practice of electronic professional teaching conditions and means to have restricted the scale of professional development and recruitment bottleneck. How students to experiment and practice are limited in the environment, develop the abilities of students, innovation, sense of engineering practice, is that we are actively exploring the issue.

Engineering practice is based on the cultivation characteristics of engineering students, in particular the practice environment for students in electronics, information and systems, integrated engineering and technical training. Firstly, through practical training, not only practical ability of engineering students so that students from “have known only” to “still capable of something”, thereby promoting the efficient conversion of knowledge to the ability to effectively change the students “high points and low capacity” phenomenon; more importantly, can also develop students ability to innovate, inspire creativity in our students desire. Secondly, through the students themselves, with their direct contact with the perceptual knowledge to strengthen its image thinking, abstract thinking and thinking in images to achieve the common development; Thirdly, through “creative production”, that is, by the students themselves creative design electronic circuits, electronic products and small self-produced, training students to use knowledge to solve practical problems and innovation. Experiment not only the use of equipment, more important is the content and means of experiments. Construction and implementation of the experimental teaching to follow the law of human cognition, take full account of individual differences of students and students from low grade to high school in different stages of growth, experimental teaching basic skills training in accordance with - System Design Ability - to work independently Ability to consider gradual process, that low-grade student, is in the basic theory of stages of learning, the curriculum is not enough to build much of the integrated design of experiments and experiments, mainly through the course of this phase of the basic experiment, course selection experiment to develop their basic skills, at this stage to open some validation experiments is very necessary; Once the students have the basic skills necessary to fully focus on its design ability, which through curriculum design, electronic system design experiments to achieve; the ability to work independently, mainly through self-development issues, participation in teacher research and other sectors to achieve.

Content in the experimental arrangement and the choice of experimental methods, to try to change the verification experiment too much, the contents of the old part of the experiment, means backwardness is to increase the synthesis, design, innovative experiments, the use of modern EDA technology, and efforts Courses in the experiment by breaking the traditional way, based on professional characteristics and direction of the experimental teaching as much as possible by credit independent course. For example, were divided into required, limit choice and optional categories, give full play to the students learning initiative, enthusiasm and creativity; a partially open teaching laboratories, these laboratories, in addition to commitments outside the curricular and experimental teaching, should with the credit system to provide students with extracurricular experimental sites and conditions; experimental teaching to students in their own hands should be taken, self, set up laboratory-based, teacher guidance, supplemented by the heuristic method of teaching model, abolished by the teaching staff acting on their behalf, the students observation-style teaching methods, and modern teaching methods and means, such as multimedia, computer interactive teaching into experimental teaching. Electronic professional, in the past that rely on manual design, welding, installation, debugging using the oscilloscope-based practice hands-on course, no longer meet the requirements of e-professional, even if the use of advanced logic state analyzer, it is difficult to complete, complex electronic the system must use advanced equipment design, simulation, download, and then tested under real conditions, so the lab's construction and use of EDA is of great significance. In the EDA lab, equipped with PSPICE, MULTISIM (EWB upgraded version), PROTEL, DSP, MAXPLUSII and other tools, learning to use the software to enable students to master the circuit from schematic to simulation, to a complete PCB board design process, using self-made the ISP and FPGA experimental board to complete the schematic from the VHDL language, or input to the logic simulation, programming download, test the integrity of the design process, especially MULTISIM software, has a rich variety of electronic components and equipment, use it or design of a comprehensive experiment can not only reduce the supplies, cost savings, but also help students overcome the fear of failure, fear of not hands-on, students have the flexibility to select the experimental time, thus creating a good working environment and the human environment, and greatly reduce the experimental teachers labor intensity, if the student apartments and other places of computer use, would be more effective.

Therefore, EDA technology and training aspects of teaching in the introduction of Electricity can effectively improve the training of the “input” and “output” of the proportion of students in large gains. Modern Engineering Training is to provide students with an engineering background, students studying for engineering training at the same time will gradually sense of awareness and the establishment of quality, safety awareness, group awareness, economic awareness, market awareness, environmental awareness, social awareness, sense of innovation, etc. complete the engineering tasks and recognizing the importance of China-Africa technical factors.

3 The Construction of EDA Practice Teaching Platform in Our School

EDA relies on laboratory construction and teaching practice, teaching standard, in a way so as to measure the level of school education for electric and electronic curriculum is an important sign. EDA programs and our school building is the College Laboratory, "Higher Engineering Education Innovation Talents" matching project, is to develop our school programs for electric and electronic class creative talents to build an important platform for the engineering practice.

3.1 Hardware Environment

Full use of the experimental conditions for the EDA lab is equipped with 80 student computer, a dedicated server, teachers use the machine, the console with the machine, two printers, a scanner, basically meet the teaching one-on two natural classes needs; additional input in the school, based on augmented with a 20 PC, to meet the teachers in teaching and research in the EDA needs.

To make full use of campus network resources, 100 EDA with the machine via a server management constitute a laboratory 100M LAN, network operating systems use Windows SERVER 2003, and through the campus network and internet connection. Laboratory teachers can practice teaching through the network to complete part of EDA.

3.2 Software Investment

According to the actual situation in our schools, the different levels of EDA teaching Software are used. Now equipped with Electronics workbench, PROTEL, PSPICE, MULTISIM, Max + plus Ⅱ, MATLAB, PROTUES and other software, also continue to supplement and improve.

3.3 Teaching Material Construction

According to the School of the 21st century, building materials requirements planning, electronic and electrical training program students, we organized a group of experienced teachers has completed the "Computer simulation of electrical and communication circuits - EWB Virtual Laboratory", "electronic design automation technology - simulation, design and production "and other teaching materials and open publication includes an overview of EDA technology, simulation software Multisim7.0 and its applications, printed circuit board design software Protel DXP and its applications, programmable logic device design, electronic circuit design and fabrication of topics and other aspects. Building materials through the planning and further promote the technology in our hospital EDA to carry out electrical and electronic teaching.

3.4 Multimedia Network-Based Practice Teaching

According to the new forms of personnel training objectives, based on our hospital campus network construction and planning, we are establishing a new EDA teaching. The Virtual Laboratory for Electrical and Electronic EDA as a platform for the establishment of independent learning center, open Internet-based laboratory teaching, curriculum design applied to the students, graduation practice and design teaching and going. EDA is the use of online multimedia virtual laboratory technology, simulation technology, database technology and network technology to build an "online virtual electronic laboratory." So that students can use it to do the basic circuits, analog circuits, digital circuits of various experiments, but can also design their own experiments and production of new content. Students can access the campus network to access data on a server call to the EDA tools lab to complete the corresponding tests, lab assignments submitted to EDA. Platform through the network of laboratories, the initial solution design and practice of student teachers, amateur and student learning guide focused on the conflict between the maintenance of laboratory equipment, components, loss of conflict with the limited funds, the rapid development of electronic technology and course content the contradiction between the relatively backward and so on.

4 EDA Teaching Training in the Implementation of the Project

The engineering Practice training for students will combine theory and practice, and is the important teaching course for the purpose to complete practice and results of training. Undergraduate Electronic Design Ability require multiple links, gradual process, for which on the one hand and the increasing practice session to ensure that time, the application of this new type of undergraduate institution is more important; second is to strengthen aspects of engineering practice, and establish EDA design in engineering education in the position to design ideas for the center to continue to strengthen, integrate theory and practice teaching together. Teaching this course, we increased the content of EDA design experiments to establish the design of the experiment course series; further strengthened the practice of aspects of course design, construction, curriculum design series, such as electronic course design, curriculum design, innovative design. We must have the plan, unified to arrange curriculum design, completion of certain design requirements, to improve the design ability of students.

Experiments in the design and content of the specific arrangements, we use the EDA experimental platform, opened the practice of electronic engineering training. For example, the microcontroller specifically developed to control the temperature of small systems as engineering training content. In training, we let the students first design of electronic circuit diagram, schematic by Multisim software analysis of various parameters to achieve the design purpose, a network of the table; then through the network table, the use of Protel PCB board design software, through plate PCB version of the production machine to complete processing, the completion and commissioning of the welding circuit board; Finally, Proteus SCM

system simulation, complete the design process of debugging and system simulation. Through such a series of design, simulation, fabrication and testing, students not only mastered the system design, production, testing, information gathering to understand the test, calibration, control and communication of the whole process, to improve students in electronic engineering design and operational aspects of comprehensive ability, the initial training in the completion of the project should have the basic qualities and requirements, but also train the students in the R & D capabilities and team spirit, scientific, and practical methods of work; also increased the student hands-on fun, but also reduces the investment in the equipment installation engineering practice. We also have on the 2005, 2006 and 2007 the students of Electronic Information of Electrical and Electronic Engineering Practice, refrigerator complete protection, and hearing aids superheterodyne radio circuit design, plate making, simulation, installation and commissioning, we have achieved good The practical effects. We also active in other to promote the power of professional training, and set out to develop a new integrated training content, reporting to the Institute a "multi-temperature control in practical training box" research projects, an academic research and laboratory construction Special Fund funding, can further enrich the training of students in engineering practice the teaching content EDA.

After several years of practice and accumulation, we have used in teaching students in the EDA engineering quality and innovation have made the cultivation of good results. In the electronic design competition and the "Challenge Cup" named after the scientific and technological activities, in undergraduate students to promote the SRT (Student Research Training), innovation activities and create a training base for students to work, EDA technology for college students own creative activities provided a powerful practice. 2009, our school team also participated in the National Electronic Design Contest, we passed EDA teaching methods, less investment in equipment cases, training of participating students were targeted, and achieved good results. And in Electronic design competition won first prize in the National Division (college) and the Hebei Division.

5 Conclusion

EDA technology into the classroom and practice teaching, and engineering training in the full application, not only saves the teaching equipment investment, reducing management costs; but also help students better understand the content of classroom teaching and deepen the concept of understanding and enrich the content of practice teaching, and gradually develop students awareness of engineering and innovation can be established; the other hand, has further enhanced the level of the contents of laboratory experiments, can open a lot of comprehensive and designing experiments, and may be part of scientific research electric and electronic content for students to complete training in the design, simulation, fabrication and commissioning, and gradually develop students research skills.

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Course Construction of Automatic Control Theory under the Framework of Excellent Talent Program

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Abstract. The course Automatic Control Theory is a fundamental subject for machinery design, manufacturing and automation students of bachelor degree programs in College of Mechanical Engineering, Tongji University. The course construction under the framework of Tongji's "Excellent Talent Program" has been proposed revolving around teaching content adjustment, teaching methods improving, bilingual teaching developing, and staff construction. This paper discusses the course content adjustment focused on typical theories and widely used engineering techniques. Teaching methods improving faces to the problem of quite diversified student population in university today and present some active methods such as problem-based teaching to improve the students' ability of independent analysis and solving problems. About 5 years bilingual teaching experience of this course shows that suitable textbook, student-based teaching method and small scale class will benefit the teaching effect. The course Automatic Control Theory is developing to satisfy the demands of advanced engineering education.

Keywords: Automatic Control Theory, Course, Course Construction, Excellent Talent Program.

1 Introduction

College of mechanical engineering of Tongji University was established in 1985. The course Automatic Control Theory has been a fundament subject for all degree-seeking undergraduate students in mechanical engineering since then. In early ages, this course emphasized on the fundamental theories of feedback control, and there are only 2 to 4 experiment periods of the total 54 periods. Form 2004, the course was divided into two parts. One is still the theory lecture part, taking in 36 periods. The other is the respectively independent experiment part, 18 periods. This innovation increases the experiment periods and strengthens the students' sensible understanding and hand-on ability. With the developing of Excellent Talent Program, since the teaching methods are tend to transfer lecture form based on teachers to case analysis form based on students[1], we are planning to more demo

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experiments in class to promote students' interests in study. In the bilingual teaching class, more than 5 years experience discovers that about 30 students is a high efficient and effective scale for teaching based on students.

2 Course Construction

Automatic Control Theory is one of the core curriculums for undergraduate students majored in machinery design, manufacturing and automation. This course is characterized of its theoretical and becomes the bridge between fundamental knowledge and engineering problems solving. So it plays a very important role on students' abstract thinking and logical thinking abilities training. On the other hand, this course also is practical due to it including lots of engineering concepts and techniques, and benefits students in engineering ability developing.

This course demands students to master the fundament theories of automatic control, learn to analysis and design engineering systems. Upon completing this course, students must understand the concepts and theories of linear feedback control systems, and grasp the basic analysis and design methods of automatic control systems such as systems modeling and simulation, time-domain and frequency domain methods.

Now, Automatic Control Theory is developing to meet the requirement of basic, modern and prospective along with the course construction in university innovation. Build up students' creativity is the vital goal of this course. The course construction program is carrying out according to teaching content adjustment, teaching methods improving and bilingual teaching developing.

3 Teaching Content Adjustment

Generally, Automatic Control Theory include 3 parts in almost all university courses, they are: linear control systems, non-linear control systems, and sampling control systems. However, the former two parts are the usual contents, since we have a successor course Computer Control Techniques covered the content of sampling control systems. Furthermore, we focus on theories of linear control systems as they are the typical theories and also because of the limited teaching periods. In addition, some contents lack using in engineering are weakened such as simplification of complicated multi-loops block diagram and Mason Formula, and some contents used widely now are enhanced such as PID controller, MATLAB SIMULUATION toolbox and the application.

Usually, students are easier to understand time-domain analysis method than frequency-domain analysis method[2]. Time-domain analysis method is a direct analysis method, although the differential equations are very hard to solve, the algebra equations are very easy to deal with after the Laplace Transforms. Another advantage is the differential equations express the system physical process directly and clearly. Frequency domain analysis method uses steady-state information to reflect system dynamic process. This is the sublimation of research method.

Moreover, observing the steady-state information is easier than the transient domain response in lab. Hence frequency-domain method is more propitious to solve engineering practical problems.

Some contents ask students taking into practice to enhance their understanding after concepts study, for example, controller design. We provide a MATLAB SIMULATION platform for students to practice their designing work after class. This system helps students analysis controller or control system considerably and impulse their interests in study.

In dealing with control systems, particularly engineering control systems, we will deal with a variety of components, indicating that the subject is an interdisciplinary one. A control engineer needs a working knowledge of mechanics, electronics, electrical machines, fluid mechanics, thermodynamics, structures, material properties, and so on. It's the same with the course learning. The numerous problems and examples representing all fields are included in our course, and lots of examples of sociological, biological, ecological, and economic control systems are as selection study materials beyond the class intended to provide students with an awareness of the general applicability of control theory to many facets of life. We believe that exposing students of one discipline to examples and problems from other disciplines will provide them with the ability to see beyond their own field of study. Many students pursue careers in engineering fields other than their own. We hope this multidiscipline introduction to control engineering will give students a broader understanding of control system design and analysis.

4 Teaching Methods Improving

In the days when university classes contained highly selected student, at university by choice, the traditional lecture followed by tutorial seemed to work well enough. Today, when the student population is quite diversified, many students seem not to be coping, while teachers feel they are being unfairly put upon. Some believe that these students should not be at university at all.

Some students are academically committed, they learn in an "academic" way[3]. They come to the lecture with relevant background knowledge and questions they want answered. In the lecture, they find answers to the questions. It forms the keystone for a particular arch of knowledge they are constructing. Students like these virtually teach themselves, they need little help from teachers. But quite a few students are at university not out of a driving curiosity about a particular subject, or a burning ambition to excel in a particular profession, but to obtain a qualification for a job. They have less developed background of relevant knowledge. They come to the lecture with no questions to ask. They want only to put in sufficient effort to pass. Problem-based learning is an active method we have tried in class. It requires all students to question, to speculate, to generate solutions, to use more high order cognitive activities in study.

Automatic Control Theory course require students having good background knowledge of mathematics, physics and engineering. Since the subject has a strong mathematical foundation, we might approach it from a strictly theoretical point of view, emphasizing theorems and proofs, pay more attention on mathematical

calculating and deducing. However, the ultimate objective of control is to implement controllers in real systems, we might take an ad hoc approach relying only on intuition and hands-on experience when designing feedback control systems. We must emphasize the relationship between the mathematical deduction and the engineering question, the relevancy of theoretical analysis and experimental results. Therefore, we must present the engineering background and requirement for each abstract mathematical description, focus on the train of thought, cultivate students thinking in an engineering way. For example, the characteristics of a control system are described by specific terms subjected to typical inputs. Our approach is to present a control engineering methodology that, where based on mathematical fundamentals, stresses physical system modeling and practical control system designs with realistic system specifications.

Stressing importance of students' ability of analyzing and solving problems independently is another key point on our teaching method innovation. In the part of controller design, we apply the teaching method of combining controller design guidelines lecturing and finishing the controller designing by oneself. We have developed a network simulation platform based on MATLAB. Students can make and perform their design works in this platform whenever and wherever by visiting our campus network. In the experiment and practice part, students are required using the regular instruments familiarly to develop experiments, analyzing and explaining phenomena occur in experiments reasonably in theorem.

5 Bilingual Teaching Development

Bilingual teaching of Automatic Control Theory for mechanical engineering undergraduate students in Tongji University began in 2005. After 6 years constructing and developing under the framework of Excellent Talent Program, it is characterized as follows: 1) English original edition teaching material; 2) student based on teaching, the interaction between students and the teacher are necessary; 3) taking case study as the main teaching method; 4) small-scale of lesson, the students number is limited.

Automatic Control Theory is a very popular and also a core course worldwide in universities for engineering majors. There are a lot of textbooks edition in English for this course. We choose Linear Control Systems Engineering as our textbook, the author is Morris Driels, published by The McGraw-Hill Companies. This book is one of the series of "Textbooks Adopted by World-famous University", and organized by Tsinghua University Press and Springer-Verlag in Mainland China. This book divided theories and methods into 25 respectively independent special topics, and each topic can be taking as one lecture material. There are about 3 examples with engineering background in each topic, this helps students to learn to think in engineering way. And there are 7 case studies of control system design, such as waving energy absorption device, missile attitude controller, robotic hand design, and so on. The author's train of thoughts had been described very clearly in each question putting on, analyzing and saluting. Students who want to discover feedback control system theory will benefit a lot from this book.

Student based-on method is a basic teaching method in the framework of Excellent Talent Program, and it's also the effective guarantee for teaching effects. The teacher must prepare every class content meticulously and impulse the active attitude in study. Questions brought forward in the class will evoke students' interests of the lesson, and proper discussion or interaction will grasp students' attention throughout the class[4]. Theory deducing with case study attract students more active participating in than monotonous theory lecture. Experience show that a small scale lesson about 30 students is the best chosen for this kind of teaching, because most students have enough chance to illustrate his or her opinion in the class if he or she want to do in the whole 90 minutes lesson, and the teacher can give consideration to everyone to obtain the best teaching effect.

6 Staff Construction

Teachers' academic standards and attitude in teaching determine the level of teaching directly. A series of policies have been set up to promote teachers' teaching level. We develop the teacher promotion program according to different demands.

7 Degree Education Enhanced Program

Degree education enhancing program is made for most teachers in our university. This is a package plan for these teachers. Young teachers as candidates to take a course must have a doctor's degree. Some teachers in a certain age are not limited by the rule, but they are encouraged to pursue the doctor's degree by the university. Now most teachers in our team have a doctor's degree and abundant engineering experience.

8 Short-Term Training Program

Beyond the degree education program, our university provides lots of short-term training programs for teachers in every school term. For example, we have conducted the bilingual teaching training course each semester for many years since 2004. Sino-Australia and Sino-America language short-term training are also for the bilingual teaching. A new item of Sino-Finland co-operation program begins in this semester in our university aimed to train teachers for Excellent Talent Program. About 10% to 20% of teachers have the chance to get training each year, and the proportion is rising up every year.

9 Fixed-Time Communication Rules

Fixed-time academic communication is our traditional activity. Monthly regular team communication provides a platform for teachers to discuss all kinds of

academic questions, including problems in teaching or engineering practice. Old teachers not only give advice to young teachers on teaching methods or engineering problems, but also transfer good ideas in communicating techniques with students. Our Automatic Control Theory teaching group is an active and up-date team.

10 Conclusion

Control engineering is a multidisciplinary subject, and it has taken its place as a core course in the engineering curriculum. The most important and productive approach to learning is for each of us to rediscover and recreate anew the answers and the methods of the past. Thus, the ideal is to present the students with a series problems and questions and point some of the answers that have been obtained over the past decades. The purpose of us is to present control theory and to provide discoveries in this area to students. We are trying to assist students in discovering feedback control system theory and practice more effectively. This is our goal of Automatic Control Theory course under the framework of Excellent Talent Program.

Acknowledgments. This work was funded by Tongji University Course Construction Fund. The authors would like to thank the colleagues in laboratory provided assistance.

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Research on the Development of New Media Information Capabilities about College Students

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Abstract. The new media information capacity has become an important part of social informationization and aroused great attention from the world. With the introduction of information capacity, this paper analyzes the new traits of new media information and also the effect on the college students brought by the new traits in terms of five aspects: information acquisition, information identification, information acceptance, information utility and information creation. Meanwhile, the negative impacts on the information capacity of college students brought by the media are also discussed in this paper, for instance, too much dependence on new media, vulgarization of information, the time cost on new media and political and ideological education. With those problems in new media information capacity, corresponding measures are advocated in this paper to erase these negative effects.

Keywords: New media, information capacity, negative impacts, college students.

1 Research Foundation of New Media Information Capacities

In the 21st century, info-capacities have become one of the chief topics by the public. In September 2003, A Prague Announcement is made at a special conference on international info-capacities of UNESCO in Czech: It is time to get info-capacities. In November 2005, Tunisia agendum of information society is passed by Tunisia phase meeting of WSIS, which stressed on providing information and knowledge about public justice and peace.

Scans and some scholars think that information capacities are to be comprised by adopting, identifying, accepting, utilizing and creating.

1.1 Information-Acquiring Capacity

It is the capacity by public media, communication and induction. It is direct information from natural induction, which is the basic method of getting information. It is indirect information from public media, which is a chief method in modern society.

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1.2 Information-Identifying Capacity

It is the ability of valuing information according to people's experience, knowledge and judgment. Generally speaking, the identifying capacities include the ability by experience, Implements identifying capacities and Logos identifying ability.

1.3 Information-Accepting Capacity

It is the ability of understanding information. Everyone is restricted by his own knowledge and culture after a series of activities of adopting and distinguishing. People will put up 3 abilities: equivalent accepting ability, Devaluing accepting ability and Increment accepting ability.

1.4 Information-Utilizing Capacity

It is the ability of searching after information or realizing scheduled relevant information for special need. Through adopting, distinguishing, receiving, depositing and utilizing, intercommunion is the internet sport of valuable communication.

1.5 Information-Creating Capacity

It is the ability of building fresh information after analyzing ready information. It is the core of one's communication capacities. It is also the increment acceptation of information.

2 The Function of Information Capacities of New Media on College Students

With the rapid development of new media, the current communication goes to new media. In this new environment, the contents and fashion vary with new characteristics and peculiarities. They play different important roles dimensionally especially in information distinguishing for college students.

2.1 The New Traits of the Information of New Media

Influenced by the development of new technology and changes of people's ideas, new media grows very rapidly. With the widespread use of new media, it grows to be the most significant media in communication process. With new media characteristics, the information in the new environment has some features as follows

First, the diversities of information forms. With the development of technology and the progress of the society, the function of mobiles and network is exploited

and expanded. Currently, all kinds of information of writing, message, video, blogs and BBS can be transmitted in different ways, the form of which becomes various and complicated.

Second, the flexibility of information retrieval. With the continuous promotion of the technologies of mobiles hardware and network server, it is very convenient for information retrieval. People can read and learn relevant writing or non writing very easily according to their needs and can compile and utilize information relevant software.

Third, richness of information. Through mobiles message and network communication, contents enriches not only in writing, pictures, but also in sound and video. By information itself, it expresses such as news, films, writing works, monograph and other personal speech.

Forth, Multi-value of information. The message by mobiles and network values differently to different people. Sometimes, it values just the opposite or invalid. Even the same information, it has multi-value because of the validity or personal values of different senders.

Fifth, concealment of information source. Mobile messages, some stands, blogs, BBS are open to spread, information compilers and senders can send messages by false names or with some other concealment so that the source can not be tested or proved.

Sixth, hard to distinguish true or false. The messages by mobiles and network are sometimes the true checkup information, such as the information from newspapers and from regular net stands. But it is sometimes the gossip, joke, bluff, compiled at will . Even sometimes it is the information involving crime, which wrecks safety.

2.2 The Influence of New Traits of Information upon College Students

The mode of message spreading impacts the capacities of college students greatly, such as the ability of acquiring, distinguishing, accepting, utilizing and creating.

First, The impact on the acquiring ability of college students

1. The advance to acquiring ability of verified forms of information to college students.

It has many different forms of information. The information from network is complete with sound and colors, drawings and writings. Through the kind of description, it can provide a real impression. From which People can get more information. The visual sight and interest can inspire the desire for learning and imagination. It can greatly mobilize us to catch information automatically.

2. The advance to acquiring ability of rich information

Information from traditional media has been drawn on by new media, from which people can get more information for its lager scale. Getting in touch with new media more often, college students are impacted more deeply. They can obtain more information on certain event and improve the ability of catch information.

3. The convenience of information searching advances the acquiring ability of college students

In new media environment, the implements of information searching ripes. The common searching for college students are usually by Baidu, Google and some other searching methods. The development and utilization makes searching more efficient and more accurate. Each can obtain more available information in this way.

Second, The impact of distinguishing information to college students

Much rubbish and wrong information goes round the society because of open new media and the imperfects of administrators. It tampers with the advance of identifying capacities.

1. The concealment of information source impresses the identifying ability of college students

Much information by new media is not clear. The senders can hide themselves to send information, which are full on net and mobiles without testing. People suffer a lot in communication reorganization. The concealment of information source also troubles to judge the value of the information. It counterworks the identifying ability and advance negatively.

2. It tampers with the distinguishing capacities for the college students because it is hard to tell apart the truth.

Open new media lets people of different occupations; different identities and different views express their viewpoints so that a large quantity of information which have not been passed and filtered appear in net. People can but judge by their own personal experience. Some false information is believed. This tampers with the improvement of identifying ability of college students.

3. Multi-value information tampers with the identifying ability of college students

The information from new media has multi-value. Some viewpoints are just opposite to the society, which speech and message are useless even harmful to the college students. The fluctuation of view values makes it more difficult for them to judge the value of information. It tampers with the distinguishing capacities of college students.

Third, The function to the accepting, utilizing and creating of college students

New media information varies in many kinds. It helps to improve the understanding of the value for college students. The mode of multi-media combined with film slides, voice frequencies and video frequencies can help students to understand the course in class. It promotes a certain extent the accepting ability of information.

The utilization of information of the college students are based on obtaining, distinguishing and accepting. The polymerism of new media and the boundless information in new environment lets college students get mass information focused on certain point. They gain much relevant knowledge after distinguishing and understanding and then reach their projected goal.

The promotion of information obtaining helps college students to gain more messages and summarize to analyze the information. Information involves in different spheres, it can promote the ability of transplanting and detouring.

3 The Negative Impacts of Information Capacity on College Students brought by New Media and Corresponding Measures

3.1 Main Problems brought by New Media

First, Too much dependence on new media by the college students

The college students nowadays depend more on media than any other time. When new media improves greatly the obtaining ability, the students depend too much on medium to choose and learn the world. They are deprived of thinking and innovation gradually, which comes apart the reality and can be controlled by the spreaders. All this brings about the deficiency of belonging sense so that students have to rely more on the virtual media to gain the sensation of achievements and satisfaction. Second, vulgarization of information leads to cognition deviation

Second, the popular of intellectual products of humankind is very significant in improving entire social civilization and in increasing lower ranks in public life. Driven by benefits, the public is sold out as commodities----standard of acceptance rate. In order to play up to the desire of philistinism behavior, culture manufacturers produce rough inferior promulgating articles volume. More and more philistine information does great harm to the society.

Third, The time cost on new media by the college students

There are boundless intermingled resources in new media. A mass of available information is submerged in rubbish, which costs more time to distinguish available information for college students. On one hand, the value of information depends on public attention and bumps. The whole information becomes homogeneous. Some spreaders come to a saying by frying. On the other hand, new media brings about the totally new experience in entertainment never happened before, such as net games, occasional correspondence and social net stands.

Fourth, The education of mental politics of college students in modern time

New media information spreads with no barrier in time, space or communication. As a special acute group, the college students are affected in their shape of the view of the world, value and philosophy by the multi-culture and multidimensional vision.

3.2 Countermeasures and Suggestions

In order to have high level communication, it is an urgent significant task to build a high quality communication environment for the college students. Any infection of the new media is to improve promulgation. By constructing, supervising and amending new media and upgrading the students' accomplishments, we can optimize the promulgation, cultivate correct information distinguishing, and provide more favorable conditions and plats in the campus.

First, Constructing and supervising new media

The construction and utilization of new media has become a topic for discussion in modern times. It is not only a personal behavior to recognize, utilize and construct networks, but also it is the requirements of our time. Second, try to cater for the features and rules of internet, change the traditional managing mode from enveloping, stopping and pressing into normal leading and communication.

Second, build characteristic culture in campus and optimize the promulgation environment of new media

The new media in the campus is the most direct platform to affect the communication capacities to college students. So it has to cater for the trend of the development of new media, pay more attention to the great changes in the channels of new media, intensify the active impact on the view of value of college students. First, we should reinforce the construction of the new media platform; implement the innovation of the products and technologies as soon as possible. Second, strengthen the contents construction of new media and pay more attention to the development of the individuation. Finally, we are to analyze and appraise the results of new media.

Third, reinforce the education of accomplishments, enhance the capacities of identifying

The accomplishments of medium are nice qualities of communication to answer all kinds of messages. Through the education of accomplishments, college students learn to criticize by themselves so that they can keep awake in front of corruption in commerce and not maze direction before complicated communication. First, colleges and universities are to pay high attention to the accomplishments education of the medium. Second, colleges and universities are also to pay attention to the expanding pulse of new medium including how to contact in order to have a ready induction. Third, it is necessary to combine the educational resources of medium to enhance education. It is not only the responsibilities of the colleges to improve the medium accomplishments of students, but also it is an educational community. The improvement of media accomplishments can help college students to have a right attitude to get rid of the bad influence from ill information to the maximum and cultivate a correct view of value.

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On the Campus Culture Construction as the Core Competitiveness of University New Area

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Abstract. The culture is the core competition power of universities; the campus culture is a kind of spirit and power. The misunderstood of main stream thinking has made the campus culture to the minor position at present because of more focus on utilitarian than cultural heritage. It needs to rectify this ideal prejudice and then lead our behavior to a right direction. The first one of these problems is further thoughts on campus culture. It needs to make great effort and dedicate their lifelong conviction and energy. It also needs to study the mission of university culture and education. So it is necessary that the campus culture construction of new campus pursues the harmonious and the constantly development and guide the society construction, uses the advanced preponderant culture to usher education for personality in the university, composes the fiche etablissement, and then expanding reputation of the universities and educational effect.

Keywords; New campus, the construction of campus culture, core competitiveness, fiche etablissement.

1 Introduction

General Secretary Hu Jintao pointed out that universities should attach great importance to the construction of the campus culture, carry out various forms of cultural activities in campus, and form a vigorous, civilized and harmonious cultural atmosphere in campus [1] when he reviewed in Peking University before the 110 anniversary of Peking University's establishment. President Zhu Qingshi of University of Science and Technology of China said that we are full of passion to strive for funds, vying for talent, vying for hardware in the past few years. But we find that some universities are losing their most fundamental things gradually. People on campus can no longer calm down to read and think when turning around suddenly. I finally realized that the basic truth of universities' sustainable development of is that schools must be able to make teachers and students calm down to read and think after being a university president for ten years. If it doesn't have this kind of atmosphere in a university, the things we get may be worthless [2] when he talked about an important problem on how to build a world-class university. As everyone knows, most of the universities have made some

L. Zhang and C. Zhang (Eds.): Engineering Education and Management, LNEE 112, pp. 137–142.
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reconstruction on the basis of the original campus, or bought land to build new campus in the local university town or the surrounding area with the expansion of the scale in universities in recent years, so as to solve students' explosion and difficult problems such as shortage of schoolhouses, reduction of books owned on average and restriction of playgrounds. However, some new problems have occurred during the construction of new campus. The culture construction of new campus is one of the key and difficult problems.

2 The Reasons for Campus Culture Construction as the Key Point

The reason why we call it as the key point is that campus culture represents a kind of spirit and power. Culture construction won't take effect in short terms which is different from infrastructure construction. It also can't finish and reflect through a few tall buildings, several green lands, several multimedia classrooms and computers. Instead, it must match with the infrastructure construction, such as paying attention to the coordination existence of surrounding environment and campus atmosphere, influencing people without being noticed and in silent of enlightenment. We should say that campus culture is a process valued in the long-term persistence and emphasized on constructing. However, because of time limit from project and urgent need of the development in the university, there usually exists the behavior of ignoring the overall coordination but emphasizing short-term utilitarian effects. Even if the construction of new campus has an overall plan, local infrastructure construction also exists the construction effect of ignoring the humanized details against convention. For example, some roads of new campus are built gridlocked and horizontal flat vertical, but the crossing is completely set for right angle according to the geometrical graphics, which means all vehicles entering the campus have to accept the "right turn" test, together with the garden and grassland occupying larger area. It makes traffic land in the university appear more crowded. As some expert claimed this university is so new that it has nothing to do with culture after observing a new university campus. And without the cultural atmosphere, educational effect of the universities will be allowed a discount. At least, culture represents a kind of spirit and power. This kind of atmosphere needn't and cannot rely on boning up on materials to take effect. Instead, it must rely on materializing school running concept, school spirit, teaching and learning atmosphere and teachers' and students' spiritual outlook for campus mainstream atmosphere. It lets every student placed on campus deeply feel the difference between here and the outside world no matter whether there are fences or not. Obviously, this is also the primary problem to sublimate school running concept, purify the school spirit and teaching and learning atmosphere, change teachers' and students' spiritual outlook. Thus it becomes the key issue of campus culture construction.

3 The Reasons for Campus Culture Construction as the Difficult Point

The reason why we call it as the difficult point is that the misunderstood of mainstream thinking has made the campus culture to the minor position at present because of more focus on utilitarian than cultural heritage. It needs to pay much effort to rectify this ideal prejudice and then lead our behavior to a right direction. As the paper has stated, the cultural construction doesn't become effective in one day. Therefore, it needs generations of people to make great effort and dedicate their lifelong conviction and energy. We must get ready to devote ourselves to the career and be content with poverty caring only for our principles. Besides, we must realize that it is our responsibility to inherit our culture and flourish our civilization. Obviously, one of the reasons why culture construction is difficult is that it needs a long, hard, and even painful process which must stick and pursue.

Secondly, the understandings on campus culture are inconsistent. Whether the sound of reading aloud is culture or not? Whether well-regulated is culture or not? Whether neat and quiet environment is culture or not? Campus culture should be accumulated in years of school running process, reflect school-running origin, inherent tradition, region characteristic and customs, and the summation of civilized achievement and characteristics combined with the feature of the times. It is a complex of various factors including school motto, school badge, school flag, school song, school history, school-running idea, educational concept, the mission of universities and its environment. Some scholars also analyzed the campus culture into four layers including artifacts, perspectives, values, and assumptions according to the understanding of American academic world on the culture and campus culture[3]. At home, when the concept of campus culture started to appear, people just noticed about the various art education and community activities in the students. Academic world also go on this path. They equal campus culture with "campus spirit", "school spirit", "art education", or "cultural activities" and the latter two are in the majority. So the research on campus culture has been limited to art education and association activities in a narrow range[4]. Though campus culture is considered generally as physical, spiritual and institutional (organization) culture of the campus, or another three stages as environment culture and campus cultural activities and spirits of the campus[5-7]. However, the understandings for the internal composition in all stages aren't so identical. And then it makes it another difficult point of the university cultural construction.

Thirdly, how to get rid of secular strange circle, get freed from the circle of fame and wealth, and pursue the culture in real meanings? Actually, it involves the problem of the mission of university culture and education. Academician Yang Fujia in his articles[8] pointed out that the university culture is the culture which pursues truth, rigorous and fatalistic, upholds academic freedom, advocates linking theory with practice, and advocates morality and patriotism. Accordingly, he thinks the fundamental mission of university education is to "cultivate good citizens", "cultivate students' values, ethics, thinking concepts, personhood way and the ability of social work", "exert students' genius", and then he held that the core and even the whole mission of university culture is to humanize, awaken and

moving students using big love, and make students become wisdom. It needs to humanize students' patriotism, awaken their responsibility consciousness, moving them to tie to the motherland and the career, and then devote themselves to the construction of the career that they love. To say the least, "being a true and moral person" is a hard process which needs persistence and perseverance to stick. This is another point of the university cultural construction.

4 Realization Paths of Campus Culture Construction

4.1 It Must Strive to Provide Intellectual Power for Harmonious and Sustainable Development in the University

The campus culture is an important part of university culture. So the construction of campus culture in new campus must strive to provide intellectual power for harmonious and sustainable development in the university. The construction of campus culture in the new campus should reflect the existing school spirit, school running concept, and demonstrate its unique teaching style, studying style and historical, cultural, humanistic accumulation (excellent component). This is the root of universities relies to keep sustaining.

Generally, university spirit is the essence of souls of university culture, and "the overall spiritual outlook of vitality, creativity and cohesion which universities reflected"[9]. "The university spirit and concept are what the university's ultimate pursuit, the soul and verve of the university."[10] "As long as it's built about the dense atmosphere of the spirit of university culture, the young people take the university as a sanctuary of the spirit culture, and entering the university will acquire independent personality, rich soul and sensitive creative ability. In this way, this nation will accumulate tremendous spiritual potential energy, and be expected to rise in the short term."[11] As matters stand, nowadays, some universities' practice is restricted by various factors. They mainly attach importance to the infrastructure construction, and even basic greening can not follow-up synchronously. Though they have, it must be speed-oriented, transplanting several large trees, hanging a few banners or carving several characters, mechanically writing some bon most and hanging them in the corridor. This type of "do show" speed-up, the roaring of the machines and the dusty air caused by building largely together formed unique scenery of the new campus construction.

Thus, it becomes such imperative and necessary to highlight the cultural factors in the new campus construction. Some scholars have appealed to *set up culture districts centering on the universities* [12] to lead the cultural consumption trends in the whole society, and also to improve and sublimate the culture of the university. Some other scholars claim that it needs to promote better quality education as the theme, and train students really to be the person with integrated development both with innovative spirit and practice ability.[13] In specific running process, campus cultural construction includes some sides such as taking the student as the main part and the campus as the main space, taking the practice as the main form,

aiming at training students' innovative spirit and practice ability, developing campus culture from campus environment, teachers' and students' image, running characteristics and so on. So it makes batch of students' physical and mental quality get developed perfectly and keep bright cultural characteristics.

4.2 It Must Facilitate Universities Existing Talents with Established Specifications to Lead and Serve for the Social Construction and Evolutionary Trend

Obviously, no matter which kind of points implies an expectation, which is that the culture of the universities is sure to facilitate universities existing talents with established specifications to lead and serve for the social construction and evolutionary trend, make fiche etablissement, and then expand scholastic reputation and educational effect. Here we may as well use British anthropologist Edward B. Tyler's definitions of culture in his book Primitive Culture. He thinks that culture is a complex whole, including knowledge, belief, art, moral, law, custom, and any other capabilities and habits that people gained as members of society.[14] So in a certain extent, we can think campus culture is the necessary rely which makes the audience (including the educator, the educatee, university community and other social audience, and so on) understand tradition and sublimate their realm of life.

Therefore, during the course of campus culture construction, especially the university that has opened new campus, need to inherit and play a guiding role by means of the cultural atmosphere, and then use the advanced preponderant culture to usher education for personality in the university, and try to make fiche etablissement. In this sense, it can attract people and influence people, cultivate people, and edify audience, and then shape their noble moral and personality. It's the highest pursuit and realm of the campus culture and even education to sublimate the realm of life of the latter. As far as students' education is concerned, how to transform differences such as students' family and knowledge background into educational resources is the key whether a university has core competitiveness. Therefore, it requires us to pay attention to factors on education for personality throughout students' entrance education and three or four years of higher education. We should adhere to strengthen students' technical training, make students graduate with the quality that generally university students should have. Meanwhile, they will have deep imprint of their old schools.

This kind of imprint is pieces of fiche etablissement when graduators set to work, enter the society, and participate in social production and living. Their study habits and individual characters acquired in their universities will affect the individual and group they contact surrounding them (at least it's obvious for their offspring). If things go on like this, the social influence and reputation of universities can be on the rise. Of course, this requires school spirit, teaching style and studying style to reform. Namely, it needs to strengthen the cultivation of learning habit, pay attention to the change of study style and the acquisition of the ability, train students' ability of self-study and exploring spirit. Teachers must strengthen students' guidance, and students must also learn to study independently. Thus, we

can make the quality and ability truly possesses the inheritance and penetrability that the culture should have, and then affect generation after generation of university students and sublimation of their life.

Acknowledgements. Research Project on Humanities and Social Sciences in Hebei Province (Project Number: SZ070213).

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Analysis about Improvement of Students Training Quality in Higher Institution

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Abstract. With the rising of the unemployment rate for college students, training quality of students causes a wide range of social concerns. Many people criticize higher institution that they train outdated talents in outdated education model. The paper proceeds from teaching models, assessment models and management models, it analyses the misunderstandings for students training in higher institution, and then analyzes the causes of misunderstanding. It proceeds from three angles to explore the improvement of the students' quality cultivation. First, it provides some paths to improve the quality of the teachers in higher institution. Second, it proposes to construct the practice base for students. Third, it should alter the curriculum of higher institutions to meet the needs of the society. In short, the article tries to make positive explorations to improve the quality of the students in higher institution.

Keywords: Higher institution, Students training, Social practice.

1 Introduction

With the rising of the unemployment rate for college students, many people and educators are accused in training model of higher education. They propose improving the quality of students' training, reducing the waste of human resources, rebuilding confidence in the employment of college students. Despite there are many calls for reform in recent years, but there are multiple factors that interfere with failure. The reform is impossible realized immediately. I think if we wait for no hope, we had better explore feasible method to improve training quality.

2 Misunderstandings for Students Training in Higher Institution in China

2.1 Teaching Models: Classroom Education Is All, Extracurricular Education Is Scarce

Before enrollment each university will design different professional training programs. Training program will generally require a certain number of course. Each

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course will be given a certain amount of credits. Students may graduate when they have taken specified credits withthin four-year study. These courses taught are almost exclusively in the form of classroom education, which is criticized" as spoon-feeding" education by many educator. Spoon-feeding education fixes students in classroom, which suppresses the interest of students, imprisons the thinking of students, stifles the innovation of students, and creates a number of absent-minded, low efficiency and even inefficient students. So the personnel quality can't meet social needs. University general also will set some extracurricular learning, as social practice. It will usually be arranged in second term of four-grade. But work-seeking squeezes all the time, graduated practice often shapes with fake. As long as students hands over practice report with practice units seal, practice task mean having completed. Nobody concern if students have really practiced. So teaching model of higher education has become a formality that classroom education is all, extracurricular education is nearly no.

2.2 Assessment Models: Test Scores Are All, Having Studies Is Minor

It is no exception that every college set a series of assessment to the students. But higher education holds the preference that test scores is the only assessment. Although many specific elements lists in the project as the assessment of higher education, only academic performance works on the scholarship evaluation and some selections. So the students do not concern their usual level of learning efficiency and care about the accumulation of knowledge. They do not need to have questions, do not need to develop expertise. As long as the end of each term for centralized spot learning, they can also get good results. Single assessment standards developed profit-oriented students and others, such as cultivating and molding, become blind spot. Under the education system, students receive high scores, but low abilities.

2.3 Management Models: Instructor Management Is All: TEACHERS Are Strangers in Extra-curricula

In University, students keep close relations with university instructors. Instructors are usually responsible for student life and study. However, students do not have any contacts with teachers in addition to the classroom education. Although the students maybe appreciate some teacher, there is no mature academic atmosphere and academic organizations, interest sparks also gradually collapse. Higher education is concentrated education in classroom education. The right of questioning and answering for students are just limited in classroom. The education model cuts the interaction between teachers and students, and it lets the learning out of the understanding. It seriously contains the possibility for training quality improvement in higher education.

The causes of misunderstandings for students training in colleges and universities in china

2.4 Utilitarian Education System

For the decades in the development of reform, Chinese market economy develops further. Under the impact of market economy, higher education has also been contaminated by many habits of market economy. Utilitarian tendency is most evident. Higher education in China experiences two stages, a national distribution and market allocation. In the last century, national distribution phase terminates, and it is at a stage of market allocation. In market allocation stages, each College competes to launch new professionals, and enrollment is rising year by year. Higher education concerns about the scale of higher education rather than quality. It has reduced to utilitarian education of higher education.

2.5 Teachers Lack the Right to Speak

In College, the executive branch has the right to speak. When administrative personnel formulate the rules and regulations of the higher college and universities, they always do not forget to protect the interests of the group. It results in a lack of decisions of teachers in College and forms the executive over the teaching situation. In specific teaching process, only the teachers can master students ' specific needs. But because there is no right to make decision, many problems that should be resolved is unresolved. Therefore, the teachers in "managed" teaching mode has no drives, which is a significant cause of poor training quality in higher institution. In current, many scholars and educators are in concern the lack of voice for teachers. They proposed to change institutions structure, but they did not deprive administrative right fundamentally, and recovery executive branch service function. They partly improve the right of the teachers under the protection of administrative power. It dreams reaching a right compromise, which only will delay the schedule for the reform of higher education.

3 Paths Analysis about Improvement of Students Training Quality in Higher Institution

3.1 Decision-Making for the Teachers

University administration is not the first-line teaching, however, most of the policies are formulated by them. So the policy can’t meet the actual development of universities. It is the development of resistance rather than progress. Teachers shoulder the task of teaching in the first-line. It is the teachers rather than executive branch to design the students. So the return of decision-making for the teachers is an important part of improving teaching quality. I think it should transform governance Structure and establish Council of Professor. Now many universities have set up Professor Committee, as if it means an improvement that decision-making power has returned to teachers. But that is not true, many university professors Committees do not work. Some professors Committees are even as vases

for decoration. It did not play the role of the Commission. It is no beneficial to improve the quality of students. The reason lies in governance structure of the university governed by executive. I advocate that professor council belongs to two different levels, teachers committee and professor council. The members of the teachers Committee limits to all teachers. Teacher committee selects Council of Professor. It contains different function and divisions. Professor council has decision-making authority. Teachers committee has the right of oversight recommendation. But when a decision is opposed by Council of teachers, teacher committee can have a veto.

3.2 Establishment of a System of Social Practice for College Teachers

Now many employers complain about that the quality of students is in declining year by year. It means undoubtedly that it is also the urgent need to improve the quality of teachers. If we compare the university factory, students is the product of teachers. If teachers fail, we can't hope to produce qualified product. The teachers of university are not be on duty in nature, all the time allocate in schools and at home. The main way to access to knowledge is from books, Internet, but information update soon. Some information has been lagging behind during published. So what teachers taught is the delay information. I think if you want to change this situation, the most viable approach is to establish a system of social practice of teachers. Teachers regularly associated with the specific grant program for learning to the social sector. This specific action includes: first, establish a base in colleges and universities. University can sign a cooperation agreement with related companies. They regularly sent teachers in the sector of cooperative enterprises. It not only provides free human resources for the enterprise, but also improves teachers ' ability to combat. It can effectively avoid the teacher information lag problems. Secondly, establish practice base of the Government. The measure is intended primarily for management of teachers. The teacher with management courses can go to the government and relevant departments to learn. They can master the specific operations and processes by practicing. So they can speak with precision during the lecture.

3.3 Internship

Companies can cooperate through consultation with the universities. University provides free human resources for companies. Enterprise provides students with internship sites. Freshman and sophomore can’t set practice courses, only as precipitation period of foundation knowledge. Junior and senior begin gradually to increase practice courses. Each practice needs one or two guidance teachers. Instructors lead students to the corporate enterprise, assist students to practice task and guide students regularly for discussion and so on. But it still has several problems that need attention: first, we do not support dispersed practice. Now college students are among the basic implementation of decentralized training themselves,

but university lack effective oversight of dispersing practice. So distributed practice is often a mere formality and fails to improve the ability of students. Secondly, it should strike a good relationship between learning and practice when settings internships, so that it can both promote each other and complement each other. Through the establishment of the internship system, it can cultivate innovation ability and actual operation of students and shorten the time for students to adapt the society. So the establishment of the internship system is one of the most effective ways to improve the quality of training.

3.4 Military Training

When students graduate, in addition to be criticized for low operation, another accusation is often affected by the lack of social responsibility. In the process of higher education, moral education involves very little. The traditional view is that moral training is a systematic project. It should commence in early childhood and go through middle and high school education. In university, the sense of responsibility has been basically formed. It is unnecessary to teach moral lecture. But the cultivation of morality and responsibility is lifelong courses. In early childhood education, moral values and responsibility education only remain the writing stage; however, adult education is part of the practice period. So in college a child will become a adult, responsibility and morality education is more important. In many countries the law expressly provides that, every citizen has the obligation to perform military service. In current higher education in China it has set military training. It general has been arranged in the first semester when students enter the university. It lasts half a month. Military site is provided by the University. I prefer the one year of military practice. Because the military training is short, it can't fully develop sense of responsibility. High institutions can provide internship opportunities for one year in the army in grade four. Military discipline is sturdy. Such practice is the best way of cultivation of students ' responsibility.

3.5 Curriculum of Higher Institutions

At present, curriculum of higher institutions still follows the traditional curriculum. Classroom education is the main and curriculum is poor mobility. It is in long-term state of being taught and learned. Students do not need innovation and thought, so changes in institutions of higher education curriculum is imminent. First of all, basic education need consolidate. Freshman and sophomore should lay a solid foundation of knowledge, learn interdisciplinary, and train all interest of students. Secondly, it should enhance practice education. Junior and senior determine the professional an increase the intensity of internships. Third, the examination standard should diversify. Examination of a course should set a number of assessment criteria, such as attendance, assignments, views, discussions, and so on. Diversified evaluation standards can explore different potential of students. The fourth, it may increases student learning time. Teachers in the teaching process need to handle a good relationship between learning and self-study.

Self-learning can glow the sparks of wisdom. Therefore, under the guidance of teachers, increasing learning time, it may be more conducive to broaden students ' development space. The fifth, it should encourage academic discussions. High institution should create academic atmosphere. It provides relevant places to encourage academic discussion between teachers and students. It is quite important, because in other countries, academic organizations everywhere, are often a symbol of the school of academic organizations. Good academic organizations will not only broaden students ' thinking, raise the level of teachers, as well as power for development of the University.

Acknowledgement. Financed by Youth Project of Ministry of Education in China. (10YJC790023)

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Model Research on Teaching Evaluation for University Teachers Based on Developmental Evaluation

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Abstract. Developmental teaching evaluation is a process of constructive interaction, it focuses not only on the current performance of teachers, but more importantly, on the growth and development of teachers. The advantages of developmental teaching evaluation lie in promoting the professional development, advocating individual teaching characteristics, emphasizing on encouraging teachers to initiatively fulfill the needs of modern education through reflections. Through the research on the status of university teaching evaluation, this paper reveals the main problems of current system on the perspective of developmental teaching evaluation, which involve: subject simplification, non-scientific indexes and unreasonable use of the results. This paper also interprets four main features of developmental teaching evaluation in detail; proposes that teaching evaluation in universities should foster the concept of development, should establish a scientific and rational evaluation system, and should improve the feedback and tracking process and form the model of analysis, evaluation and feedback.

Keywords: Teaching Evaluation, Developmental Evaluation, Teacher Development.

Introduction

Teaching quality in colleges and universities has become the hot spot in all social circles, thus, as a main evaluating method for teachers' knowledge, skills and actual working level, the teaching evaluation has been attached much importance. The method "teaching quality evaluation" proposed by Professor CHEN Guangtong objected to the teacher's teaching, made objective measures and value judgments for the process and effect of teaching according to a series of certain methods and standards for teaching and learning[1]. In the long term, the teaching evaluation has played a positive role in making assessment of teachers' teaching process, improving the teaching quality and encouraging teachers and students. However, in realities, the current teaching evaluation work also has something to be discussed and bettered. This paper attempts to raise the awareness about the problems and to motivate further thinking through analyzing the existing problems.

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1 Problems Existing in the Teaching Evaluation of University Teachers in China

1.1 The Simplification of Main Evaluating Subject

Currently, many colleges and universities in our country have only chosen students as the single body of teaching evaluation. But the different evaluation bodies have different views on teaching. Multidimensional evaluation bodies can supervise each teacher's teaching work in stereo and comprehensively. Simplification of evaluating body would significantly reduce the reliability and accuracy of the evaluation results.

1.2 Non-scientificity of Evaluation Index Setting

This problem reveals in three aspects: first, many current teaching evaluations in universities only evaluate the classroom teaching process, while ignore the processes of guiding the young teachers to improve, guiding students' innovation practice activities, reforming and constructing education and management; second, non-rationally designed evaluation indexes with weak countermeasures which involve the problems such as using the same or similar indexes to evaluate through different evaluation bodies; third, similar indexes for evaluating different objects.

1.3 The Irrationality of Results Use

Currently, the evaluation results have not been used properly. The evaluation results only are used for workload accounting, and are linked to teacher's salary and bonus, but are not linked to teachers' professional development opportunities. The teaching evaluation results which link to allowance and income distribution only have the influence on those young teachers objectively, and have little influence on middle-aged and above teachers.

The author regards that it is the lack of developmental evaluation ideas that results in the existing problems as mentioned. If the developmental evaluation ideas can be taken into consideration, the shortages can be improved in some degree.

2 Mechanism of Developmental Teaching Evaluation

Developmental teaching evaluation system objects to promote professional development of teachers, as a result, it very concerns for the recognition from the evaluated objects, requires them to accept evaluation conclusion at the greatest extent, and to view the conclusion as "new beginning" for future professional development [2].

Developmental teaching evaluation system has the following features:

2.1 More Concerns for Developmental Function Than Selecting Function

Developmental teaching evaluation aims to achieve the win-win goal of common development of all the teachers and schools through the methods of promoting the teachers' professional development under teaching evaluation without rewards and punishments.

2.2 More Concerns for Teachers' Professional Development Process Than Teaching Evaluation Result

This feature reveals in: first, the system maintains the teachers' rights of evaluating, claiming and decision-making, through timely feedback assessment information; second, the teachers participate in the whole process of evaluation, which will fully make them understand purpose, standards and steps. The system makes teachers (evaluation objects) learn their own strengths and weaknesses, which will help them adjust the goals and direction in their professional development and will fully reveal characteristics, the progress, the achievements, the experience and lessons.

2.3 More Concerns for the Needs of Teachers' Development Than Identifying the Differences among Individual Teachers

Developmental teaching evaluation focuses mainly not to judge teachers' role in groups, but to understand teachers' advantages and disadvantages through the course "evaluation based on differences" with basic respects to each teacher's job. So as to determine individual teacher's professional development needs, to provide professional development opportunity and to help achieve individual teacher professional development goals. Developmental teaching evaluation system is a future-oriented system, it focuses on the future.

2.4 More Concerns for Multiple Individual Assessment Than Common Assessments from a Single Evaluating Body

Developmental teaching evaluation features in multiple evaluating bodies. In the system, leadership, steering group, experts, evaluation objects and students together are bodies for evaluation. It includes not only the bottom students' evaluation and top leadership and steering group evaluation, but also the parallel experts' and self-evaluation. More importantly, developmental teaching evaluation specially fixes different evaluating indexes for different evaluation bodies. While the traditional evaluation more fixes single evaluation body and common evaluation index.

Low participating level is a main characteristic of passive teaching evaluation the teaching evaluation should not be one-way [3]. In order to improve the recognitions of evaluation conclusion, developmental teaching evaluation system creates the opportunity of joint participation, emphasizes the communication, consultation, understanding and cooperation between the teaching and management parts. The system welcomes the evaluating objects to participate and creates a harmonious atmosphere throughout the evaluation process. This greatly improves recognition and acceptance.

3 Establishment of a Developmental Teaching Evaluation Mode

In order to overcome the weaknesses of teaching evaluation, the establishment should be done on basis of a scientific and reasonable evaluation of teaching pattern through theoretical analysis and investigation, and the mechanism of mutual support and feedback. Thus, the evaluating work would be more scientific, standardized and humanized. This leads to firmly established quality consciousness, a good teaching atmosphere and fully motivated and inspired enthusiasm of teachers and improved teaching quality. The author regards the people-oriented teaching evaluation system should be made from the start of changing the concepts of evaluating job, to construction of developmental evaluation system, then to a perfect feedback and tracking process on the technical level.

3.1 Establish the Ideas of Developmental Evaluation

Ideas guide actions; certain kind of ideas will produce certain kind of actions. Only to establish scientific evaluation idea could lead to scientific evaluation and play the promotion and development evaluation function. The current teaching evaluation is led by the "index quantification" mode. The lack of the thoughts of "people-oriented", neglect the inner motivation cannot motivate all the teachers' participating enthusiasm, and cannot raise the promotion role of teacher development.

(1) Establish the idea of promoting teachers' professional development. Developmental teaching evaluation system should be closely combined to daily work of teachers; the teachers' professional development should be a part of teaching evaluation and provided supports. Through the practice of teaching evaluation, teachers' current working condition and job performance could be understood, guidance could be directed to teachers according to their existing development goals, the improvement of teachers' performance, improvement of teachers' professional development, and the long-term promotion of the school development could be achieved[4].

(2) Establish the ideas of teachers' subjectivity evaluation. Teachers should participate into the course of strengthening teacher self-development consciousness and promoting teacher's main body status. Teachers' self assessment should become an important part of the teachers' teaching the evaluation system. Other

assessment information should be additional information for promoting teachers' development.

(3) Establish the ideas of differences in teacher evaluation. Different teacher has different characteristics; individual differences among teachers are common, to adapt the same evaluation standard to evaluate professors and lecturer is easy to frustrate the enthusiasm of young teachers' in participating in the evaluation. Therefore, the system should establish different evaluation standards according to the individual character, background characteristics, teaching styles and the stages of development. To adapt unified standard to measure all teachers and to do blindly transverse comparison are wrong. More longitudinal comparison is needed. The adaption of different standards for individual teacher respects the individual difference and promotes teacher professional development, so as to achieve the effect of the individual differentiation.

3.2 Establish a Scientific and Reasonable Developmental Teaching Evaluation System

(1) Design evaluation criteria. Developmental teaching evaluation criterion is the basic criterion for implementing developmental teaching evaluation in colleges and universities. Besides the principles of science, objectivity, feasibility, orientation and democracy, developmental teaching evaluation criteria must include such standards as development, diagnose and feedback. Developmental criterion can not only promote mutual development of teachers and colleges, but also promote the subjects construction.

(2) Define evaluation targets. The positioning of evaluation should be based on its functions. To promote professional development for teachers is an important function of teaching evaluation. Developmental teaching evaluation should mainly aims to improve teacher's professional development, not merely to test teachers.

(3) Determine evaluation bodies. On choosing evaluation bodies, comprehensiveness, accuracy and operability should be taken into consideration, namely, to maximize the reflection of all aspects of teaching process, and to consider maneuverability combination. The author regards that the teaching evaluation subject choice criterion should be: combination of students evaluation, steering group evaluation, peer evaluation for class teaching; combination of leadership evaluation and steering evaluation for the teaching documents and teaching research work.

(4) Establish evaluation index. Some typical indexes are regarded as evaluation indexes. On considering the complexity of by many factors, teaching quality can be reflected from different angles. Therefore, the developmental teaching evaluation should take all aspects, different angles and different profiles of teaching process into consideration, and achieve multi-faceted evaluation. Both the final teaching effect and each step of teaching process should be put as a whole.

(5) Distribute corresponding weights. By using the methods of analytic hierarchy process (AHP) and experts sorting developmental teachers' teaching evaluation index system should be completed to adapt the conditions of different colleges and universities.

(6) Form evaluation scheme. Evaluation scheme is the basis of evaluating, in China, to implement developmental teaching evaluation system must establish developmental teachers' teaching evaluation scheme. Because of different concepts in running different colleges, developmental teachers' teaching evaluation system should be established based on actual situations.

3.3 Improve Feedback and Tracking Process after Evaluation

Timely feedback of the evaluation results is expected. The evaluation results must be quickly transferred to the teachers evaluated, and to the evaluating bodies and to the students. So as to let the evaluating bodies realize the effect of teaching evaluation activities. To the teachers, the results may lead to their summary and their prompt improvement.

Developmental teaching evaluation aiming to improve college teachers in academic innovation and development, not to distinguish among teachers in teaching quality or ranking or positioning, may lead to a method that promotes the development of the teachers, teaching method and the colleges[5]. Developmental teaching evaluation is a constructive interaction process, should be established in each step of teaching process, not only the classroom teaching but also to larger extent from the main factors to related factors. The teaching process could be supervised and adjusted in any time so as to guarantee the teaching quality. Of course, all direct and indirect factors in the teaching evaluation should both be emphasized and comprehensive.

A saying goes that: "ships can't travel without rudders; voyage cannot be done without winds ". The teaching quality is the lifeline of colleges. How to give teachers a scientific and fair evaluation and lead to a higher teaching quality is a topic for each college.

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From Discipline to Indoctrination: A Trend in Classroom Management

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Abstract. There are some shortcomings in the traditional classroom management when we consider the complexities of education and behavior of people. According to the analysis of the case in education practice and classroom management theory, an enlightened style of classroom management should become a new tendency. Based on the emotional management, it developed with open management, and made chaotic management as the key.

Keywords: Discipline, indoctrination, classroom management.

1 Introduction

Classroom management refers to the way teachers coordinate the relations between students and events, time and space, and other factors present in the classroom to ensure order and efficiency in teaching. Good classroom management can stimulate students' interests in learning, hence nurture their potentials. In addition, good classroom management can improve teaching efficiency and ensure teachers maximize their teaching time. Moreover, it can promote a harmonious classroom atmosphere where teachers and students can achieve understanding and foster the communication of knowledge and emotions.

Traditionally, the teaching process consists of several parts, namely, "teaching purpose," "teaching principle," "teaching organization," "teaching methods," "teaching evaluation," and so on. In this context, classroom management disappears from the view. The neglect of classroom management is a real pity in the study of education. Considering the present situation, it is not difficult to find that classroom teaching focuses on content and speed in learning due to the influence of instrumental rationality, intellectualism, social standard, and other thinking models. Students can be compared to the products produced in a machine factory where efficiency is most important; hence, students completely lose their sense of independence. Students have turned from "persons" into "non-human subjects," and they have been viewed as a special kind of processed product. Classroom management, in fact, has turned into a form of discipline management and a tool

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for suppressing students' individuality. Therefore, to redevelop their individualities, students should freely take part in implementing classroom management. Likewise, teachers and students should get rid of the traditional discipline management to embrace the reform successfully.

2 Issues and Characteristics

2.1 Narrow Teaching View: The Sharing of Knowledge

Under the domination of instrumental rationality, the main purpose of education for nearly a century has been to teach people to follow, adapt, recognize, master, and develop the external material world, with focus on the "knowledge to live." In the process of education, the more valuable things in life have been omitted. "The basic deletion is that it gives up the education on the reasons why to live so that it can not allow people to know and change themselves from the meaning of life, the value of survival and such fundamental issues." "It is bound to abandon the sacred purpose that is to shape freedom of the mind and turn the bottomless purpose of all education into limited purpose of survival and adaptation"[1]. Education has given up the care of the human mind, and it has been reduced to teach the students to share knowledge similar to the possession of wealth. Students do not connect with their inner world and spirit; however, the more knowledge they obtain the less freedom and the fewer characteristics they develop. This kind of education is simply a way of pouring knowledge into students' minds. "The original hypothesis of pouring education is to misunderstand people as object. The more fully and completely filled into the container, the better the teachers are; the more pleasant the students allowing themselves to be taught, the better the students are" [2].

Under these circumstances, teachers teach knowledge to their students in an authoritative style, and students accept the knowledge sincerely. In the process, students are like containers that simply store other people's ideas, thus hampering the creation of their own unique and creative ideas. The attempt to replace students' awareness with their understanding would seriously undermine the harmonious process of their self-development. Likewise, with this narrow view of knowledge; classroom management turns out to be a means of control and a one-way indoctrination process.

2.2 Lopsided View of Teachers and Students: Obedience to Authority

The relationship between subject and object is simply understood as the relationship in which the subject needs to grasp the phenomenon and essence of the object. Therefore, the core purpose of understanding is the mastery of knowledge. In this situation, education has become an activity for mastering knowledge—the

teachers are the authorities whereas the students are the recipients of knowledge. The relationship between teachers and students is characterized mostly by the method of giving and receiving knowledge. The same method is applied in moral education, aesthetic education, and social development. Educational activities are bound by serious rationality. Students have no choice but to obey the instructions of their teachers as the latter acts as monopolists of knowledge in front of students. Therefore, the teacher–student relationship is similar to the dominant–subordinate relationship. In the context of teachers' authority, only they have the power to speak, thus resulting instrumental rationality, intellectualism, social standard, and other thinking models. Students can be compared to the products produced in a machine factory where efficiency is most important; hence, students completely lose their sense of independence. Students have turned from "persons" g in a monologue style of education. The relationship between teachers and students in the monologue style of education is what Martin Buber claims as the "I and it" relationship. Whoever is receiving knowledge assumes the status of a slave. "People can adapt themselves to be slave by reducing the quality of his intellectual and moral qualities. People can adapt themselves in the atmosphere of mistrust and hostility by the lack of creativity." [3] This consequence gives students a clear disadvantage.

On the one hand, education has been transformed into knowledge and information exchange. Teachers and students communicate with each other as carriers of knowledge, thus the latter loses awareness of their personality in the education process. On the other hand, this process of education has been the primary function and role of teachers. If subject teachers are only concerned about students' curricular development, the exchange between them and their students becomes lopsided because it disregards human freedom and nature during interaction.

2.3 Teacher-Centered Management Signaling Subjectivity

In the logic of simplicity, people usually deal with the relationship between humans and nature in the "subject-object" thinking model. Similarly, in the relationship between teachers and students, teachers are always in charge of students due to their absolute advantage in terms of age, knowledge, and social status. Dualism of thinking leads to a single subject of the education process where the teacher is the principal character. The students become dominated as they assume the status of the object being transformed. Therefore, teacher-centeredness becomes the main tendency in the education process. Teachers control the classroom, and they impose their views on students. Meanwhile, students are subject to the authority of teachers who provide clear and rigid requirements and make evaluations. The sociology of education research shows that "in the primary class teaching, students' behavior acted for their teachers are mostly obedience." The students' performance of the role of the subject is their response to their teachers. Many researchers both local and foreign agree that this kind of students' response to their teachers is a basic characteristic of the interaction between teachers and students in the classroom [4].

3 Methods and Strategies

3.1 Emotional Management: The Premise of Indoctrination of Classroom Teaching Management

"Traditional rationalism is an extreme expression of blind worship of knowledge. In this view, it is believed that only those with general knowledge of inevitability possess real knowledge. Moreover, traditional rationalism has made an absolute claim that the knowledge of inevitability is absolutely accurate without contradiction. Moreover, it is valid at any time and place. As a result, the higher the degree of abstraction, and the more formal it is, the farther away it is from real-life knowledge. Abstraction becomes the true knowledge, whereas those close to the social life are seen as impure knowledge" [5]. Classroom management under the guidance of this education philosophy thus becomes a practical and logical tool. Instrumental education translates relationships in education into "purpose-means" similar to the natural science style. In addition, instrumental education turns a person with characteristics into a person without characteristics. Hence, the educated individuals passively accept the inculcation of knowledge. Such kind of education has exogenous, compulsory, and separate characteristics, and it does not align with the experience within and outside the state. Hence, students lack proper living vitality and charm, which they ought to have. The effects of education start with the alienation of human reason, emotion, will, and need. The present system promotes a rational and light feeling, attention to knowledge, light perception, heavy memorization, and ethereal nature. Consequently, life's wisdom degenerates into the survival instinct and transcendence of life, whereas creativity and reflection are set aside. Educational practice dominated by instrumental rationality is a form of isolation in human life. It deprives the individual of the ability to develop life and the right to create it. Jaspers has expressed that this kind of education is "king of spiritual isolation activities;" however, it does not meet with the realm of "spiritual fit." Emotion is the soul of classroom teaching, and there will be no emotion unless there is communication. In turn, if there is no communication, there will be no classroom management. Indoctrination of classroom management must be based on the premise of emotions between teachers and students. The approach should get rid of cold elements of classroom management so that students in the "pro-his teacher" environment will act like those in "the letter of its road."

3.2 Open Management: Transformation of Indoctrination of Classroom Management

The actual teaching process is a gradual, multi-level, and multi-angle yet nonlinear sequence, which promotes the process of dynamic interaction between teachers and students. There are several limiting factors involved in classroom management. First of all, what classroom teacher's face are living individuals, and each individual is uncertain. Moreover, there are many uncertain and

unanticipated events in the process of classroom teaching, which require us not to use uncertain management methods to control and suppress those uncertain events. In a sense, the teaching process is a special living process among students. The diverse life that students live will lead to different developments later on. Therefore, classroom teaching is in changeable state, which requires teachers to adjust the subsequent instructional design according to the resources generated and produced by a series of unexpected changes. Using open management style can form a new teaching process to better achieve teaching objectives and promote students' physical and mental development.

3.3 Chaotic Management Style: The Key to Indoctrination of Classroom Management

Traditional classroom management pertains to the way a teacher monitors and controls students. As such, the aim of classroom management is to exclude all kinds of interference as much as possible, and eliminate all forms of noise to ensure a smooth teaching process. Indeed, in the said context, the whole classroom teaching performs within the scope of certain laws and a set of procedures. However, classroom management is a complex system with a great deal of uncertainty. In the management perspective, chaos and order in the classroom teaching process are naturally present. The seemingly "orderly condition" in the classroom organization is filled with all kinds of confusion. All types of "disorder" factors disturb the normal flow of teaching and generate a new order at the same time. In fact, it is the reasonable interaction between "order" and "disorder" that constitutes a form of classroom organization.

Therefore, classroom management should no longer have a teacher-centered, centralized, and command-style control structure. In contrast, classroom management should search for order from disorder. This approach to classroom management should emphasize the combination of external management and internal management, and of centralized management and democratic management.

4 Conclusion

From the above discussion, we can see that the traditional classroom management and the indoctrination of classroom management are two kinds of value management from the classroom management. Traditional classroom management is the machine as to taking knowledge. As the starting point of respecting students' differences, indoctrination of classroom management is new type of management concept, which is as a background of free education ideas and let classroom give the vigor of life. Certainly, with many uncertainty factors, classroom management is a complex management system, that is, to have advanced education management concept and management system to support, so that they can come close to teaching and improve the students' personality and academic progress.

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Practical Education Innovation in the Hydraulic Transmission Education

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Abstract. Hydraulic Transmission course is of great importance in its practical application, but the existing lab experiment class can not able the students to meet the requirement of production practice. A research shows that most students only have preliminary knowledge about Hydraulic Transmission, which is not enough for the demand of design independently.Based on traditional lab experiment education and the education innovation of QAU, this thesis systematically explained the innovation of practical hydraulic transmission education, which includes cognitive practical part, which, with the aid of experienced teachers' systematic explanation of design, help students to obtain clear knowledge about design process through teachers , practical experiment part, which is aimed to encourage students to practice more and research application part, which help students enjoy their achievement and cultivate their interest on this course. It has been fully proved that students can master hydraulic knowledge efficiently if the above three part was added.

Keywords: Hydraulic Transmission, Practical Education, Practical Experiment, Research Application.

1 Introduction

Hydraulic Transmission is an important course of specialized skill for Mechanical and electrical majors in higher school. It' focus is to introduce students to the basic knowledge and basic theory of hydraulic transmission, cultivate students choose hydraulic components and analysis, design of hydraulic drive system ability. Hydraulic transmission belong to technology course, usually, the basic mechanical equipment is commonly composed of power device, gearing device, work actuating device and control operation device. Transmission device has mechanical transmission, power transmission, hydraulic transmission, pneumatic transmission or their combination. Hydraulic transmission is a transmission form, such as mechanical transmission, power and pneumatic transmission, and it is essential technology and knowledge in the mechanical equipment designed, used and maintenance must grasp to.

It's of great importance to help students to fully acquire the basic knowledge of hydraulic transmission, power and pneumatic transmission; to firmly master the working principle, application, and select way of various hydraulic transmission

L. Zhang and C. Zhang (Eds.): Engineering Education and Management, LNEE 112, pp. 161–165.
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components; to better learn the application, composition of mesh circuit as well as its suitable occasion; to completely understand the application of advanced technology in mechanism at home and abroad. Systematical learn of this course will certainly improve the students' basic ability of analysing and designing hydraulic transmission system and help them to use this technology flexibly.

2 Current Situation of Practical Teaching Method in Hydraulic Transmission Education

Nowadays, demonstrative experiment of basic hydraulic mesh circuit is widely employed by most of the advanced colleges to help students to understand the characteristic of pressure and rate of flow. Experiment classes provide the conditions for students to understand the structure, working principle and capability feature of hydraulic components, and to improve there practical ability of deign, assembly and test of hydraulic mesh circuit. Thus their ability of hydraulic components testing and disassembling will be greatly improved. Besides, students can completely understand the function, principle and signal processing of various transmission in computer-aided test, control and loading system, which helps students to lay foundations for their further career in the field after graduation. Science-oriented colleges aim to help students to learn more knowledge and do more experiments of this technology, but time is surely not sufficient for this goal, thus students feel heavy stress caused by shortage of related knowledge after graduation. In the year 2010, a survey in large companies including WUZHENG GROUP, JINYI GROUP and TEZHENGTI company shows the current situation as below:

(1) Little related knowledge and know little about design:16.21%;
(2) Have relate knowledge but not sufficient in practice and need to learn more:73.17%;
(3) Have overall related knowledge do not need to learn or just need a brief review and acquired knowledge is enough for design:6.31%;
(4) Have firm knowledge and do not need to learn and their designs are almost same with overseas products:1.01%.

The survey shows the gap of Hydraulic Transmission Education in our country is extremely big, especially for most designers, their acquired knowledge is not sufficient for their work. A deep communication with head engineer shows that the most students are not professional in hydraulic technology and need long-term learn to be qualified in related designing work. Thus it is of urgent significance to reform existing hydraulic transmission education method.

3 Reformation Exploration of Practical Education

The application of hydraulic transmission requires long-term practical experience. Therefore, the transformation from traditional teaching method to an innovational, specialized and design-oriented education mode can ensure the initiative spirit of

the students in experiment class. Thus they can try to carry out their own design and make full use of their imagination and creativity. In this brand-new education mode, teachers act as supervisors to offer good environment for experiment class and encourage students to follow their own design and improve their designing ability. With all the efforts above, the application of hydraulic technology will be widely available. The new education mode is actually a "step by step" teaching method including "cognitive part", "practice part" and "application part".

3.1 Cognitive Part

Getting rid of traditional "duck-stuffing" type of teaching is necessary for the improvement of students' positivity. Take the hydraumatic-powered bait-casting machine for example; our college employed the new teaching method in its explanation.

(1) List out the target design and technical requirements, then divide students into several group to work for the new design assignment including research for the program, drawing design draft, calculating for each detail and shaping out each component.
(2) Teachers explain the technical problem based on their analysis of the student's program and then show out students the original design.
(3) Explain the original design in detail, including technical parameters, advantage and disadvantage as well as expense.
(4) Highlight the existing problem in component-assembly and pre-application, including the design process, measures for oil leak, etc.

3.2 Practice Part

It is an important part to improve the students' practical ability: the process is as below:

(1) Divide the students into several group of 3-5 and each group takes charge of one design assignment. Based on my several teaching experience, most of the students' designs are not suitable for practical production, but in order to encourage them to do more and better we should affirm the reasonable parts in their design.
(2) We negotiate about the program, calculate the design detail and do marketing research based on students' target design goal. Except for certain components we need to buy, most can be fond in our lab.
(3) Assembling and testing: students are responsible to take note of all the problems happened in design and their measures for each problem, thus students can learn more in the following technical exchange among groups.
(4) Analysis about pressure and rate of flow: pressure gauge and flow meter are added in the design of hydraulic system, which can help us to find the reason for error. Thus students can deeply understand the difference between theory and practice.

(5) Technical summary and exchange. The exchange and explanation among groups not only help students to learn from other groups but also offer direct reference for their future work.
(6) For those who do excellently in design, we will encourage them to take part in college design mach or higher-level mach to improve themselves.

3.3 Application Part

The ultimate aim of research and design is application. The establishment of student-assistance group is necessary for this aim. Students in the group can assistant their supervisors in the research and design and learn from practical experience. The author is the host of one social welfare research program (agricultural branch) named "Comprehensive Technical Improvement of Root-crop-harvester" which is made up of two design groups. College students only obtain little theory in this field, no mention practical experience, but under the aid of post-grads and their supervisors, they can do much basic work and grow step by step. Therefore, experience-oriented education mode will cultivate both enthusiasm and practical ability in college students.

4 The Analysis of Application Results

Hydraulic transmission course will begin in the fifth semester, case analysis, cognitive experiment and research experience will follow class explanation. In the recent three 3 years, after systematical training, those junior students who took part in Mechanical and Electrical Products Innovation Design Competition in Shandong Province got amazing result, including 12 top prize, 30 second prize and 18 third prize. Such excellent result shows that our college has made great progress in comprehensive ability.

Some students take part in student-association group and get many chances to attend research program and improve their academic and practical ability. A new survey in April 2011 shows the result as below:

(1) Little related knowledge and know little about design: 15.21%
(2) Have related knowledge but not sufficient in practice and need to learn more: 52.58%
(3) Have overall related knowledge do not need to learn or just need a brief review and acquired knowledge is enough for design: 26.31%
(4) Have firm knowledge and do not need to learn and their designs are almost same with overseas products: 0.97%

Compared with previous survey, we can find that the rate of item 2 has deduced while the rate of those who have overall related knowledge has increased greatly. So the three-part educational practice has achieved good result.

5 Summary

Hydraulic Transmission Technology is a basic course which is aimed to its application in production. The education reformation mentioned above gave up traditional teacher-oriented method and employed modern student-oriented method. Thus students can learn more about Hydraulic Transmission Technology from their practice. This reformation is based on cognitive practice and centered on students' practice. After long-term application of the modern teaching method, and with the help of comprehensive efforts, more and more excellent and qualified graduates will be available for the requirements of this time.

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A Study on the Way of Case Teaching Promoting the Qualification of Teacher Team in Newly Established Majors

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Abstract. The implementing programs of case teaching will form an "inertial force" coming from the triple play of "promotion + pressure + motivation" which can increase teachers' competitive edge quickly. While case teaching has not been given due recognition in teaching practice in many schools with newly established majors. This study shows it is chiefly because of lack of high-quality cases, teachers' low inducements and capability to implement case teaching, and absence of perfect incentive mechanism on case teaching in most schools. Some guarantee measures on case teaching in newly established majors are proposed. Firstly, we should improve understanding on the meaning of case teaching and attach great importance to selection and training of new teachers. Secondly high schools can create and perfect incentive mechanism on case teaching, and make joint efforts to establish good cases sharing mechanism among colleges with newly established majors.

Keywords: Case Teaching, Newly established Majors, Promotion of teachers' qualification.

1 Introduction

It is apparently that case teaching can improve teachers' quality. The effects of case teaching are influenced by many factors, and many new majors have not paid much attention on it. Many researchers have studied the implementation and measures of case teaching, but the searching and collection of the cases have been neglected. Researches about the meaning and function of case teaching put few emphases on the case teaching's function of promoting the qualification of teacher team.

2 The Mechanism of Case Teaching Promoting Teachers' Quality in Newly Established Majors

The implementing programs of case teaching will form an "inertial force" coming from the triple play of "promotion + pressure + motivation" which can increase teachers' competitive edge quickly. This mechanism can be explained as followings:

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2.1 The Searching, Making and Upgrading of Cases Are Promotion Force on Professional Teachers' Quality

Most new majors are short of mature teaching cases. At the same time many imported foreign cases have the problems of inadequate adaptation and poor effects on teaching, so teachers need to work on searching, making and updating of cases. This work further asks high for teacher's close relationship with industries. The deep understanding of industries will help teachers to grasp and understand the professional knowledge better and faster. Also this process gives teachers an in-depth insight into the industries' requirements on professional capabilities of students and making clear the talent training standards so that they can organize teaching contents in classes better and choose more reasonable teaching methods.

2.2 The Organization and Teaching of Cases Are Pressures on Promotion of Teacher's Quality

Compared with traditional teaching methods, case teaching asks higher for teacher's capabilities in teaching design and teaching method. Firstly, the cases selected should be relevant, targeted, timely, conflicting and inclusive. Secondly, the questions should be worthy of thinking, discussing and enlightening. Lastly, the organization and teaching should be instructive, directive, focusing and illuminating. All of these require the teachers have competent knowledge of theory as well as rich practice. The updating of the contents and teaching plans also request the teachers' impact on the changing situation of society and economy and be sensitive to hot topics. So teachers must endeavor to improve their teaching qualities.

2.3 The Research on Cases and Transformation of these Research Achievements Are Driving Force on Promotion of Teacher's Quality

Teaching has close relationship with research in the same field. If the professional teachers can do deep research on the gathering cases with related theories after normal case teaching and make an extractive process of laws of these cases, they will improve their research level. By getting the approval from cases origination, teachers can summarize them to papers or apply for patent protection which will help teachers in their promotion of titles. Further on, if they can make references by giving the case origin especially the enterprises and governments some reasonable suggestions according to their research, they will get additional payment and which will build on long term coordinating relationship with them.

2.4 The Unity of Promotion Force, Pressure and Driving Force Will Form an Inertial Force on Promotion of Teachers' Quality

The complete implementation of the project of "searching and making—organization and teaching—research and transformation" will form an inertial force on promotion of teachers' quality. Firstly, teachers can promote teaching qualification benefit from deep understanding of industries after the project, which can also help teachers who have switched to the majors and short of professional background and related practice experience to overcome nervousness caused by lack of confidence. Secondly, the cost for case searching and making will greatly cut after the project if the suggestions based on case research are adopted and put into use. And more organizations would like to build on long term coordination relationship with teachers and provide more good cases. Lastly, with transformation of these research achievements successfully and more cases provided, teachers will make in-depth study and promote their teaching qualification naturally.

3 Restricting Factors of Case Teaching in Newly Established Majors

Case teaching has made great improvements since its importation into China in the 80s of 20th century. But it hasn't been implemented in many new majors, or just offered one case course in new majors. On the other hand, those implementing case teaching made little effects on teachers' qualification promotion. The mainly reasons are as follows:

3.1 The Scarce of High Quality Cases in New Majors

Nowadays, many new established majors are short of high quality cases which effects on the development of case teaching. The reasons can be presented below: firstly, the foreign cases imported in traditional way can not satisfy the need of teaching. Due to the difference in culture and actual conditions, it is hard for students to present the situation, so the simulation advantage of case teaching can not fully play its role. Secondly, the new majors are often established to feed the need of new emerged industry which has short history, so there are not enough cases. Thirdly, these majors are lack of support in searching cases. A lot of time and energy need to be devoted for an effective case. For example, in Harvard Business School, it cost 15-50 thousand dollars to search and make each case. While, basically there is not any college supporting in this job. Fourthly, some schools have loose relationship with industries which means a narrow channel getting excellent cases. Lastly, there is a lack of intellectual property protection for teaching cases and its hard to share of these resources. Some colleges keep the excellent cases to themselves.

3.2 Some Teachers have Insufficient Incentive and Capability to Implement Case Teaching

Case teaching asks high for teachers, while in new established majors, many teachers have insufficient incentive and capability to implement. On one hand, colleges establish new majors with teachers coming from colleges and research organizations with shortage experiences of industry practice. Many teachers switched to these majors need a certain time to grasp the professional knowledge due to lacking of education background and relevant practices. But the implementing of case teaching will be a hard job under the circumstances being short of high quality cases. On the other hand, many college teachers are accustomed to the traditional way of pumping some facts into students' heads and are not willing to burden the cost and risk of case teaching. They worry that the students are not suitable for this entirely new teaching method and so infect on teaching order which will influence the teaching process and realization of teaching goals due to the difficulties of tracking the process and effect of lessons. All these will lead to the teachers' lacking spirit, motivation, sense of crisis and urgency.

3.3 Case Teaching Are Lacking of Effective Motivation Mechanism

Firstly, the effect of case teaching is not easy to evaluate in short term, so there is nothing particular compelling about the implementing of case teaching in domestics majors including the newly established majors. Many new setting majors are scarce of capital support for searching and making cases and such jobs are not included in class load and performance evaluation. Also there is no guide for teachers' working in other units to find out the profession situation. Thirdly, according to the promotion system of profession title, teachers without achievements in scientific research will not get a promotion. And the jobs of making cases are not included in this system. Lastly, there are no property rights for teaching cases, and many teachers like to use the free cases and are not willing to devote much more time and energy in case searching and making.

4 Guarantee Measures on Case Teaching in Newly Established Majors

4.1 Attach Great Importance to Selection and Training of New Teachers

In the process of selection of teachers for new setting major, practical experience should be attached especially importance except for academic title, age, school record and educational background of candidates. Make sure that teachers having practical experience. Firstly, lower requirements on academic title and school

record for candidates having rich practical experience should be allowed for. Secondly, business managers suitable for teaching with rich experience can be appointed as guest professors. Finally, teachers' practices like investigation, giving lectures, offering consultation service in enterprises should be encouraged and training program concerning case teaching can be organized. This will help to form knowledge spillover mechanism.

4.2 Create and Perfect Incentive Mechanism on Case Teaching

High schools having new setting majors should increase capital input on case teaching since it play an important role on teachers' qualification promotion. Firstly, capital support should be given to case searching, making and upgrading. Secondly, teachers' practices like investigation, giving lectures, offering consultation service in enterprises can be converted to work load of teaching or research in the performance evaluation system if suitable cases generated as a result after that.

4.3 Make Joint Efforts to Establish Good Cases Sharing Mechanism among Colleges

Colleges should make joint efforts to establish good cases sharing mechanism. Firstly, a case teaching committee among high schools having same majors can be constituted which can lay down a unified rule on the requirements and standards of cases making to regulate programs such as designation, writing, upgrading, management of teaching cases. It can also organize its members to discuss the problems concerning cases teaching at stated times. Secondly, a special cases teaching fund can be set up by these schools to support case making. Each member can take up the mission of making cases for different courses. Lastly, all the members can use the cases free supported by the special fund while non-members should compensate for their use.

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The Problems in the Course of China's Urbanization

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Abstract. Based on the China's specific circumstances, the paper analyzes the four Chinese urbanization problems existing in the development of our country respectively from the population,land,environment and system, the results indicate that the current urbanization face labor transfer huge and placement problem; Land urbanization faster than population urbanization obviously; In the process of urbanization of resource constraints and the deteriorating environment; The policy of the urban-rural barriers to the free flow of resources isn't fair. At present our urbanization development mainly depend on industrialization and the development of tertiary industry relative lag; The current household system exclude the most rural floating population from urban public service system , social security policy, education policy, employment policy and situation of urban-rural have no radical change.

Keywords: Urbanization, problems, China.

1 Introduction

History and experience prove that urbanization is the inevitable trend and objective requirement for China's economic and social development, Explore the measure of the urbanization level factors and grasp the present situation of the urbanization development is an important problem to be solved in the new period. We hope to find the restrict factor, thus for speeding up China's urbanization process .From the economic development level, China's provincial economic development is not balanced .The highest GDP guangdong for 3.948256 trillion yuan, and Tibet only 44.136 billion yuan, which is up to 3.90422 trillion yuan, the district difference of economic development level is very significant . In the past 30 years , the development of urbanization speed is growing every year. But the China's urbanization development level is relatively low .

2 The Population Problem in the Development of China's Urbanization

At present, China's agricultural labor accounted for 44.8% of total employment, and agricultural production value accounted for only 6% of GDP 12. However, higher status. The rural population per capita amount of resources low situation without fundamental ease. Farmers realized by reducing the rich farmers, solve the

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rural development the relationship between human strain of deep contradiction, need to be further transfer of agricultural labor force, can increase rural per capita occupancy resources According to the agriculture ministry estimates, China's need to transfer of the rural labor force in 1. About 500 million people every year, and 8 million rural labor transfer task for through the urbanization process to achieve[1].

Urban infrastructure and public service scope has no substantial extend and expand.The current the most rural household registration system of floating population in urban public service system exclusive outside the city and the city, between the floating population is also hard to enjoy equal live public services, the rural population average resources possession of the situation and didn't get fundamental change, urban public service scope and no substantial extend and expand, making the income gap between urban and rural area was enlarged [2].

3 The Land Problem in the Development of China's Urbanization

The urbanization is essentially population and land two levels of synchronous transformation process [3]. However, for a long time, the urbanization is in narrow sense magnifies the city (town) real estate industry development, the emergence of a land urbanization faster than population urbanization trend. And, in the process also appeared Luan Zhan cultivated land phenomenon. In recent years, China's urban development space out of control is serious, outstanding performance for the city with a kind of extensive way rapid spread, a large number of cultivated land occupied, caused a large number of land-lost farmers.

4 The Environmental Problems in the Development of China Urbanization

The formation and development of town and environmental conditions, the closely related development depends on good natural environment, and also deeply affect the natural environment. With the continuous improvement of the level of industrialization and the availability of resources, urban development and reduce camera the contradiction between the ecological environment capacity will be more acute. In the past half century, urbanization in our country's resources and environment foundation or consumption behavior have changed a lot. First of all, the town of land and water of the two resources directly takes up or consume the proportion is not high, but in human ecology system directly or indirectly induced material consumption under the law, the urbanization development to use the land resource occupy more than 20%, fresh water resources take up more than 30%. Second, although energy and mineral two kinds of resources development and the use only exist in point, line forms of space, but the resource consumption and 80% above all occurred in town system range.

From eastern China to see, a considerable number of small towns in the industrialization process, ignore the environmental protection, the town enterprise of "three wastes" problem didn't get appropriate treatment, town life within garbage and waste water, too, can't keep up in time. As for the western inland areas although township economy isn't very developed, but the urbanization lag to ecological environment impact also is not allow to neglect, our country 92% of township enterprises in natural village, 7% in distribution system in the county town, 1%. The open fancy, scattered throughout the development of township enterprises of enterprise performance layout is caused great trouble. Therefore, the urbanization material consumption demand for the country's resources and environment foundation under increasing pressure, population, economic and environmental resource problems of coordination is becoming more and more serious.

5 The Institutional Problem in the Development of China's Urbanization

Lack of coordination policy. The urbanization interregional In recent years, our country in policy regulation of the urbanization, a major problem is urbanization policy and local segmentation of charimas whose. Existing in many areas of the urbanization and the advancement of town construction on the way there, with administrative promote instead of the tendency of market promotion. the government administrative mechanism beyond the market mechanism, become the urbanization of the basic allocation of resources influence mechanism. Market investment and financing mechanism width and depth of the obvious deficiency, folk capital and foreign capital in the construction of urban and rural public enthusiasm is not high, urban and rural industry is mainly dependent on government fusion administrative policy, urban and rural resources market mechanism of the fusion of the leading position has not established [4].In the urbanization construction of main structure, the government behavior are often more important position, the enterprise and the active participation of urban and rural residents, especially the lack of rural residents has not really become main body of the urbanization. The government in the process of urbanization often heavy "city" and "city" light. In the current administrative system and the financial system, many of the urbanization process, is in fact the regional different scale, different levels of town with local government between as the main body of the construction of the scattered town process. Therefore, in a large area range, because each region urbanization policy formulation is from this area of his own benefit maximization, the lack of urbanization between regional policy coordination, the regional urban system of town unclear orientation, function identical and different types of town difficulty in forming the division of labor between effective cooperation relations, hard to improve the regional urban system of comprehensive benefits.

Of urban-rural policy barriers hinder the free flow of resources can not be fair Since the reform and opening, in order to promote rural urbanization in China, in the household registration system, labor system, the social security system

education system, carried out a series of change, promote the urban and rural integration, but hamper the development of urban and rural urbanization division policy barriers haven't breaking completely, urban and rural resources fair competition fully free flow and the macro environment conditions have not fully formed [5].the household registration system in urban and rural areas of interest to policy difference there is no fundamental change. Labor in the countryside and between the free flow and migration is the important condition of urbanization realize. Our country at present in some places, although the residents of urban and rural integration of registration system, but adhere to the household registration system of urban and rural differences on policy issues and interests don't get solved, social security policy, education policy, the employment policy and of urban-rural position has not changed at all.

The land property rights structure is unreasonable, land property rights market policy not perfect. Our current rural land property rights system is not perfect, it is a kind of half an independent model of property right system arrangement, farmers don't have the farmland property rights, completely sustainable farmland property rights free market have not established, especially farmland property right trading regulatory policy not established, farmers can't in farmland property rights transactions have all the market returns. This is caused by the middle peasants reality after requisition farmers become unemployed, no land, no guarantee of the new "3 without" personnel, after the completion of the town industrial support, and no be without transferring, logistics gathered shell of urban phenomenon of the most fundamental reasons.promoting urban and rural life style and cultural value of the fusion of policy needs to be further improved. The urbanization development, urban and rural industry is not only, more important is the integration of urban and rural life style and cultural values fusion. The current our country regions in the urbanization process of the main urban and rural industry attention is mixed development, especially the town industry development, and ignore urban and rural life style and cultural values fusion development. Therefore, in the policy, the government itself in town industry development, the contempt gathered urban and rural life style and cultural value of the fusion. Can say, a considerable number of areas in the urban and rural life style and cultural value on fusion without a strong policy support.

Of these problems, serious restricts the sustainable development of urbanization in our country. Our country government at all levels in the formulation of the urbanization policy must pay attention to the solution of the problems. From the height of the urban and rural harmonious development, formation of the market environment of fair competition, the realization urbanization development of natural regularity, market leading and the government policy of effective control of the organic unity. Attention should be paid to the integration of urban and rural economic and social basic theoretical research, including system obstacle, idea obstacle, resource allocation is not reasonable aggravating and widespread poor quality of urbanization, unbalanced development of region, layout is not rational, ignoring the city circle, extension type extension occupied land, land use too much especially farmland extensive and "small, loose, points"; Polarization cohesive and polarization effect town, not strong correlation with the poor, system mechanism

not, etc. Work to promote industrialization, urbanization and system reform. Solve the urban and rural economic integration of the lag of type, urban system structure non-equilibrium urban areas disequilibrium, layout, farmers are still in the weak position of practical problem. Improve the rural population quality in China's urbanization is first to solve the problem and the solution of the problem is the important basis of the rural and urban population to solve the quality problems of rural education gap, for agriculture and local economic development service training talents but not simple to a population of standards, and improve urbanization rate in the industry to improve the quality of the employees in countryside and for local economic development of the quality of the service personnel .

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The Study for Inter-organizational Cooperation Network of Public Services Supply

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Abstract. Inter-organizational cooperation web content too broad. This paper only focuses on a point of aspects of public cultural service system. Through investigation, the paper analyzes the network based on the organization of cooperation among organizations, both from within and outside of the organization. The network model for inter-organizational cooperation of public cultural service supply was constructed. It could assess efficiency and fairness for the inter-organizational cooperation network of public services supply, and solve public services supply policy and question in pluralistic society.

Keywords: Public Services, Network, Inter-organizational Cooperation.

1 Introduction

In the modern market economy, government, market players, the third sector and voluntary organizations have become the main supply of public services. In the public service supply reasonable position to further the role of different subjects, which to the best size and lowest cost to provide the most high-quality public services[1]. To meet the new situation, the Government must change the allocation of resources and control of long dominated the socio-economic development situation, to achieve the transformation to service-oriented government, strengthen the Government's sense of responsibility and sense of service, ease social conflicts emerging, to promote overall social harmony and sustainable development.[2]Which also includes the transformation of the field of culture, the existing supply of public cultural patterns can not meet the growing cultural needs of the people in the large number of foreign cultural products into the domestic market, the competitiveness of domestic cultural products was insufficient. Central proposed to build a reasonable structure, balanced development, network and improve service quality and benefit all the public cultural service system.[3][4] This paper focuses on building a public cultural service system of public service organizations to discuss cooperation between the network problems.

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2 Analysis of Inter-organizational Cooperation Network

2.1 Construction of Public Service Supply Network Model for Inter-organizational Cooperation

Public administration on the network's attention within and outside the organization based on organizational aspects.[4] Network within the organization between government departments at all levels of network cooperation, the main characteristics of this network is the authority, subordination, obedience; Hang Tau Tsuen out as a good central new policy, the village committee leaders from the city and then to implement the town Deployment of effective, cultural and sports park built, as the National Ecology and Culture Village, the local villagers made a good supply of public services. Organizations outside the network is between the government and non-governmental cooperation, trade, reciprocal relationships, it is the various actors based on trust, recognition of the long-term relationships formed, which is in an evolving interaction and promotion. Sand village because the villagers need, individual effort, the development of a market economy, the formation and development of the Dragon culture, but also for the villagers made a good supply of public services. Cooperation in these two areas are the supply of public services play an important role, outline a common supply of public services, network features.

Main supply can be divided into: the authority model, market model, self-governance. In reality the vertical relationship between the supply of public services, the existence of decision-making "top down" and the implementation of the "bottom up" two diametrically opposite directions and means. "Top down" means the network of organizations which emphasized cooperation between the Central Government for the supply of public services under the authority and obedience. Hang Tau Tsuen is the "top down" model. "Bottom up" approach inter-organizational cooperation is a grassroots network of organizations in the implementation of multiple actors to interact on a particular issue formed network of actors, including government agencies, the private sector, interest groups and community organizations. Sand village is the "bottom up" model. "Bottom up" approach emphasizes organizational network of grass-roots cooperation between the government or the importance of local executive bodies, with sufficient autonomy and discretion to deal with the increasingly diverse and complex environment of public affairs. Cooperation in public service supply network model, using different modes of service delivery will form a cooperation network between different organizations.

2.2 To Assess the Supply of Public Services, Inter-organizational Cooperation Network Efficiency and Fairness

As the public service has benefited from its externalities, monopoly and other economic characteristics of the supply, the market there may be a significant impact on the effectiveness of supply; public service special egalitarian principle that if certain products and services constitutes the social The public's basic needs, and

some public groups, is difficult to rely on their own ability to get from the market or bear the cost of their services, then, to ensure the enjoyment of such products and services to these vulnerable groups must be used as a basic right to treatment, Otherwise contrary to the rights of fairness. Therefore, special consideration to the following: 1. easy to create a monopoly supply of public services. 2. public service the basic needs of the strong. 3. the government more control of the supply of public services. 4. public service users ability to pay is low. 5. public service supply and demand information asymmetry. Public Service formed a network of cooperation between organizations, must take appropriate and distinctive public policies to improve supply efficiency, ensure the supply of equity.

3 Balance between Efficiency and Equity Cooperative Network of Organizations Supply Policy

3.1 Of the Procedures and Rules of Open, Transparent, Equitable

The government to withdraw the supply of certain public services, the introduction of market-oriented supply mode, the network formed by the process of inter-organizational cooperation, the following policy must be clear and open: the qualifications of the private body can enter? Into the process? Rights and obligations of those who entered what? Are all of the main conditions and given equal opportunities? The last is particularly important, otherwise easily lead to some potential suppliers of the policy of non discrimination, thus affecting the formation of diversified supply situation, also cause the supply of injustice.

3.2 To Ensure Cooperation and Competition between Different Organizations

Generally speaking, unless forced to, should try to avoid the formation of an exclusive supply situation; should not set too high the threshold of civil supply to ensure competition in the supply situation. In addition, the need for Government to determine the supply of the main project, the bidding mechanism should be introduced, bidding requirements and the process should be open and transparent in order to ensure competitive bidding process.

3.2.1 Scientific and Strict Supervision

Market supply of public goods inter-organizational cooperation network, to help overcome the supply of scientific supervision the evils of monopoly, **to** meet the basic needs of the user to ensure the efficiency and fairness of the supply. Regulatory policy should include appropriate control of the service price, quality of service monitoring, service content and service targets the implementation of the other.

3.2.2 The Public Supply and Private Supply of Complementary

Many regional public goods requires a wider range of public facilities necessary to function effectively. Such small-scale infrastructure in order to promote civil and improve its operating efficiency of the supply, the Government must plan and implement the backbone of a larger regional context of public facilities.

3.2.3 The Appropriate Supplier or Consumer Subsidies or Support

In both cases, the Government must be providers or consumers of public services to financial subsidies: When the supply of public services have certain external benefits, in order to achieve its optimal supply, the Government should be providers or consumers certain Subsidies. Market-oriented supply of public services, the organization of cooperation between network providers there is bound to cost recovery or even the pressure of the pursuit of investment returns, which, in the case of business investment fee system has become an inevitable, self-financing in the case of the user, the initial investment Sources of funding become necessary. In both cases, the user may be excluded from the poor benefit from public services outside the scope of which adversely affect the poor user. In order to maintain social justice, it is necessary to be certain groups of poor financial subsidies.

4 Conclusions

All in all, due to the different economics of public goods with different attributes, therefore, balance between efficiency and fairness of inter-organizational cooperation network for private supply of public goods policy, follow the premise of the policy elements of different public policies should be taken: (1) is difficult for the monopoly in the supply of public goods or infrastructure, should minimize government intervention in order to form a diversified supply of competitive situation, the Government should focus on technical support, information support and other ancillary support. (2) For the supply of natural monopolies, tend to form a monopoly or a scale with a supply of public goods, the supply mechanism for the introduction of civil society must also pay special attention to strengthen and improve the science of government price, quality monitoring system, on this basis in The introduction of market mechanisms in supply. (3) have some form of external or fundamental rights of users of public goods, such as basic health services, basic education, in strengthening the Government price and quality supervision, should be given adequate financial subsidies to consumers to eliminate the externality Or to protect the basic needs of poor users. (4) strong externalities or public goods, pure public goods, such as disease prevention services, may consider the outsourcing of government services the way, the formation of export-oriented inter-organizational cooperation network, the introduction of private supply mechanism, the main government and private supply Should exist between the detailed and strict project outsourcing agreement, the contractor of the determination process should be fair, transparent, outsourcing of implementation of the agreement should be strict supervision, and clear reward and punishment mechanism. Development organizations to establish a scientific cooperation between the networks.

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Study on the Entrepreneurship Education Reform in China's Universities

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Abstract. Entrepreneurship education is an exploring educational activity, which enables educatees to innovate, develop or expand in the socioeconomic, cultural and political fields, and also provide opportunities to others and the society. With the socio-economic development, industrial structure adjustment and the urbanization process accelerated, the pressure of unemployment is becoming increasing obvious. This has become a indisputable fact. Therefore, the reform and the implementation of entrepreneurship education in universities have become the main approach by which universities can train a large number of talents who owe the entrepreneurial spirit and entrepreneurial capacity, accelerate economic development and lower employment pressures. This paper starts from discussing the background and the meaning of carrying out entrepreneurship education in Chinese universities, then analyzes the current status of entrepreneurship education. Finally we discuss the countermeasures to carry out the entrepreneurship education in Chinese universities from the following aspects: setting up a corect entrepreneurial idea, improving the teachers' academic level, reforming a new training methods, setting up entrepreneurship centres, etc.

Keywords: Entrepreneurship education, University students, Entrepreneurial idea, Training methods reform, Entrepreneurship centres.

1 Introduction

With the development of the global economic integration and China's socialism market-oriented economy system, the traditional education has met a severe challenge. Especially after the higher education has been gradually heading for a popularized stage in our country, graduates of famous universities can hardly find suitable jobs. It has been a very prominent problem in our higher education. The experience of the education in developed countries tells us that it needs to develop entrepreneurship education and place emphasis on the entrepreneurial talents to solve the employment problem. Then the government has realized the important role that the entrepreneurship education has played in fostering the high-quality entrepreneurial talents, relieving the employment pressure and promoting the economic development.

Now, it is a major period of important strategic opportunities in Chinese modernization construction. Entrepreneurial activities have become the important source of economic vitality. Even the Report to the 17th National Congress of the

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Party puts forward the developing strategy "to stimulate and expand employment by encouraging business startup". University, as a social organization which takes seriously responsibility for knowledge dissemination and talents training, should meet the needs of entrepreneurial creative talents in the background of entrepreneurial economy. So promoting entrepreneurship education is especially significant in universities in this important historical stage.

2 The Current Status of Entrepreneurship Education

The research of entrepreneurship education in our country started relatively late from the early 1990s, and it is still at its early stage. The research is still in the transition from concepts analysis, origins discussion, and significance demonstration to the discussion of principles, means, paths and patterns of educational, pedagogical and practical system construction.Now, the main factors which restrain the development of entrepreneurship education in China include the followings:

First of all,there are some misunderstandings in entrepreneurship education. Many students, even some educators ofen confuse entrepreneurship education and careers education. Entrepreneurship and employment are different attitudes which exhibit studennts' different qualities and abilities. Traditional education is mainly based on enhancing the employability of graduates and helping students obtain many kinds of employment skills,while entrepreneurship education is mainly based on helping students master how to study and how to live. So entrepreneurship education plays a important role on the shaping process to the entrepreneurs and it is an effective way of enhancing the whole society's entrepreneurship.

Second, the university students in our country are facing with more and more serious pressure of employment, however the students graduated from universities depend on our country and society too much.They are lack of the pioneering, the initiative and innovation.Some of them have insufficient initiative spirit and poor enterprise abilities. All of these are the reasons that lead to our university students' low employment ability and entrepreneurial idea.

Third, the knowledge configuration is deficient and the teaching method is simplex. We must note that we still lack qualified entrepreneurship education teachers. Many teachers haven't practical experience, so they can hardly teach their student how to start a business. At the same time, the traditional teaching can not keep pace with the development of the market environment and can not meet the urgent need of innovative talents. So improving the teachers' academic level is very important and necessary.

Finally, educational resources are scarce and supporting system has not set up, the construction of campus culture and entrepreneurship education base are imperative in universities. As we all known, the university students' entrepreneurship success won't happen if without the necessary supporting systems, which including the government's policy support, entrepreneurship education support, financial support and incubator support. But many problems are still existing, mainly

including the lack of financial support, technical support, policy support, and opportunities for resource sharing. Therefore, we must set up entrepreneurship supporting system to help students obtain necessary capital, technology, managerial experiences, etc.

3 The Measures to Optimize the Entrepreneurship Education Quality

3.1 Reversing the Misunderstandings, Conceptualizing Entrepreneurship Education

Entrepreneurship education is a form of civic education, which has an impact on the individual's skills, beliefs and entrepreneurial activity. But sometimes these educational effects are shown with a delay, which is why some people misunderstands the role of entrepreneurship education. Soon entrepreneurship education should be raised to a central role of professional development, which in the future will result in the better practical realization of entrepreneurship education.

The phenomenon of entrepreneurship education needs to be conceptualized, and the theoretical foundation on which entrepreneurship education and its evaluation is built should be determined. We can establish how entrepreneurship and entrepreneurship education form a link to innovations. In order to develop innovativeness, more attention should be paid not only to entrepreneurship education but also evaluation related to it, and also to how it is carried out and by whom. This requires opening a new dialogue on evaluation among both researchers and education policy decision-makers.

3.2 Setting Up a Corect Entrepreneurial Idea and Social Responsibility in University Students

Universities' teachers should go in for entrepreneurial idea education, reserve students' traditional employment idea. At present, many students consider employment as they needing a employer. They only do the job which the employers provide them and the employers want them to do. They don't have the entrepreneurial idea. Entrepreneurship education encourages students to set up a own company in which they can do whatever they specialize in and allows all students to learn and develop in a way that meets their needs and develops skills for learning, skills for life and skills for work.

On the other hand,entrepreneurship education can help graduates to establish a correct concept of social responsibility. The contribution entrepreneurship education makes to the personal growth of young people can enhance their life chances and choices. It also can help them to become successful learners, confident individuals, responsible citizens and effective contributors to society and at work, with a clear understanding of their roles in the world.

3.3 Taking an Enterprising Approach, Improving the Teachers' Academic Level

A teacher's practical experience determines his(or her) students' standard of entrepreneurial abilities. So in universities, the entrepreneurship education's teachers should have the abilities as the following:

First of all, they must own the abilities to provide opportunities for students to think and act in enterprising ways, then provide a clear focus on core and employability skills. Secondly, they must own the practical experience and can provide opportunities for work-related experiences, both in and out of the classroom. Third, they can adopt an enterprising approach to learning and teaching, provide opportunities for students to develop skills such as problem solving, decision making and evaluating risks. Finally, they should know the entrepreneurial process well and learn more about the entrepreneurship policy.Only the entrepreneurship education's teachers master the skills, can they train excellent entrepreneurs. So teachers must improve their academic level and practice ability, such as management, marketing, finance and so on. The experiences are very important for the students to learn.

3.4 Reforming a New Training Methods, Offering Related Courses

Entrepreneurship is a complicated process. It involves many knowleges, such as enterprise management, marketing, human resource management, accounting, economical law and so on. Universities can adopt an Entrepreneurial Skills and Knowledge Acquisition model which focus specifically on enhancing the students' entrepreneurial knowledge and skills. A secondary drive inherent in this model aims at facilitating commercialisation of ideas and innovative approaches to entrepreneurship, including the provision of incubator facilities for entrepreneurial students. Business incubators aims to provide training for students in terms of how to set up, start and run a new business. Interestingly, this model is also meant to attract funding opportunities and consultancy support and/or advice from venture capitalists.

At the same time, we can reform the traditional training methods and set up a new evaluation system to examin the students. The system for students involvs three main aspects: attendance rates, group discussions and the completion of a business plan. From the beginning, it is required that students attend all the correlative courses. During the courses, the assisting student will record students' attendance. To encourage active student involvement and interaction, group discussions are also marked. In each class, the lecturer will organise some group exercises, observe student involvement in discussions and keep a record of his/her contribution. The final assessment is a group assignment on completion of a business plan, marks cumulatively from the beginning of the course. At the beginning of the course, students are asked to form groups of up to three individuals. At the end of the fourth week, each group is required to submit their business plan proposal, and

students are asked to conduct market research under the supervision of their lecturers. The business plan must be completed before the eighteenth week and the final group presentation will be conducted during the last week, in front of a panel.

The assessment of lecturers involves mainly the critical evaluation of the feedback provided by participating students. This helps teachers establish how students relate to the programme in terms of content and teaching methods, and facilitate improvement where appropriate. There are two types of feedback designed to evaluate the delivery of lectures: one involves feedback at the end of each class, and the other is the final evaluation collected at the end of the module. At the end of each class, a feedback form is given to students to be completed in class and collected by student representatives.

3.5 Setting Up Entrepreneurship Centres, Increasing Entrepreneurship Experience

Entrepreneurship centre is a place for university students to learn and practise entrepreneurship. One of the main goals of it is to inspire students to find out the entrepreneurial opportunity and to equip them with the knowledge, ability and understanding then require to build the businesses of tomorrow. This is a critical component of universities' drive to develop a new generation of enterprising students. On the other hand, entrepreneurship centre can reduce the undertaking risk and the cost of the undertaking enterprise, enhances the survival rate and the successful ratio of the enterprise by the ways of providing research, production, management location, communication and work sharing facility, providing system training and the consultation, policy, financing, law and market introduction support. Some famous universities have set up their own entrepreneurship centres to improve the students entrepreneurship abilities. The role of these centres has appeared obviously.

4 Summary

As competition is the main characteristic of market economy, it demands a large number of talents to improve Chinese nation's competitive power. Therefore the duty of China's universities was no longer simple to negatively fill the demands of the talent market, but to act more positively and actively to adapt to the changes in the macroeconomic situation in China and foster the talents who have the spirit of innovation and entrepreneurial skill. The graduates will create careers in stead of finding jobs, which is the demand of time and inevitable trend of social development.

In conclusion, China's universities must have institutional innovation as premise, have knowledge and technology innovation as power, solve key problems of social development as responsibility, and cultivate a large number of entrepreneurs as objective. Universities should through curricular integration, knowledge capitalization, and their own implementation of entrepreneurship to construct entrepreneurial universities, gain the market recognition and realize the dreams of entrepreneurial universities.

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Re-ranking of High-Impact AI Journals Based on H-Index

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Abstract. This study presents a ranking of top 50 high-impacted journals in the field of artificial intelligence (AI) based on an original and simple new measure-h-index, with a comparison of the journal ranking by JIF. The divergence of the two journal ranking has been traced and analyzed. Several excellent journals considering both aspects of JIF and h-index have been detected. Some "underlying" notable journals with a modest or even low JIF have been awarded for their high h-index and their remarkable contribution to the most influential AI publications. The suggested ranking list of AI journals may provide interesting information for AI researchers making submission decisions and for librarians making subscription decisions, as well as for the funding agencies and university administrations to evaluate the applicants, and finally in general, help researchers to retrieve the most interesting and credible academic information.

Keywords: Artificial intelligence, Journal Ranking, Journal Impact factor, H-index.

1 Introduction

Since its birth in 1950s, artificial intelligence (AI) has evolved into a well-established scientific discipline. Along with the increasing number of academic journals appearing in AI field, the problems arise that how to compare these journals, and how AI researchers choose the appropriate journals for their publications and literatures retrieval. Therefore, gaining insight into the journals relative standing in the field has become a persistent quest for AI scholars.

Among others, journal citation impact factor (JIF) is one of the most widely used bibliometric tools. Besides its application for ranking journals, the promotion committees and funding agencies have also taken JIF as an available assessment of the quality of scientists or institutions.

The source data of JIF is annually computed and published in Journal Citation Report (JCR) by ISI, Thomson Reuters (Philadelphia, PA, USA). It's calculated as: the number of citations of articles published in years y-1 and y-2 in the journal, which appeared in articles published in year y are divided by the number of "citable documents" published in the journal in years y-1 and y-2.

L. Zhang and C. Zhang (Eds.): Engineering Education and Management, LNEE 112, pp. 191–197.
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H-index was introduced by Jorge Hirsch, a physicist in the University of California, USA, in 2005[1]. When Jorge Hirsch proposed his new "index to quantify an individual's scientific input", he did probably not even guess that he had launched a new research direction in informetrics and scientometrics. A scientist has index *h* if *h* of his or her papers have at least *h* citations each and his/her other papers have no more than *h* citations each. According to its definition, the indicator considers both the actual scientific productivity and the scientific impact of a scientist. The *h-index* has become so popular that it is included as one of the standard indicators in two of the most word-wide influential citation database: Thomson Reuters' Web of Science and Elsevier's Scopus less than two years after its formulation. Although the *h-index* was originally designed for the assessment of the performance of individual researchers, its application has very soon been extended to the meso level. Among others, Braun, et al. [2] proposed the application of the *h-index* to the evaluation of journals impact which is considered to be a robust supplement to the ISI Impact Factor. Since JIF is problematic when used for evaluation purposes[3], *h-index* and its variants have been extensively applied in the journal-level [4].

The purpose of this study is not to develop a comprehensive ranking of journals in the AI field, but to focus on the h-performance of the high-impact AI journals, and to gain a new ranking of these journals with comparison of the journal ranking based on JIF. Furthermore, we will also find out in which journals the highest cited papers and the most interesting topics are published in the AI field.

2 Data and Methods

ISI Journal Citation Report (JCR) is substantially used to evaluate the most important academic journals worldwide. JCR classifies all the academic journals into 172 subject categories. There are in total 103 journals listed in the category of "Computer science, Artificial intelligence" in JCR 2009, and the top 50 journals with the highest 2-year JIF are taken into consideration in the current study.

The journal h-index is calculated as follows: "Retrieve all source items of a given journal from a given year and sorting them by the number of times cited, find the highest rank number which is still lower than the corresponding times cited value. This is exactly the h-index of the journal for the given year."

According to its definition, the h-index could put new comers at a disadvantage since it does not consider the age of each article. Both publication output and observed citations of young journals are relatively low compared to the journals with longevity. To avoid such possible bias and also to obtain a relatively long-term citation window, we calculated the h-index for each journal in the period of 2004-2008, and the citation window was set up to the date of data retrieval (10, April, 2011). The journal impact factor in JCR (2009) and the according journal ranking was used as the comparable data.

3 Results

3.1 Ranking of High-Impact AT Journals Based on H-Index

The ranking result of top 50 high-impact AI journals based on *h-index* (2004-2008), together with the ranking list on basis of their JIF (2009) are presented in Table 1. Notable cases where the two ranking lists diverge could be observed. Several intersting cases immediately strike the eye:

- *Computational Intelligence* (*Comput Intell*) which ranks #1 in the JIF ranking list, falls into the lowest group (# 45) in the *h-index* ranking.
- *Journal of Web Semantics* (*J Web Semant*) which is among the top 5 journals with highest JIF, has a much lower standing (#39) based on it's *h-index.*
- *Ieee Transactions on Image Processing(Ieee T Image Process)* and *Ieee Transactions on Neural Networks (Ieee T Neural Networ)* respectively rise from #17 and #16 in the JIF ranking into the top 3 journals in the h-index ranking.
- *Neurocomputing* is among journals with lowest JIF (#47), however, has a much better position (#16) in the *h-index* ranking.

There are several reasons for this divergence. Firstly, individual highly cited papers could heavily influence the JIF value, which is a key disadvantage of the JIF. A very high JIF may be inflated by an extremely highly-cited paper. Secondly, number of publications in a journal limits its *h-index*. It's difficult for journals with a small number of publications to achieve a high *h-index*. This happens in *Computational Intelligence* (*Comput Intell*) and some other journals with high JIF but low *h-index*, for instance, *Journal of Web Semantics* (*J Web Semant*) with only 88 publications, and *International Journal of Neural Systems* (*Int J Neural Syst*) with 168 publications during 2004-2008. On the contrary, a journal which publishes a larger number of papers has higher oppertunity to generate a higher *h-index* since each publication presents a chance for inclusion in the h-core, for instance, *Ieee Transactions on Image Processing* (*Ieee T Image Process*) has published 1142 papers in 2004-2008, among which 57 publications have received at least 57 citations each. Thus, it rises from #17 (in the JIF ranking list) to #2 (in the *h-index* ranking list). Thirdly, the 2-year citation window of the JIF rewards journals with a high immedicay index, while the *h-index* takes more consideration into a relatively long-term citation impact. Finally, the JIF is affected by calculation inconsistencies as in the numerator all citations to all types of publications are counted, and in the denominator only the number of the so-called "citable items" is considered.

JIF is generally considered as the indicator of measuring a journal's impact, as it reflects the mean citation rate of the publications in a journal. However, a journal that publishes a larger number of high-impact papers also has a strong impact in the field [5]. The *h-index* and it's ranking list appropriately identifies the journal's more substantial contribution to the field in question. For example, *Ieee T Image Process* and *Ieee T Neural Networ* which are ranked among the top 3 journals in the *h-index* ranking list, though both of them are not notable for their JIF, have distinctly broader impact in the field of artificial intelligence.

Table 1. Ranking list of top 50 high-impacted AI journals

Journal	H-index 2004-2008 Score	Rank	JIF 2009 Score	Rank	Publications 2004-2008	Journal	H-index 2004-2008 Score	Rank	JIF 2009 Score	Rank	Publications 2004-2008
IEEE T PATTERN ANAL	73	1	4.378	3	904	DATA KNOWL ENG	24	26	1.745	38	447
IEEE T IMAGE PROCESS	57	2	2.848	17	1142	INT J APPROX REASON	23	27	2.090	30	356
INT J COMPUT VISION	45	3	3.508	4	414	J ARTIF INTELL RES	23	27	1.981	33	232
IEEE T NEURAL NETWOR	45	3	2.889	16	820	J MATH IMAGING VIS	23	27	1.437	48	264
IEEE T EVOLUT COMPUT	43	5	4.589	2	247	ARTIF INTELL MED	22	30	1.645	42	280
IEEE T SYST MAN CY B	43	5	3.007	11	794	ENG APPL ARTIF INTEL	22	30	1.444	46	483
PATTERN RECOGN	42	7	2.554	21	1467	APPL SOFT COMPUT	21	32	2.415	22	417
IEEE T FUZZY SYST	40	8	3.343	6	431	DATA MIN KNOWL DISC	19	33	2.950	13	136
J MACH LEARN RES	40	8	2.789	18	439	EVOL COMPUT	18	34	3.103	8	108
IEEE T KNOWL DATA EN	40	8	2.285	24	650	AUTON AGENT MULTI-AG	18	34	1.510	44	124
NEURAL NETWORKS	37	11	1.879	37	619	COMPUT LINGUIST	17	36	2.212	25	176
EXPERT SYST APPL	36	12	2.908	15	1192	KNOWL INF SYST	17	36	2.211	27	238
NEURAL COMPUT	36	12	2.175	28	564	ADV ENG INFORM	17	36	1.730	39	179
MED IMAGE ANAL	33	14	3.093	9	264	J WEB SEMANT	15	39	3.412	5	88
CHEMOMETR INTELL LAB	30	15	2.111	29	574	ARTIF LIFE	15	39	1.960	34	149
ARTIF INTELL	28	16	3.036	10	333	INFORM FUSION	14	41	2.212	26	123
DECIS SUPPORT SYST	28	16	2.622	19	647	J AUTOM REASONING	14	41	1.926	35	148
COMPUT VIS IMAGE UND	28	16	1.676	40	391	ADAPT BEHAV	14	41	1.911	36	131
IMAGE VISION COMPUT	28	16	1.474	45	668	NETWORK-COMP NEURAL	14	41	1.536	43	91
NEUROCOMPUTING	28	16	1.440	47	1546	COMPUT INTELL	13	45	5.378	1	114
INT J INNOV COMPUT I	27	21	2.932	14	614	INT J NEURAL SYST	13	45	2.988	12	168
IEEE INTELL SYST	26	22	3.144	7	554	IEEE COMPUT INTELL M	13	45	2.622	20	101
IEEE T SYST MAN CY C	26	22	2.016	32	385	INTEGR COMPUT-AID E	11	48	2.042	31	138
MACH LEARN	26	22	1.663	41	250	INT J SEMANT WEB INF	7	49	2.345	23	48
ROBOT AUTON SYST	25	25	1.361	50	440	ACM T AUTON ADAP SYS	6	50	1.364	49	25

3.2 H-Core Analysis of Top AI Journals

Banks (2006) defined the *h-index* for (scientific) topics and compounds to facilitate the detection of "hot" topics in different research area [6]. According to this definition, we calculated the *h-index* of all the publications in the top 50 AI journals. There are in total 21113 papers published in these 50 journals during 2004-2008. When descending the citation counts of all the 21113 papers, there are 123 publications which has received at least 123 citations each. Therefore, the h-index of the publication set under study is 123. These 123 papers could be considered as the most impacted publications in the AI field (2004-2008), and they are also normally called as "*h-core*" publications.

When taking a deeper look into the *h-core* publication set, we found a rather concentrated distribution of journal sources. 83 papers, namely, two thirds of the 123 *h-core* papers were published in five journals (see Table 2). The left 40 *h-core*

publications are distributed in 16 journals, and there are 29 journals without any *h-core* paper. The top 5 journals with most *h-core* publications in table 2 are all leading journals in the *h-index* ranking. It's quite surprising that *Computational Intelligence (Comput Intell)*, which is the journal with highest JIF, does not have any *h-core* publications. The same applies to another high-JIF journal *Journal of Web Semantics* (#5 in the JIF ranking list).

Table 2. Top 5 journal sources of *h-core* publications in AI

Journal	H-index rank #	JIR rank #	Number of "h-core" paper
IEEE T PATTERN ANAL	1	3	29
INT J COMPUT VISION	3	4	15
J MACH LEARN RES	8	18	14
IEEE T IMAGE PROCESS	2	17	13
IEEE T EVOLUT COMPUT	5	2	12

3.3 Where Are the TOP-Papers Published?

JIF is normally used as a shorthand assessment of the quality of individual researchers' output, however, JIF is not representative of citation rate nor the quality of individual publications. Table 3 lists the top 10 highly cited publications in the 50 high-impacted AI journals in 2004-2008. Again, the distribution is quite concentrated: three papers were published in *International Journal of Computer Vision(Int J Comput Vision*), and three papers were found in *Ieee Transactions on Pattern Analysis And Machine Intelligence* (*Ieee T Pattern Anal*), another two in *Ieee Transactions on Image Processing* (*Ieee T Image Process*), and finally two respectively in *Journal of Machine Learning Research* (*J Mach Learn Res*) and *Ieee Transactions on Knowledge And Data Engineering* (*Ieee T Knowl Data En*). It's quite interesting that all the five journals with most influential papers are among the top ten journals in h-index ranking, however, three of them are only with a moderate standing in the JIF ranking (respectively, #17, #18 and #24).

The titles of the top three papers which has received more than 1000 citations each are respectively "Distinctive image features from scale-invariant keypoints", "Image quality assessment: From error visibility to structural similarity", and "Robust real-time face detection". Two of them were published in the journal *Int J Comput Vision* and one was in *Ieee T Image Process*. The first journal ranks in #4 and the latter one only ranks in #17 according to their JIF. On the contrary, both of them are among the top 3 journals with high-*h-index*.

Table 3. Top 10 highly cited publications in 50 highest-impact AI journals during 2004-2008 (up to the date of data retrieval)

Authors	Journal	Times Cited
Lowe, DG	INT J COMPUT VISION, 2004, 60(2), 91-110.	3658
Wang, Z et al.	IEEE T IMAGE PROCESS, 2004, 13(4), 600-612.	1099
Viola, P et al.	INT J COMPUT VISION, 2004, 57(2), 137-154.	1074
Mikolajczyk, K et al.	IEEE T PATTERN ANAL, 2005, 27(10), 1615-1630.	753
Mikolajczyk, K et al.	INT J COMPUT VISION, 2004, 60(1), 63-86.	625
Boykov, Y et al.	IEEE T PATTERN ANAL, 2004, 25(9), 1124-1137.	501
He, XF et al.	IEEE T PATTERN ANAL, 2005, 27(3), 328-340.	498
Do, MN et al.	IEEE T IMAGE PROCESS, 2005, 14(12), 2091-2106.	497
Adomavicius, G et al.	IEEE T KNOWL DATA EN, 2005, 17(6), 734-749.	472
Demsar, J	J MACH LEARN RES, 2006, 7, 1-30.	458

4 Conclusion and Discussions

The suggested ranking list of AI journals may provide interesting information for AI researchers making submission decisions and for librarians making subscription decisions, as well as for the funding agencies and university administrations to evaluate the applicants, and finally in general, help researchers to retrieve the most interesting and credible academic information. Some excellent journals considering both aspects of JIF and *h-index* have been detected: *Ieee Transactions On Pattern Analysis And Machine Intelligence (Ieee T Pattern Anal), International Journal of Computer Vision (Int J Comput Vision)* and *Ieee Transactions On Evolutionary Computation* (*Ieee T Evolut Comput*). The first two journals are also distinct for their contribution to the most influential papers in AI field. Furthermore, some "underlying" notable journals with a modest or even low JIF have been awarded for their high h-index and their remarkable contribution to the most influential publications. On the other hand, some leading journals with high JIF actually behave poorly regarding their h-index and the most impacted publications.

We should also mention the drawbacks of journal rankings based on *h-index*. By definition, the *h-index* cannot exceed the number of publications. Thus it puts small but highly-cited papers sets (in this case, journals with small number of publications) at a disadvantage, namely, "small is not beautiful". Furthermore, it's difficult to find appropriate reference standards for calculating the *h-index*. For instance, different *h-index* values will be counted when using different database, such as *Web of Science*, *Scopus*, and *google scholar*. We stick to the *Web of Science* database in the current study, for gaining a reliable and comparable ranking result to journal impact factor. However, at the very least, journal ranking based on *h-index* should be regarded as an important supplement to the journal impact factor analysis.

Finally, we stress that scientific performance could never be estimated simply by one indicator alone. There is no answer to the question of "which ranking is better?". Different measures serve different purposes. Other measures, such as Google's PageRank, Entropy indicator and Immediacy index in JCR could be also tested and compared with the existing ranking results. It will be part of the future work. In any case, a hybrid way of considering multiple dimension of citation impact is strongly suggested for journal evaluation. Furthermore, though journal citation impact indicators have extensively been used as a criteria for the evaluation of research output, there is no guarantee for a paper to gain high citations when it is published in a high-impact journal. A substantial proportion of publications in the leading journals fail to receive considerable citations. Therefore, assessment of journal impact only provides a single-minded focus in the complete picture of individual scholars' research performance.

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The Lease Mode of the Engineering Equipments According to Government Bidding

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Abstract. Passing the investigation to the construction, the paper elaborate five kinds of reason of limiting the development of equipment leasing, such as the hasty time, the high peak of construction, the construction in other regional, equipments sudden breakdown and so on, propose the lease mode of the engineering equipment according to government bidding, elaborates the reference to flow process frame chart of the mode in detail, as well as the questions concerning contract text, revenue, and acceptance of the bid condition etc. to be solved.

Keywords: Engineering equipment, Lease, Government bidding.

1 Introduction

With the human into the industrial age, lease way was into industrial production area. And Due to mechanical equipment versatility is strong, for some temporary users or insufficient funds and demanders began to use but the way to use the lease, the purpose of the use of equipment. Along with the increase of engineering machinery leasing industry, people's idea continuously updates. Under many conditions, leasing the engineering equipments is more economic and feasible than purchasing them.

In China, the engineering machinery early after the founding of new China began to appear, in the 1990 s, lease in engineering machinery field has been developed. At the time of the lease, the fastest 6 months, so will pay back your investment in lease in engineering machinery field has generally blossom. From the scale has stood in various sectors of the front end. In this century, as China's economic system reform, engineering machinery lease from short-term lease has to long-term leases, from don't care whether the lease objects to the lessee to care about, transfer the lease of the object to the end. There is the conversion of the rental service to lease financing way. As well as there is the conversion of the simply use the device to the purpose of the equipment investment.

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However, because the present construction machinery rental market is not complete, various aspects and regulations is not complete, lead to the dispute was also increasing. This also largely restricted the engineering equipment leasing business further development.

2 The Main Research

In April, 2011, seeing from questionnaire result to 67 units of the construction in Anhui province (Be effective), 43 businesses carried on having of equipment leasing last year, had 64%.The reasons of leasing equipment have mainly:

(1)The time is tight, more equipment is leased, so that they raise the velocity of construction and ensure the job schedule.

(2)At the high peak of construction, the units pass to lease the equipments in order to intensifying strength and undertaking more engineering.

(3)The construction made in other regions. It is inconvenient to transport machinery equipments, so leased in the region.

(4) The equipments of oneself are still in the purchase, or broken down in the temporary. The units rent the equipments to help the urgent need.

(5)There is the equipment being maintaining or the annual survey, perhaps being rented by other unit etc.

The specific data see table 1.

Table 1. The specific data of the investigation about the equipment leasing reasons

Serial Number	Circumstances	The Number of Relevant Units	Percentage
①	The time is tight, it is needed more equipments.	5 companies	11.62%
②	It is for undertaking more items at construction high peak term.	8 companies	18.60%
③	Across construction in the region, it is more suitable to rent the equipment locally.	12 companies	27.90%
④	The equipment breaks down, it is urgent to use.	15 companies	34.88%
⑤	It is other reasons.	3 companies	6.78%

The investigation suggests that each causal ratio is shown as figure 1 (Corresponding to table 1).

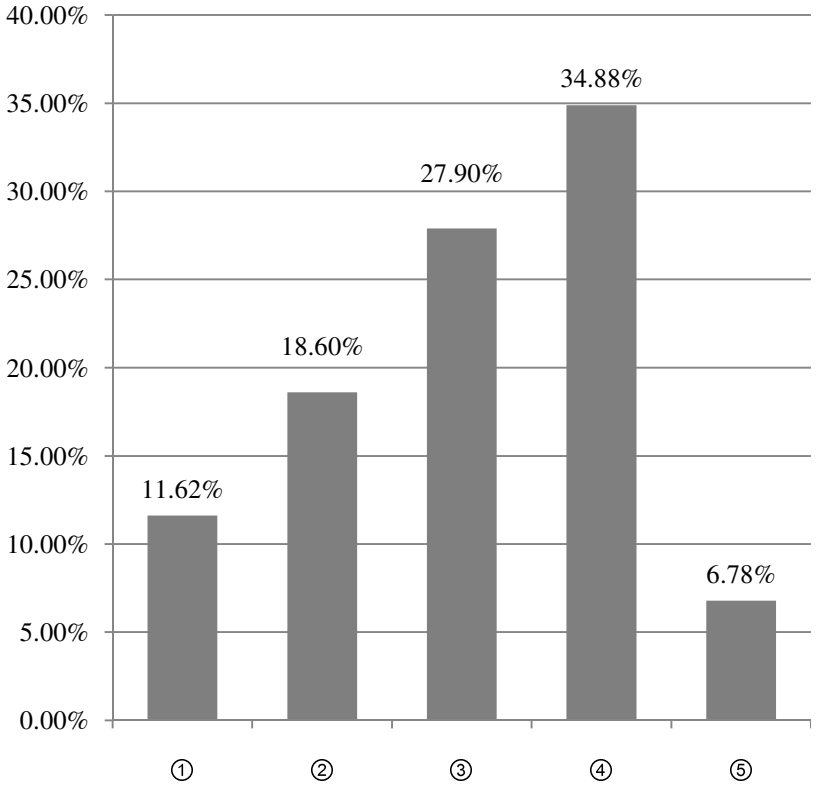

Fig. 1. The equipment leasing inspect statistical chart

Obviously, it is not difficult to be discovered from the inspect result that the reason of leasing the equipments basically belong to cannot help but for it. The majority of businesses have never carried on the operation by way of business layout to the hire equipment. They didn't chase the equipment rental as a kind of routine plan. In addition, there are 24 businesses. They didn't rent the business of equipment in the past year, and majority of them hold negative attitude, regarded leasing the equipment as the performance of lack real strength. This kind of falling behind of idea is also undoubtedly a reason that baffles the equipment leasing industry expanding.

The idea influences the behavior, and the environment confines the operating activities. It is reported that the sum of the equipment leasing consumption in China, according to the data in the end of 2010, have still not enough 10% of the ration of the whole engineering machinery market demands, while the oversea developed countries already arrives above 80%.

Being needed the standard, transparent to everyone, maneuverable mode, is another important reason that the equipments leasing industry develops is effected, many of inside of the equipment leasing industries hold that the development of the craft depend on “popularity” or “network”.

The popularity and network are certainly important. However, it makes the engineering equipment leasing industry to develop over a long period of time in China; the more important condition is needed to create with benefit in fair competition. For the reason, we might as well carry on some investigations and study to “the lease mode of the engineering equipment according to government biding”.

Tender and bid is a kind of international practices, is the product of development of commodity economy height, is applied technology, economic method and the market competition mechanism, the organization carries out the role of a preferred way of clinch a deal. This way is in the goods, engineering and service in the act of purchasing, the bidders through the previously announced of purchase and requirements, attract numerous bidders according to the same conditions for equal competition, according to specified procedures and organization technology, economic and legal experts to many aspects of the comprehensive review, from which shall decide on the optional project of the behavior of the winning bidder process. Its essence is a lower price acquires the best goods, engineering and service.

In the 200 years ago, tender and bid originated government procurement, is the product of development of commodity economy height. The world economy developed countries and international organizations to tender and bid into a legalized track, in order to improve the economic benefit and purchasing transparency, maintenance equal competition, regulate the bidding activities, to protect the public interest. As a senior, organized and standardization of the way to trade, tender and bid in China's overall development and use is in after the reform and open policy.

As a kind of more perfect mode of engineering management, the supervision purpose of the government biding is at constructing the effective competing system.

The engineering equipments leasing supervision with the projects tendering management both have the same characters, so that the method of the latter can be consulted by the former.

However, it is in consideration of being usually urgent to use, and not doing to execute forcibly, so that the process ought to be possibly simple, convenient and fast.

Concretely, the process can be meant into frame chart:

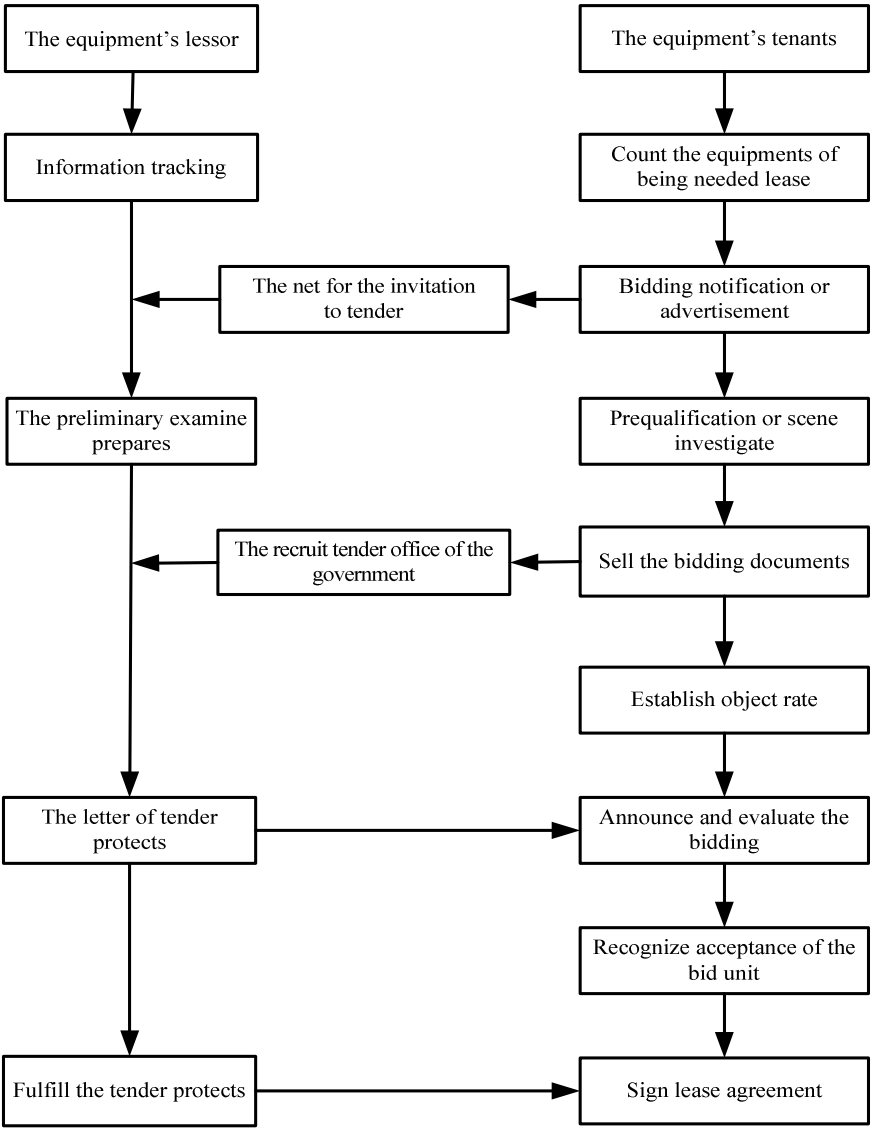

Fig. 2. The equipment leasing recruit to tender procedure frame chart

Certainly, for ensuring equipment leasing smoothly to progress, have som decisive problems to be needed sette:

(1)Being organized the experts to establish a specialized contract text, it is complete in contents and easy to apply.

Current use of some related text content is too simple, not unity, is not standard.

(2)It is further to study and perform the exclusively revenue policy, as well as related management system that the equipment leasing industry is engaged.

At present, the construction machinery industry leasing business there is not a complete laws and regulations, although no relevant law for restraint, but believes that with the development of the lease of business will be widely, the government to respond. Laws and regulations is the precondition of the enterprise survival as soon as possible, so must carry out the research.

(3)Being researched and carried out further the rationality of acceptance bid, for example, whether to adopt the principle of wining the bidding on bottom price.

Such as, can according to construction enterprise working hour sets, and making out expense norm form construction machinery lease tax minimum norm form, so as to determine whether rent accurate and realistic prevent operators false declaration evade tax payment.

(4)The equipment's lessor can ask for help of the website that the government invites bids, the business release the condition of spare time equipment online, such as the equipment technique performance, specification and intact rate and so on, it is for the purpose that the equipment's tenants understand the information in time.

At present, although some enterprise web site has been with this content, but for the cause of the enterprise competition, the various parameters is not complete. The relevant contents are needed standardized and unified in order to comparison and selection.

(5)Being convenient and fast completed each process of engineering equipments leasing, need to draw up the program that it differ from the construction engineering invites bids or the government procurement invites bids.

Such as, in the prequalification, bid the purchase price, the opening, evaluation of the specific procedures, as well as the winning conditions, and so on, all want to make detailed plans and terms.

(6) To increase the pattern of publicity, and to further improve the people to advocate a fair, just, specifications, and orderly competition consciousness.

3 Conclusions

As a kind of vibrant craft, there is broad space for their deleopment, especialy at the medium and western city in China, where is still the place of falling behind, the craft is wothier to take into expand.

In Anhui, at the end of 2010, the registered business of the engineering equipments leasing is less than 200 companies, many of them is exactly engaged in the engineering construction, also a lot of them just are the small private companies, but the worthy of the name and the total assets more than 50,000,000 equipment leasing business is only a few.

To sum up, the craft of the engineering equipments leasing craft want to develeop quickly, in addition to improving level of management constantly and studying the foreign experience, as well as promoting the operation capability, also being needed the good existence environment and the standard, convenience and reasonable mode.

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The Design of Teaching System of the Public Elective Course "Operations Research"

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Abstract. In this paper, teaching system of Undergraduate Public Course "Operational research" is designed based on the book< way of thinking and application of Operations Research > published by Peking University Press in 2009. We give the specific teaching content and some suggestions to improve teaching. Focusing on explaining the various branches of Operations Research ideas and methods, we emphasize two aspects: one is how to extract a real problem into a problem of Operations Research (how to model); the other one is how to use the software (WinQSB, GM) to solve, which finally implements the word "application ".

Keywords: Operational research, Teaching system, Design.

1 Introduction

Operations Research is an applied science carried out in for the battle research. After World War II , the theory and methods of are widely used in various public realm. Operations Research is becoming a subject for decision-making optimization theory with major use of mathematical and computer- Tools.

In recent years, many departments of colleges and universities in science and engineering and business have set up the course of Operations Research, and even some arts department. In order to make students better grasp the main ideas and methods of Operations Research and integrate theory with practice, and to improve their analysis and problem-solving ability, we must re-examine the course system of "operational research" on the basis of taking full account of all the different major curriculum system.

In the teaching process, we found that the liberal arts major undergraduate students feel very sweaty in learning the theoretical proof, complicated mathematical deduction, and the complex algorithm. The difficulty becomes greater in their self-learning process. Especially, in the face of the actual management problems, they cannot flexibly and effectively use the modeling and solving tools to resolve them.

In addition, many existing teaching materials on aspect of Operations Research are so theoretical that they need large amount of teaching hours. It is impossible to complete all of the teaching content within 32 teaching hours. In view of this, effectively controlling the number of teaching hours required, we blend modeling,

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application and calculation rely on the software of WinQSB together, and propose a teaching system which is suitable for both arts and sciences undergraduate from the practical point of the subject in conjunction with our own teaching practice. The system which makes teaching be focus on methods and applications of the subject but complex theoretical proof and formula will provide a reference to teaching and learning of the course.

2 Teaching Contents Design

The course of "Operations Research" covered a very wide scope. It includes Operations Research management issues involved in various fields, such as linear programming, nonlinear programming, dynamic programming, game theory, decision theory, graph theory, optimization theory, the search theory, reliability theory, prediction theory, and so on. The course content includes the basic concepts of each of these areas, methodologies, mathematical modeling, algorithm and application of the model and other aspects. Teaching hours of a public elective course are very limited, and a choice must be made which cannot involve all of the content. In teaching progress, laying the foundation for the students' later work and deeper learning, we select only the linear programming, dynamic programming, decision analysis, game theory, grey prediction theory and Markov forecast theory for classroom.

In the actual teaching process, the schedule of each part is shown in Figure 1.

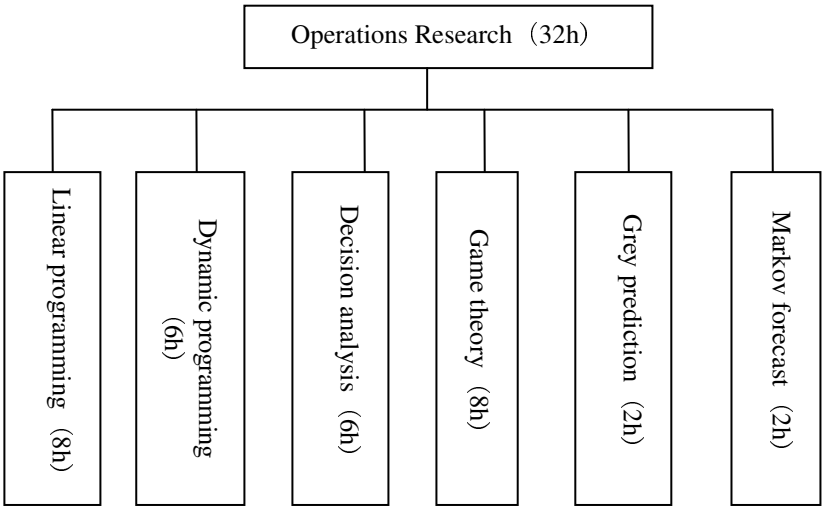

Fig. 1. The schedule of each par of the Operations Research

2.1 Linear Programming

As an important branch of Operations Research, Linear programming is a studied earlier , more complete and one of the most widely used discipline. Briefly introducing Graphic method, Dantzig method, and the help of WinQSB software to solve Linear programming Practical problems, we are mainly focused on the general modeling steps and ideas to explain. The design of the specific teaching content is shown in Figure 2.

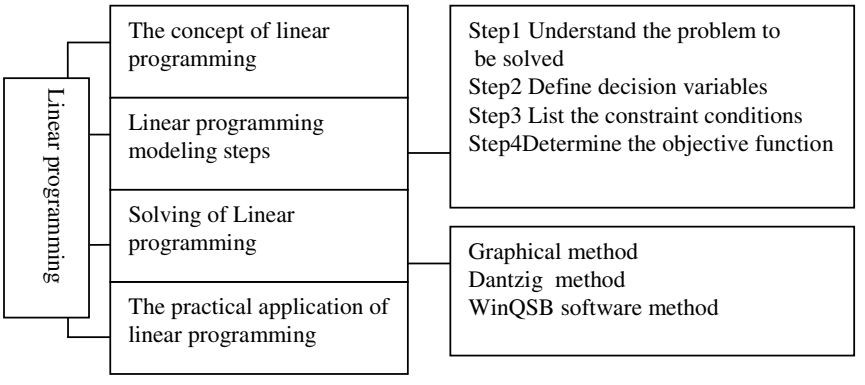

Fig. 2. The teaching design of Linear programming

2.2 Dynamic Programming

What Dynamic Programming differ from Linear Programming is that it is not an algorithm, but a way to examine the issue. As a multi-stage decision problem-solving technology, Dynamic programming does not have a standard mathematical expressions and a set of clearly defined rules like Linear programming. Through the solving of knapsack problem and the shortest path problem under the help of software WinQSB, we enable students to grasp the Dynamic Programming's basic idea of solving the problem: "we can divide a whole more complex problem into a series of small problems which are large easier to solve, then solve them one by one, eventually obtain the overall optimal solution."

2.3 Decision Analysis

We make the decision-making process the main line of teaching and chain the other knowledge-point together. Specific course content is shown in Figure 3.

2.4 Game Theory

Game theory is an important branch of Operations Research, It is to study the existence of the most reasonable action plan for the both parties in the competition, and the theory and methods of how to find the reasonable solution. In this chapter, we will introduce the basic ideas and methods of Game theory, as well as its application in competition, antagonism, profit distribution, and so on. The teaching contents mainly include model and algorithm of two finite zero-sum game, mixed strategy of matrix game, cooperative game and benefit distribution. The teaching content system is shown in Figure 4.

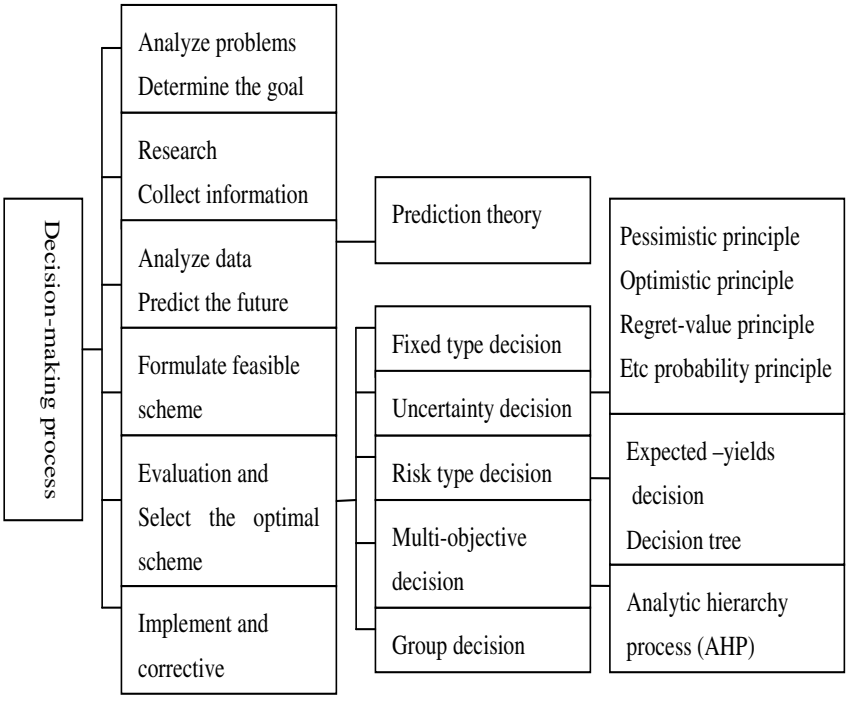

Fig. 3 The teaching design of Decision analysis

2.5 Grey Forecasting Model and Its Application

Grey forecasting model is a forecasting method using a small amount of incomplete information. We mainly introduce the definition and characteristics of gray system, GM (1, 1) model, and the application in practice. Taking advantage of the software to solve the model, we eliminate the complex mathematical calculation and derivation.

2.6 Markov Prediction Theory

As a kind of enterprise management tool, Markov prediction has been successfully applied to many occasions. Using WinQSB software to solve the actual application, we mainly emphasize the thoughts and methods of Markov prediction in the process of teaching.

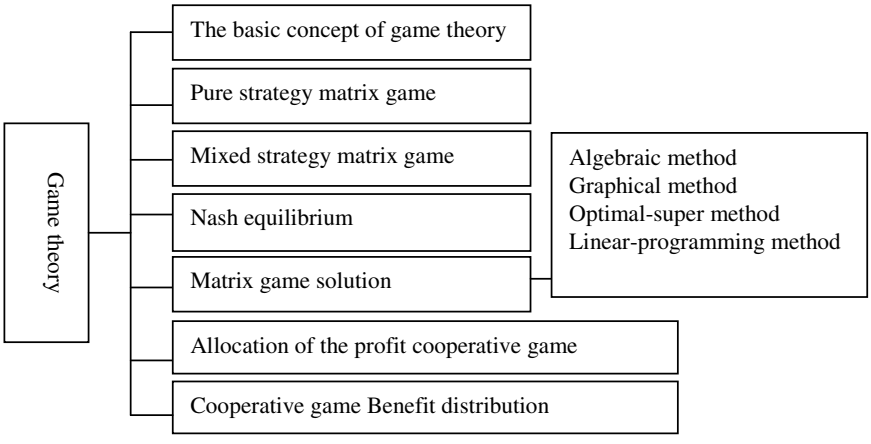

Fig. 4. The teaching design of Game theory

3 Conclusion

In this teaching system, we are focused on using popular language to explain the thought and methods of each branch of Operational Research. Taking advantage of the software to explain the steps of calculation, we avoid the process of complex mathematical reasoning. The paper will provide a reference for the teaching of the public course "Operational Research".

Acknowledgement. This article is supported by the Education Reform Project of China Institute of Industrial Relations (JG1047).

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Collaborative Product Commerce and Its Five-Element Set Model of Discrete Manufacturing Enterprise

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Abstract. Discrete manufacturing enterprises need collaborative environment to coordinate design, manufacturing, support and other process of the whole product life cycle, High-efficiency sharing and management of enterprise information can be realized by using collaborative product commerce(CPC). Background of emergency of CPC is introduced, the specific meaning of CPC is elaborated, development of collaborative product commerce is also introduced, application of CPC in manufacturing enterprise is discussed, Five-element set model of manufacturing system under CPC pattern is put forward. Goal set, feature of performance set, process of macro business set, view set and manufacturing set of Five-element Set model are studied. Predicting and evaluating performance of manufacturing enterprise which under CPC model and building corresponding evaluating system will help establishment and execution of enterprise CPC system.

Keyword: Collaborative product commerce, manufacturing enterprise, Five-element set.

1 Introduction

The most remarkable symbol of competition among discrete manufacturing enterprises is as follows: product life cycle is getting shorter, more and more individuation requirement is required, and more and more information of the whole supply chain need recycling. Under this background, manufacturing enterprises needs share information with not only enterprise departments, but also with suppliers, distributors, and customers. But products information not only distribute in departments, but also in each notes of supply chain nets. Therefore, it is necessary for manufactruing enterprises to create collaborative enviroment and build uniform products information platform to coordinate design, manufacturing, support and other process of the whole product life cycle. Collaborative product commerce (CPC) can realize high-efficiency sharing and management of enterprise information and meet the requirment of enterprise.

2 Development of Collaborative Product Commerce

With the development of technology and change of the market, connotation of manufacturing system is expanding. CPC is the integration of up-to-date

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technology of product design, manufacturing and management in modern manufacturing. CPC has experienced a long history of development. Fig.1 shows evolution way of CPC concept.

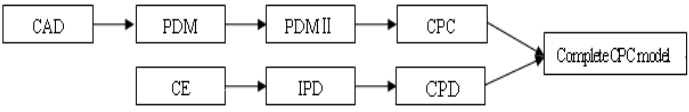

Fig. 1. Evolution way of CPC concept

We can clearly see two main lines, one is evolution way which from computer-aided design (CAD) to product data management (PDM), then from second generation product data management (PDMII) to collaborative product commerce that driven by software suppliers. This way forms collaborative product commerce concept in terms of software system, and it provide building of collaborative product commerce model with possibility and necessary support. Another main line is evolution way which from concurrent engineering to integrated produce development and then to collaborative product developmeng that driven by academia and executive. The two main lines twist together during development and enhance each other and promote common development.

Concept of CPC was first introduced by Aberdeen Group on Novenmber 1999[8]; the concept was given in terms of technology. Aberdeen Group introduces the concept of CPC in terms of technology can only give a description of CPC, and failed to unfold the essence of CPC. People tend to use technoloty language to describe CPC system and ignore management problem of the system.

In terms of management, CPC is center on product or service, working with collaborate in and amog enterprises, and based on internet. CPC is a king of new business model which is the whole product life cycle oriented. CPC platform integrate application and data that inside enterprise and provide anthorized users of inside and outside enterprise with transparent visit through uniform interface.

3 Application Prospect of CPC in Manufacturing Enterprises

In process of enterprises promote information, typical problem that occurred during enterprises execute information integration, process integration and enterprise integration or other advanced technology was that large amount of information island was produced inside the enterprises. In fact, this has violated the original intention of entire optimization of collaborative product commerce, and failed to achieve expected result of using these advanced idea and management result.

Using of CPC can makes resource integration of enterprise management information conducted on higher-level, and unites theses once separate information island and forms integral sharing resource. CPC provide enterprise inside integration and outside extension with efficient information platform. CPC integrate various management systems of enterprise tightly, and show it to users of inside and

outside enterprise through CPC's uniform and friendly interface. We can say that CPC become enterprise's ehub, it unites various distributed, separate application into application network which can communicate and collaborate with each other, and all of these applications can be visit through a uniform entrance. Therefore, there is still large application space in the field of collaborative product commerce for Chinese manufacturing enterprises, and execution of CPC system is worthy paying great importance to.

4 Establishing Process of CPC in Manufacturing Enterprise

Just as other commercial activities, CPC has experienced a life cycle from establishment, running, and disintegration to disappearance. Among those processes, establishing process of CPC is a process of high randomness and uncertainty, which also have dominant influence on the whole commercial process.

The analyses of establishing process of CPC are as follows: CPC is a kind of commercial activity which driven by market demand and enterprise make profit and completed under collaboration of companies. This commercial activity must conducted under the constrain of macro and micro conditions, macro environments including certain political, economic, social culture and technology; micro environments including enterprise's strategy, capacity, resources and inter-enterprise collaborative history. The most remarkable difference between traditional commerce and CPC is instead of depending only on enterprise and its suppliers, CPC requires enterprises collaboration. As a result, participating of collaborative companies is also guarantee of accomplishment of CPC. Ultimately purpose of CPC is to complete integration of value chain through close enterprises collaboration, realize optimal allocation of enterprises resources, and eventually make all collaborative enterprises gain profits.

The establishing process of CPC can be divided into several parts: identifying business opportunities, formulating strategies, releasing cooperation information, searching for potential partners, contacting with potential partners, selecting partners and optimization, modeling alliance, generating cooperation standards.

5 Five-Element Set Model of Manufacturing Enterprise under CPC Model

Establishing process of CPC is a multi-objective optimization problem with many uncertainty factors. It's really necessary for manufacturing enterprises to study how to take advantage of information, management, economical and technology measure to provide an intelligent decision making system.

This paper puts forward networked manufacturing system model under CPC, this model use five-element set to define the networked manufacturing system which under CPC mode, namely : CPC manufacturing system $\overset{\Delta}{=} \sum(G, F, T, V, P)$

Where:(1) G (Goal) is goal (or strategy) of system, set G = {T, G, C, S, F, E} where T – Time to market; Q – Quality; C – Cost; S – After service; E – Environmental protection; F – User's demand

(2) F (feature) is set of system's performance feature, set F = {I, C, S, A}

I – Integration; C – Concurrency; S – Coordination; A – Agility

(3) T (Typology) is set of system model, set T = {MTS, ATO, MTO, ETO}

MTS – Make to stock; ATO – Assemble to order; MTO – Manufacture to order; ETO – Engineer to order

(4) V (View) is set of system view, set V = {Prod., Flow., Orga., Reso.}

Prod. – Product view; Flow. – Workflow view; Orga. – Organization view; Reso. – Resource view

(5) P (process) is set of system's macro process, $P = \{P_1, P_2, P_3, P_4, P_5\}$

P_1 – Process of customer order treatment; P_2– Process of product development; P_3– Process of product engineering; P_4– Process of product manufacturing; P_5–Process of product supply chain.

we study on Goal set, Feature of performance set, process of macro business set, View set and manufacturing set of Five-element Set model. By seeking solution for three dimension model: Process/Feature/View (PFV), Process/Typology/View (PTV), Process/Typology/Goal (PTG) and studying on respective performance factors of PTG, PTV and PFV models, and then solve the evaluation structure model between goal system and performance feature system in Process/Feature/Goal (PFG), establish performance analysis model and goal evaluation method of networked manufacturing system that under CPC model, analyze the performance of CPC manufacturing system, and evaluate the system goal, establish corresponding evaluation standard system, this is of great importance in controlling, forecasting and optimizing CPC manufacturing system.

6 Conclusion

Fundamental of discrete enterprises keep vitality lies in product innovation. Promote by customer's demand, CPC will become a kind of powerful tool of discrete enterprises conducting cooperation and competition. This is a development direction of conducting global collaboration which center on product. CPC is not only a kind of software as well as service, but also innovation of existing enterprise manufacturing model. Manufacturing enterprise execute CPC system is a typical engineering of management rebuilding, it requires that enterprise conducts innovation on corresponding level. Predicting and evaluating performance of manufacturing enterprise which under CPC model and building corresponding evaluating system will help establishment and execution of enterprise CPC system.

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The Dynamic Management of Career to College Students Based on Psychological Contract

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Abstract. The psychological contract includes the two sides of the psychological contract of the individual's level and organizational level. In the modern organization school and the student there are two aspects of the psychological contract that students-to school of psychological contract and school-to- students of psychological contract. This paper has introduced the concept of psychological contract and four different personal behavior reaction models while psychological contract is violated. On this basis, this paper has analyzed the demand characteristic of college students and behavioral response models to psychological contract violation at different developing stage of them in career management of college. Then the paper pointed out college how to use psychological contract implement dynamic management for college students.

Keywords: Psychological contract, psychological contract violation, college students, career.

1 Introduction

The study of the psychological contract currently focused on employment relationship in the economic organization. The results show that psychological contract in the organization increasingly become an important factor to influence staff morale, work attitude and work efficiency. Indeed, it can be psychological contract "transplanted" to a variety of disciplines, including university education. From the angle of psychological contract, this paper discussed how to use the psychological contract to manage college students effectively according to different developing stage of career, by analyzing college student's psychological contract characteristic and behavior mode while psychological contract is violated.

It is Argyris, an organizational psychologist, who use the term “psychological contract” first. He introduced this term to management field for the first time at the beginning of 1960s in his book “Understand Organizational Behavior” in 1960. He emphasize that, except for the content that the formal hiring contract stipulates, there exists the implicit, unofficial, unexposed mutual expectation which is also the important factor to decide the attitudes and behavior of staff in the interrelation between staff and organization[1]. "Father of the psychological contract" Levinson proposed psychological contract is "implied between

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organizations and employees, not publicly sum of mutual expectations ". It is largely invisible, and is in constant changing. He also pointed out that these expectations are implicit characteristics, such as wages hope some of them more clearly in consciousness, while others such as the long expected promotion are more ambiguous[2]. Organizational behavior scientists Schein, defines psychological contract in his book “Organizational Psychology” as “In any organization there is a set of unwritten expectations between every member and various kinds of administrators and other people that is working”[3].

Schein' theory had controlled the research direction of this field all the time since middle period of the sixties. The change appeared until the end of the eighties. U.S.A. famous organizational behaviorist, Carnegie and Denise M. Rousseau, a professor of Mellon University, Business School proposes that the psychological contract is the subjective faith of the party and it is the course constructed progressively in practice of associating in the essay “Psychological and Implicit Contract”[4]. Therefore, the psychological contract is no longer regarded as the result of both sides' agreement or acquiescence, but the individual of staff's one-way expectation and cognitive result. When the staffs feel or think subjectively that there is a certain commitment the organization to him, e.g. he will be promoted to the division manager one year later, he will make all-out efforts to work for the organization. Whether the commitment will be in written form or really exist it is unimportant to employee. So, the forming of the psychological contract is that of an individual's in essence, one-way setting-up and is on the foundation that is perceived subjectively.

Concept of the psychological contract has been controversial in theoretical circles and has not formed a unified point of view, but it exists in the organization and the employees as well as the impact of organizations and staff are there. In this understanding of the concept, this article argues that psychological contract of college students refers to exist a number of subjective expectations of administrators (teachers, full-time managers) and by managers (students) in management of college students. This expectation is often subjective, implicit, informal and uncertain psychological needs.

2 The Analysis of the Behavior Mode While Psychological Contract Is violated

To the violation of psychological contract the injured party would create mistrust anger, friction and behavior change, and to damage of the bilateral relations it will prominent because of loyalty down and increased number of lawsuits. Hirchman and Farrell think enterprise staff can show response when the leader violates the psychological contract through the four following ways(see Figure 1) [5].

1. Express and exchange. When the event which is lower than the expectation happen, the staff can take the constructive attitude and attempt to improve the present environment at this moment, including offering the suggestion of improving, discussing the problems with the leader and having some trade union activities.

2. Loyalty. When the events which is lower than the expectation happen, the staff may be optimistic at this moment, but they still look forward to the improvement of enterprise's internal and external environment passively including speaking for enterprises while facing the criticism about enterprise, safeguarding the reputation of enterprises and believing that enterprises and administrator will make the correct choice, but complain occasionally happens.

3. Neglect. When the events which is lower than the expectation happen, the staff may allow the state of affair to develop in poorer direction passively at this moment, including being absent from duty for a long time and being late, reducing the degree of hard working, increasing the wrong rate, escaping working responsibility, stealing enterprise's property and talking about enterprise's "unpleasant word" to the outside, etc.

4. Quit. When the events which is lower than the expectation happen, and the staff feel pessimistic to the development prospect of organization, the staff may adopt the behavior of withdrawal from an organization, including looking for a new position or resigning the job.

When the staffs perceive that the psychological contract is violated, they often produce the unfair sense. They will reduce the pay to the organization according to the fair way in their opinion. From this point, staff's consciousness experience of psychological contract influences their behavior reacting way to a great extent.

	Constructive	Destructive
Positive	Express and exchange	Neglect/Destroy
Passive	Loyalty/ Silence	Quit

Fig. 1. Behavior mode of psychological contract's violation

3 The Dynamic Management of Career to College Students Based on Psychological Contract

Each of the student's careers into the school is a dynamic process. Its development through four general phases: the exploratory stage, perfect stage, the implementation phase, and employment. The needs and attitude and behavior of students will be a greater difference at different stages. The psychological contract will change in content between students and the school. Student reaction is also varied When psychological contract violation, as students have different demand characteristics at different developing stage(see Figure 2). Therefore, Colleges should take the appropriate management according to different characteristics of the various stages of his career.

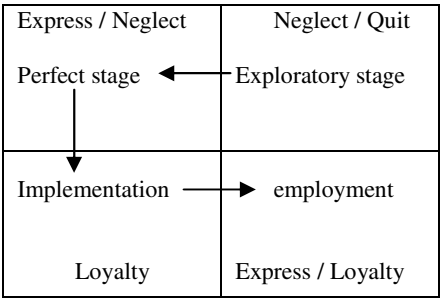

Fig. 2. Behavior mode of psychological contract's violation for college students at different careers stages

3.1 The Management of the Psychological Contract in Exploratory Stage: To Guide Students to Do the Preliminary Design of Career Planning

Career exploration period usually refers to the first-year freshmen. Freshmen entering the university they want to fully understand their own professional learning. They want to know all of the professional courses and to do what after completion of the profession and to request people's quality in these areas. In addition, some students go to college for the academic and are forced to choose their professional. They want to find a career path that interests to you through the minor and elective courses.

In the exploration period, characteristics of the psychological contract show that goals are not clear and the stability is lower and volatility is high between students and universities. This is a very unstable psychological contract types. Relationship between students and universities is still in the running, or even that the two sides of the psychological contract has not really formed. At this point, if the student was a breach of the psychological contract, they are depressed, depression, depression, anxiety, depression, decadence and other negative psychological state. They usually take out of negligence or behavioral responses of exit. They skip class and being late and reduce the level of effort or adjustment of professional or even drop out.

Universities should education and inspire them to understand the difference between middle school and university to clear the purpose of the university to enter the awareness of career planning in the exploration period. Therefore, universities this stage focuses on the concept of career planning to import and guide students to self-awareness and evaluation.

During the first year of college career management include (1) Course introduction. For example, professional and minor and elective courses the introduction, professional areas of the corresponding description, the mandate and training of professional quality. (2) Import the concept of career planning. (3) Introduce self-evaluation. For example, personal awareness for their own personal ability and personality traits and interests; the applications of evaluation of personnel quality

in the development of individual career planning; correct choice of career. (4) According to career direction to develop "Learning and Internship Program".

(5)To invites successful people and experts to open lecture series.

On this basis, college guide college students to develop good personal plan for career planning in freshman year, and inform the students continue to improve planning in the learning and social practice of 4 years college.

3.2 The Management of the Psychological Contract in the Perfect Stage: To Guide Students to Participate in Social Practice and Improve Career Planning

Perfect stage is the second year of university. After a year of transition to adapt, the maladjustment of college students to the time entry has been basically eliminated. The new psychological balance has been initially established. They enhanced their self-confidence and independence and had a certain capacity of self-education and self-criticism. College life enters the perfect stage of development and improvement. Many students began to create their own outlook on life and world outlook and values to identify their own development goals to develop a career development plan accordingly to try their best for their own goals at this stage.

In this phase characteristics of the psychological contract between students and universities are: students are most concerned about how to achieve their career goals they set and how to develop and improve toward direction of interest. Students hope to clear what kind of ways and means to realize their value, in order to meet their career development aspirations. They want the school to give a reasonable assessment of their pay. At this point, if students feel the psychological contract violation, they may lead to two behavioral responses. First, they may produce behavioral responses of expression. Then the students can take positive suggestions and constructive attitude trying to improve the current environment, including recommendations for improvement, and related problems faced by the teacher to discuss; Second, they may also respond to acts of negligence, then students may passively allow the situation to the worse direction, including long-term truancy and tardiness, reduced effort to increase the error rate, avoidance learning, said outside the school "trash talk" and so on..

During this period the school should guide the students with their own specialty, guiding students to participate in social practice, on the basis of self-awareness, and actively began to explore the environment. Therefore, at this stage the contents of career management: (1) to introduce the methods and skills of self-exploration to students. Associated with evaluation software, verify and deepen self-awareness in practice. (2) Vocational skills training. Encourage students to master professional skills in practice, efforts to train students in vocational skills and capacity of career change to adapt. (3) Internship preparation. Such as the development of internship programs based on career direction; to internship information gathering and screening. (4) Assessment of internship process and Internship training. For example, to learning cooperation and communication with people; learning self-survival and protection and understanding the operation of the

employer and job responsibilities. Schools should allow students to experience professional knowledge in the use of social practice; and in the practice of professional skills and improve overall quality. Thus, the students found the lack of career planning during the internship, so as to further their career orientation and perfect plan for career planning.

3.3 The Management of the Psychological Contract in the Implementation Period: To Guide Students to Carry Out f Career Planning

Junior is the implementation period of his career. They generally divided into "graduate groups" and "career group" and "groups abroad" the three groups, so as to form Junior's "three-dimensional structure". At the same time, it often happens between the three groups. And the ratio of the power of three is in the dynamic development changes.

At this stage, a junior bear varying degrees of mental stress and psychological pressure. At this point, the characteristics of the psychological contract between students and universities: for graduate groups graduate test preparation is a fairly long process, while competition is more intense, so some students are often discouraged.

As examination preparation is a fairly long process, and competition is fierce, so some students are often discouraged, special needs teachers and students the support and spiritual encouragement in the most difficult stage of postgraduate examinations. "Career group" to seek job opportunities in the community will inevitably thwarted at every turn, will have concerns on the future, need the support and encouragement of teachers and students. "Group abroad" is worried about his school performance can meet the requirements of the application and can realize their dreams. At this point, if the student perceived psychological contract violation, he will usually produce behavioral responses of loyalty. Then the students may be negative, but they are still optimistic to expect the school to improve internal and external environment. They maintain the reputation of the school, when complaints occur.

This stage the purpose of career planning is to guide students according to their own career planning to make the right choice or decision initially. The contents of career management: (1) self-exploration. Through the inventory of personal experience, finishing the career expectations of self, aptitude and vocational style to further improve the self-awareness. (2) Environmental Research. Introduction of articulation professional studies, analysis of the current employment situation of professional studies and so on. (3) Improve the career planning of the implementation plan. Planning objectives identified and target decomposition and the action plan. (4) Students start guide. Such as venture capital, entrepreneurial skills, entrepreneurship, Knowledge of business law and so on. (5) Lectures. Students of business history and job experience of students and so on. This phase individual counseling of career management is particularly important. Instructor must be practical guidance to help prepare students to do further studies or employment programs in understanding of individual student ability and conditions.

3.4 The Management of Psychological Contract of Employment during Employment: To Guiding Student Employment

College senior is the employment period of his career. There are currently major career mistakes for college graduates. For example, the "hot pursuit, with the crowd", "too much emphasis on the social status of occupation", "the pursuit of high-paying high-paid employment", "one-sided emphasis on employment area", "blind pursuit of personal interests to meet", "a narrow understanding of the profession", etc.

Between students and universities characteristics of the psychological contract in employment phase is that students face "graduation means unemployment" because of professional and social needs of touch and jobs in short supply. Huge gap between expectations and reality makes the graduates have a strong anxiety. At this time they need teachers and student special care and assistance. This phase the relationship between students and the school has been maintained for a long time, forming a highly sense of organization membership, with a high commitment and the high emotional investment to the organization, and better stability of the contract. If students have the feelings of contract violation, their behavior tendency expressed or keep faith. For example, they make recommendations to the school and discuss solutions to the problem or look forward to the future. They believe everything will be for the better, but sometimes they have complained about the school.

During this period the content of career management is counseling students to make full preparation for profession. First of all, schools should be the guiding employment policy, so that students understand the national policy and various laws and regulations relating to employment, according to the provisions of career and employment; Second, schools should conduct psychological counseling for employment to help students into the job market and participation in two-way selection, use of psychological methods to carry out targeted psychological counseling; Finally, schools should be career skills training, such as interview skills, written submissions, written skills, etiquette skills. Therefore, schools should reinforce the training to help students secure employment.

4 Conclusion

Psychological contract is common among college students. It is a psychological bond between colleges and students and is the basis for management students. Psychological contract violation on the attitudes and behavior of college students will have a negative impact. For example, they may be complaining, skipping and late and reduce the level of effort or even drop out and so on. Therefore, in college career management universities should take the appropriate career management according to the needs of students and the positioning of the psychological contract model at different stages of career development in order to prevent the phenomenon of psychological contract breach and keep the homeostasis of psychological contract between the university and students.

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ERP Course Teaching Mode of Research and Practice

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Abstract. This paper analyzes teaching reform and practice of ERP (Enterprise Resources Planning) course from the teaching aim, teaching content, teaching organization, teaching methods and evaluation methods. Points out that ERP courses include of " Business simulation + software simulation + theory explain + project training"; determine course points by professional properties and organize the teaching module by concept. It lists the suitable for the teaching of ERP BBS type, case type, experience and open mode 4 kinds of special teaching methods; and summarizes examination through the existing assessment and comprehensive evaluation committee.

Keywords: ERP, Teaching methods, experiment.

1 Introduction

With ERP system in the popularity of the enterprise application, some universities economic and management specialty and the computer kind professional will also introduce into the teaching system, as practice teaching reform of the university training course. ERP System is not just a MIS (Management Information System) System, also is not only enterprise Management and information technology, the simple combination, but contains various Management technologies to standardize enterprise Management of a Management mode, Management thought. Therefore, this course teaching can't simply re-broadcast computer application course, management information system course or enterprise management course teaching model. In this paper the author in teaching in ERP personal experience as the basis, from teaching aim, teaching content, teaching organization, teaching methods and evaluation methods, analyzed the aspects of teaching reform of ERP system and practice.

2 General Idea and Course Properties

ERP is a set of management thought including the multiple information technology and computer technology. Its teaching and research, not like other course just a teacher, and at most two teachers can independently teaching, it needs a

L. Zhang and C. Zhang (Eds.): Engineering Education and Management, LNEE 112, pp. 227–231.
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multi-disciplinary, interdisciplinary teaching team can complete the whole of the teaching task. It is our school was established during the staff room, ERP by each of the members of the professional backbone teachers composition, computer software, network, applications of teachers, in a planned way management, financial accounting, e-commerce, logistics supply chain, the production management, the information management of teachers, also hired ERP software vendors and enterprise executives and engineers as our part-time teachers. In the teaching, according to the different requirements for professional training courses, according to the different position and professional, points module, the different on the form of organization and teaching methods. This course is a computer application kind professional practice course, finance, and management specialty is the core of the course and experiment courses.

3 The Teaching Target and the Teaching Content

ERP courses include of "Enterprise simulation + software simulation + theory explain + project training" four parts. Enterprise simulation refers to the simulation enterprise management, also called ERP simulation, this part of sand table with ERP sand table tool often finish, sand table marked on the main function of the enterprise operation department, work flow and management rules and so on, by the students as the main function of the enterprise management personnel department personally run a virtual entity management enterprise. This part is the main task of the first let students from perceptual knowledge on ERP system, understand the basic structure of ERP brings to the enterprise benefit; Second is to get students to master the basic data of ERP operation environment, such as plan management, materials management, workshop management, procurement management and financial management, etc. Theory is part of the enterprise management in enterprise simulation based on summary ERP related concepts and principle, functions and development, and other basic knowledge, enables the student to master from the reason of ERP, can use the related theory basis "self-study + homework + explanation" instruction method of complete. In the teaching of the course of ERP software usually include financial management, supply chain management (purchasing management, sales management and inventory management), production management, human resources management, the main module. Actually, you can choose teaching content according to the nature and professional training requirement. For example: accounting major objective orientation in mastering the operation with ERP financial module analysis; Human resources professional emphasis on human resources module of study and practice.

4 Teaching Organization

According to the content of the course of four parts ERP teaching requirements are different, can use different organization form. The study of the theory and software,

can according to their previous lecture part class set organization teaching. Enterprise simulation and project practice part requires many professional joint participation, group to implement education. In each group, different students in a different role, common management a enterprise. Teaching, students can freedom group, but for a group of students in different composition, cooperate to complete the entire enterprise management, production and management of all work, beginning to financial budget, the final to submit the financial statements. Students in the operation of an enterprise, not only in the process of understanding the ERP of principle and thought, but also from other students learn the professional knowledge and skills of the outside, and improve the students' comprehensive ability and quality management, and to cultivate the students' team consciousness and teamwork spirit. In addition, in the software interpretation and training part, the author suggest project management professional teachers and by computer professional teacher organized teaching, so from each other, cross penetration. Management professional teachers teach ERP principle, management ideas and enterprise working process, the computer professional teachers teach ERP system structure and guidance system application and data maintenance.

5 Conclusion

ERP as a new course, the traditional teaching methods and experimental method has not good to adapt to the teaching requirements. In the course of teaching, as leader of the teachers teaching, must explore suitable for this course teaching method. The author through the long-term teaching practice summarized the following several kinds of teaching methods, combined to better adapt to the need of teaching the course.

5.1 Case Teaching

Usually the teaching material is boring ERP course, teachers need in the process of teaching continuously string into related cases to swap, so that the course with strong attraction, let the students to turn a negative accept knowledge for positive to absorb the knowledge. For example, we in the teaching process often to provide students with ERP implementation of the success of the business case and implementation of failure, let them their enterprise case analysis enterprise implement ERP condition, the influence of success and failure.

5.2 BBS Teaching

The teaching method is established for the ERP course learning website, open communication BBS, ERP association was established, opened ERPQQ discussion groups, let the students study the problems existing in the idea and successful

experience, sent to the website BBS about, in QQ group of online communication, brainstorm, learn from each other, form a kind of teachers and students of interactive teaching environment. At present, our school has "ERP and information society" and "ERP BBS" and called the "base" of ERP QQ group, etc. In addition, we also held nearly two years successful ERP career event, not only impelled the students obtain employment, but also understand the demand of the enterprise to broaden the channels.

5.3 Experience Teaching

The teaching method is mainly used in enterprise management simulation and project practice, part is that let students in the simulation of the enterprise as a different enterprise post role, form a team himself runs a enterprise. Not told, but personally experience how to business enterprise, how to do his own work and how to work in the coordination of true to the requirements of the workplace, with management staff to the success of the theory of "hero". This method has a strong participation, interactive and actual combat sex, competitive, and the experience, let students "studies in the joy", "participate in learning", "in the error of learning", "practice middle school, after learning with". Such teaching way so that the students can experience real in the learning process, as to be in enterprise experience, error correction of enjoyable to learn to management knowledge, management skills, to improve students' management ability, cooperation consciousness are actively significance. Sand has the competitive, simulation of interest, practicability and actual combat sex is other class teaching mode incomparable.

5.4 Open Teaching

In 1921 the British Neil advanced the concept of open teaching, he advocated "students learn in the game." The modern "open" teaching, meaning more rich, should be should be comprehensive and perspectives. First it is the opening up of the education content. The new knowledge increases, education content should update mechanism, to adjust the supplement, still should focus on front, facing the practice. Second is the opening of the teaching process, to break the starting point and by the end of the enclosed for conclusion teaching process. The teaching purpose is not church solution and master the conclusion, it explores and solve problems in the process of thinking and development ability, exercise is to cultivate the actual ability to deal with problems. Education is the open space again. Instead, the school break instead of the education of the space, the classroom should be extended to the society, to strengthen the teachers and students with practical business units to the communication between contacts. Through the "going out, please come in" means, realize the teachers and students and social practical business department of the interactive cooperation between, so as to improve the quality of teaching and the level, and improve students' comprehensive quality.

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Electronic Learning Spaces and Prospections

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Abstract. Electronic learning spaces here refer to online environments for learning, focusing on new paradigms of distance learning, in which part of the content of the course is constructed and developed by learners as they interact and collaborate on special topics or tasks. Categories of electronic learning spaces such as satellite-delivered courses, paper-based courses with CD-ROM and real-time chat systems, Multimedia courses; Models of electronic learning spaces such as the content with support model, the wraparound model and the integrated model; integrated electronic learning environments which refer both to the software and to the learning context provided by the software and learners in new learning spaces are introduced in this paper and the way ahead is prospected in the way of innovation, technology, the universities, the courses, the learners and teachers themselves.

Keywords: Electronic learning spaces, Categories and Models, Environments, Learners, Prospections.

1 Introduction

With the rapid development of information and communication technology, a great change has taken place in the field of distance language learning. A case in point is the emerging of electronic learning space. The term electronic learning spaces was used by Selinger in a discussion of the ways in which new learning and teaching spaces have been developed by electronic communications within distance education. Learning spaces refers to online environments for learning, with a focus on new paradigms of distance learning, in which part of the content of the course is constructed and developed by learners as they interact and collaborate on special topics or tasks. [1] The word electronic learning spaces is attractive because it contains the idea of openness, of an open space—it suggests a zone in which activities may take place between learners. The course is then created within the new learning spaces, as learners take advantage of the opportunities they provide, and make their contribution to the content of the course. Comments on distance learning opportunities now include reference to virtual classrooms, to virtual communities, virtual learning environments and virtual interaction. The word virtual in this sense means computer-mediated or computer-generated. Distance learners can now meet in different learning spaces within virtual environments, which provide contexts for

L. Zhang and C. Zhang (Eds.): Engineering Education and Management, LNEE 112, pp. 233–239.
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the development of virtual learning communities. In this paper , the author will introduce the categories of electronic learning spaces, models of electronic learning spaces and integrated electronic learning environments, learners in new learning space and then propose some prospections.

2 Categories and Models of Electronic Learning Spaces

In distance education, there are diverse chances for language learners to make use of, including various forms of media use, interaction and support. Here are some categories of online courses:

Satellite-delivered courses to several sites with medium-sized numbers, complemented by paper-based materials and weekly computer conferences. Paper-based courses with CD-ROM and real-time chat systems. Multimedia courses, combining a series of synchronous and asynchronous media. Broadcast and Television courses, complemented by paper and audio materials, and some chat facilities. Paper-based courses with electronic support systems to relatively large numbers. Web-based courses. It is certain that each of the courses mentioned above represents a very different learning space for learners. Within these forms, it is still possible to distinguish different expositions and models which reveal more clearly the real focus of a course in terms of such elements as content, interaction and support. We can also classify electronic learning spaces this way: Online correspondence courses is in the first place, which may make use of paper, audio and video tapes and e-mail and probably some computer-based courseware. Computer-Mediated Communication courses is another, which may have a similar element to online courses, including written texts and possibly audio/video tapes and computer software. Improved communication is possible through discussion packages, listservs (an e-mail discussion list) or bulletin boards. World Wide Web courses is also very popular, which can be followed on the World Wide Web and can take advantage of links to other relevant sites. These courses can be either text-based or can include pictures and animation. From the outlines presented here it will be obvious that the term electronic learning spaces have been used to apply to nearly any course accessible electronically.

As for models of electronic learning spaces, Mason, in his *Models of online courses*, put forward a framework which represents three models of online courses: the content + support model, the wraparound model and the integrated model. [2]This framework takes some of the key differences that exist in practice between online courses for granted.

The first one is Content + Support model. This model is made up of two main elements, with a course package +e-mail or computer conferencing or discussion. The course package may consist mostly of paper-based materials with some audio or video. The package itself may be accessible on the web. For the most part this type of course is based on pre-determined content that is regular course elements. There may be some interaction between learners to support the learning process, as in giving feedback on writing, or participating in online discussions, but these

activities represent only a small proportion of study time. Learners in such courses more often than not report experiencing some conflict between learning within the course package and using the online support elements. [2] In other words, there may be a real epistemological gap between the two learning spaces. In the cases where the course content is on the web, and where it involves the use of websites, the gap between learning the content and taking part in discussions may be somewhat less. This model is the most widespread model for online courses with a small proportion of online working based on e-mail only. [3]

The second is Wraparound model**.** The characteristic of this model lies in existing material, such as textbooks, CD-ROM resources and commercial videos. Specially designed materials are then wrapped around the existing materials, usually in the form of a learning instruction, activities and discussion. In this model much of the learning takes place through online interactions and discussions, while working with the predetermined content takes up other learning time. This type of course is more demanding on teachers who must invest adequate time, skills and commitment in creating the course through interactions with the learners. Certainly more of the responsibility for the content of the course depend on the teacher each time the course is offered. Mason makes a number of observations about this course model: Learners are given more freedom and responsibility to understand the course for themselves. The teacher's role is more extensive and less of the course is predetermined and more presents through discussion and activities as the course develops. This type of course requires a lot for tutors to students. It inclines to be applied in the courses that have a relatively small number of students. [2]

And the third is Integrated model. Contrast with wraparound model, integrated model emphasis on predetermined content less. The course itself develops online through various discussions and activities, as learners take part in collaborative activities, as they work on assignments together and as they assess and share learning resources. Although some resources are provided, the content of the course is determined to an adequate degree by what learners bring to it. Real-time communication is applied to support many of the collaborative activities. In this model, the content and support aspects of the course are presented, and take place within the context of an online learning community. In practice, this type of course is scarce indeed. Reports of working within this model have mostly come from courses with small numbers of select learners who have an interest in online learning. The model itself has many promising aspects for distance language learners including the use of real-time events and an emphasis on the collaborative, task-oriented and discussion-based activities, along with opportunities for critical reflection within an online learning community. However, it presents increasingly challenges to learners and teachers to working within the new learning spaces.

3 Integrated Electronic Learning Environments

The delivery of distance course does not only stop with the launching of course of courseware or the provision of online conferences. Many support functions are required, including appropriate assessment, tutorial and administrative support and the delivery and receipt of assignments. A system for supporting online learning

therefore involves the creation of spaces in which the learning, administrative and support needs of learners are all met.

Inglis uses the term integrated electronic learning environment to refer both to the software and to the learning context provided by the software. A key feature of integrated electronic learning environments is that they support and integrate disparate functions, such as delivery of course material, provision of chat facilities, and computer-marked testing. From the learner's point of view, this integration offers the convenience of a single environment for access to teaching, interaction and administrative support. The various forms of discussion, conferencing and chat are the most extensively used of the system features. [4]

Sometimes we also use a term Virtual Learning Environment. Course developers need to decide whether to adopt a virtual learning environment or create their own one. The benefits of a standard supported platform may need to be balanced against the learning and teaching limitations they impose. A number of criteria are available which allow distance educators to weigh up which integrated electronic learning environment is likely to appropriate for them most.

At the same time, commercial companies are working hard for market share for integrated electronic learning environments. For example, Virtual-U is an integrated electronic learning environment designed by academics at Simon Fraster University. It uses visual metaphor of the physical campus to help students to sail through the key facilities offered, with buildings entitled library, gallery etc. It offers the teacher a sample for preparing the syllabus and another for designing the conference framework for online collaboration and interaction.

4 Learners in Electronic Learning Space

Learning a language in the distance mode presents learners with what may be new demands and new opportunities for self-direction. Distance language learners are involved in both self-management and environment-management, and are faced with numerous decisions that may previously have been made for them by a teacher. In such a context they need to be able to assume more responsibility and control in identifying learning goals, in developing awareness of the learning process and directing their learning experiences. While language learning at a distance may require learners to be more autonomous in the sense of having the ability to assume responsibility for their learning, it would be wrong to assume that the distance mode gives rise to learner autonomy. The distance learning environment, like any formal learning environment, may foster or limit the development of each learner's ability to understand and manage the language learning process. Much debate centres on the means by which distance language learners can be helped to develop their capacity for autonomy. And this debate is closely related to different paradigms and ideals of distance language learning, and to various interpretations of learner independence, autonomy and control. The meaning ascribed to the concept of learner autonomy within distance education are related to discussions of control, self-directed learning, independence, and collaboration. It is possible to see them as ranging along a continuum with a focus on independence at one end, and collaborative control at the other.

The expectation that learners can be independent and that learner independence is an important goal for distance learning underlies the work of many early contributors to theory building within the field. It has been linked with discussion of self-directed learning, learner autonomy and individual responsibility. The conception and practice of distance education as a private form of learning based on self-directed texts has been challenged. It is argued that an excessive concern with independence as a desirable goal for distance education has seldom been balanced with a concern for support and recognition of the demands placed on learners. Learner independence needs to be supported by the elements of learner proficiency and support which constitute the nature of control within the learning environment. Control depends upon the opportunity and ability to direct the course of activities and experiences, and also the necessary resources. Besides, learners should have the opportunity to collaboratively control the management of learning tasks through meaningful interaction with other learners and with teachers. Within emerging paradigms of distance learning, the opportunity to exercise collaborative control of learning experiences is seen as central to the development of learner autonomy.

Apart from independence and collaborative control of learners, open materials and role of teachers should be mentioned here to foster learner autonomy. Materials should be open enough to allow a diffusion of decision-making to learners to take place, reflecting the view that an over-explicitness in materials can increase learner dependence on the course, at the expense of developing ability and responsibility in managing learning. Learners can acquire knowledge and skills in new learning space through personally meaningful activities in the context of social interaction, not by receiving knowledge in materials only. Under such circumstance, the teacher's role should be to select learning experiences that encourage choice and expand learning options; to provide a supportive climate for learning; to encourage risk-taking in making efforts to change; to provide opportunities for learners to communicate about learning; to encourage learners to confirm what they know or can do by communicating with others.

5 Prospections

The entire process for distance language learning is developing and changing, and the final destination is not completely clear. The way ahead is often considered as only technological innovations. According to this point of view, distance learning will be transformed by wireless technologies, by improvements in the telecommunications industry or by the extension of synchronous electronic delivery systems. Others take the way ahead as an issue of access: free internet access, the cost of personal computers and the development of electronic literacy. Still others believe the way ahead in terms of relationships, in particular the development of communities of learners or virtual communities. And still others look to emerging providers, university consortia and global online education as the way in the future.

But a number of things are really certain when looking ahead. One of these is that each innovation creates both new chances and new demands, and these must be considered carefully, and realistically, before they take the place of tried and tested practices. A step towards the new teaching and learning spaces involves a

careful rethinking of all aspects of practice for all participants. It means working with an interconnected community of learners, using a number of new media , and it means higher levels of interaction and collaboration, which in turn require particular kinds of skills, motivation and commitment. This suits some learners far less well than others. In all of this, it is important to avoid the automatic equation of technological advances with progress. The new paradigms consist a lot of unresolved problems relating to access, learning styles, flexibility and participation, additional value for learners, and issues of scale, continuity and cost.

Besides, the influence of IT in distance education in our country in recent years displays mainly in five areas: multimedia teaching materials, digital contents, free choice of different teaching media, networked methodology, and interactive teaching process. It is argued that IT will be able to support individual learning, enhance quality teaching materials sharing, extend the use in teaching practice, enrich teaching activities, promote mobile learning, strengthen affective exchanges and promote learning society development. The announcement of National Outline for Medium and Long- term Education Reform and Development 2010~2020 has provided a rare chance for the establishment of the Open University of China (OUC), which is a process of exploration and experiment, also demands both reforming the traditional educational system and modes as well as in order to set up new educational modes in the modern universities. In order to make a successful experiment and exploration, we need a well wrought overall design plan, as well as realistic feasible choices. The establishment of OUC should be based on the following: development of the learning society breaking the traditional barriers, changing learning modes, aiming strategically at learning for all and open learning, policy making drawing from brave practice and experiments.

Furthermore, the quality course study of distance education is having a shot in recent years, mainly focused on the following three aspects, namely, how to understand the course of distance education, including its definition, features, significance and subject; how to develop the courses reasonably, including the tactics, measures and related comparative study; how to boost the development of the courses effectively, including the summary of the existing problems and the countermeasures exploration. It is essential to enhance the problem awareness, to pay special attention to the study methods, to plenitude the study connotation and to upgrade the quality of the research results in the future.

6 Conclusion

New learning and teaching spaces have been developed by electronic communications within distance education. No matter which model we will follow and how we will adjust ourselves to the learning environment, one thing is certain that electronic learning space will be a center stage for learners to respond, contribute and put forward questions and the process is really a great challenge. With the development of new practices and role for learners and teachers within the electronic learning spaces, there is an urgent need for further research into how these learning spaces function from the point of view of learners. This would extend our present understanding of language learning in distance education, and would allow us to focus on what really natters in the way ahead.

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The Current Situation and Problems about Higher Education in Hebei Province

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Abstract. During the rapid development, the higher education in Hebei province has not only achieved the expansion of scale, but also made some progress in high quality. For example, it has formed a large and complete scale, multiple levels and types, and distributes in every city in Hebei province, and furthermore, it is playing an important role for local place, for instance, training talents endlessly for local society, doing some significant research for the enterprises and governments, and turning them into the real benefits. However, a series of problems still result from the excessive expansion, such as the lack of higher quality development, repeated professional and disciplines, the shortage of developmental funding, and low abilities to service society, and so on, which mostly affects the efficiency of higher education.

Keywords: Higher Education, colleges and universities, Hebei province.

1 Introduction

After a century of development, the higher education in Hebei Province has obtained great progress in the field of running and management reform, and now it has formed a new patterns and levels. However, it has still resulted in some sequent problems.

2 The Current State of Higher Education in Hebei Province

2.1 It Has a Large and Complete Scale, Multi-level, Multi-type, and an Uneven Distribution in Each City in Hebei Province

It has Large Scale and Diverse Levels. With adjustment, merger, improvement and others, until now the higher education has covered 11 mainly subjects including Science, technology, agriculture, medicine, management science, economics, law, philosophy, education, literature, sports and art, and consists of 15 graduate universities, 3 scientific research institutions, 42 undergraduate colleges and universities, 60 vocational colleges (junior colleges), 18 independent institutes and 6 adult colleges[1]. Meanwhile, the enrollment number is more than 300,000 each year and the students in school over 1 million, as shown in Table 1.

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Table 1. The scale status of higher education in Hebei province in 2010

levels	colleges and universities	Enrollment [thousand]	school students [thousand]	graduates [thousand]
Graduate	15	11	31	9
Undergraduate	60	156	552	122
College students	66	192	553	189

It Includes Multiple Types. The development of higher education depends on the comprehensive use of all social resources, for example, government, famous universities, social folk resources, and etc. Therefore, they are running with multiple types, and reach a peak both in size and in number firstly. As shown in Fig1.

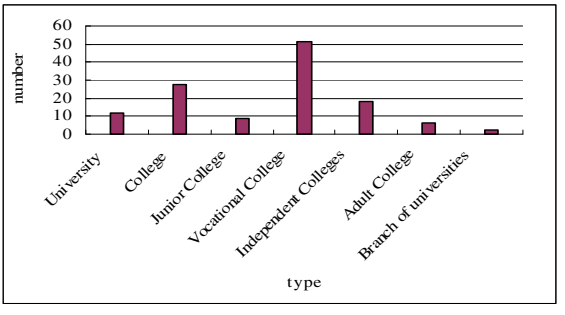

Fig. 1. Multiple types of higher education

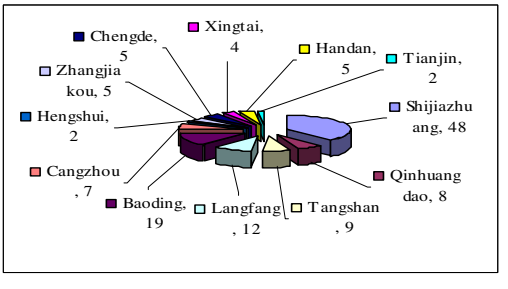

Fig. 2. Distribution of colleges and universities

It Distributes Unevenly in Deferent Cities. Higher education in Hebei province is mainly local colleges and universities, and distributes in each city varying number and strength according to local economic strength and policies. As shown in Fig2.

2.2 It Has Formed a Pattern of Multi-party Participation

According to their different funding sources and administrative authority, the higher education supports by multiple parties, the first party is from the ministry of education, the second one is the central ministries, the third one is the local provincial and municipal department, and finally; the fourth one sustains with the private capital.

2.3 It Focuses on Both the Expansion of Scale and the Quality Improvement

Remarkable Progress Come From the Expansion of Scale and Number firstly. Since the enrollment of enlargement in 1998, all colleges and universities have been enlarged extensively with adjustment, consolidation, promotion and new construction and at first make a breakthrough on the scale, as shown in Fig3, Fig4, and Fig5.

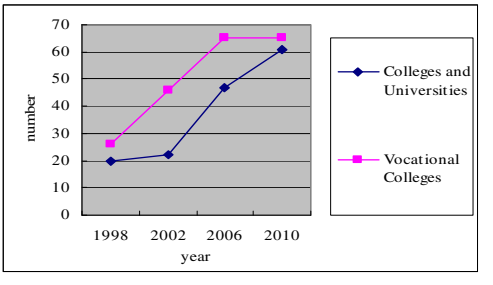

Fig. 3. The growth of higher education

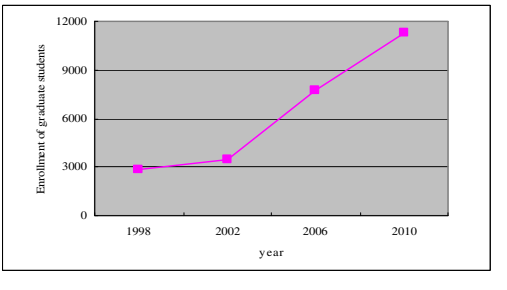

Fig. 4. Growth of graduates students

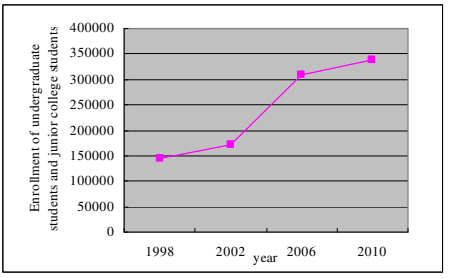

Fig. 5. Growth of undergraduate and junior students

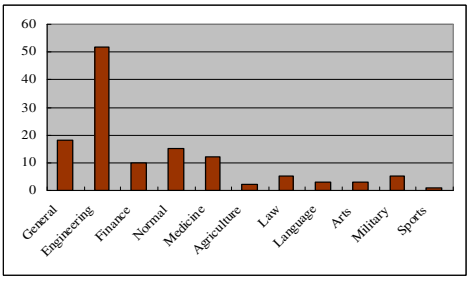

Fig. 6. Types of schools
(Data source: 1998-2010 the Statistical Communique of Economic and Social Development in Hebei province)

The Quality Improvement of Higher Education is satisfying. Through 1 century` development, Higher educational quality and strength have also been enhanced with its' experience's accumulation and promotion, as shown in Table2.

Table 2. National indicators statistics of higher education in Hebei province

National Key Laboratory	National Special Professional Construction Points	National Key Disciplines	academicians of the Chinese Academy of Sciences	program for Changjiang Scholars and Innovative Research Team
1	53	23	1	2

In addition, during "the eleventh Five-Year" period, there were 100 provincial undergraduate education innovation Highlands and 200 brand professionals in Hebei Province. And further more, one university was enlisted the top 50 national high employment universities in 2009.

2.4 It Is Participating in Local Development and Making Some Good Effects

Almost all colleges and universities are actively participating in the local development with their strength in various ways, such as participating in the R&D projects, training, and sharing their resources, and so on, and finally have obtained much achievement.

Take Hebei Technology University for example, it is aiming at serving the regional economic development among Hebei, Tianjin and Bohai Rim, has carried out a large number of new projects' technological improvement and innovation, 1023 of them have already been industrialized and earned money over 100 billion RMB.

3 The Problems about Higher Education in Hebei Province

3.1 High Quality Development Falls behind Their Expansion of Scale Critically

Excessively Pursuing Large Scale and Complete Professional and Disciplines Results in the Shortage of Well-known Universities throughout the Country. With the rapidly development, the quality development is lagged behind the expansion of scale. After all, the funding is limited, although there are more than 100 colleges and universities, few of them are well known at home and abroad.

Excessive Repetition and few Brands and Strength Reduces their Competitiveness and the Abilities of Sustainable Development. The colleges and universities mainly seek the inclusiveness and high levels, which contributes to the exclusive repetition, serious competition and low efficiency. As shown in Fig6.

Their Some Professionals and Disciplines are Incompatible for the Local Development and Modern Industrial System. Especially it is unable to satisfy the demand of the top ten leading industries, modern agriculture, modern economic management and service industry development. It is still not paid enough attention to information science, life science, new materials science, manufacturing technology and other high-tech modern subjects. As a result, some professional and disciplines still exist with less social needs, low employment and low competitiveness.

3.2 The Limited Sources and Amount of Funding Limits the Developmental Potential of the Higher Education

On the whole, the sources includes government budget, local education tax, school-run industries, tuition and fees, donations, private capital, and others[2].

The government budget is allocated to those directly under the central ministries, especially to the "985", "211" colleges and universities. Local education tax

is provided to local educational institutions. As for the private colleges, the tuition and fees accounts for about 90% of funding, which leads them to a trouble place. School-run enterprises, only the minority can really produce benefits and get more profits. However, independent colleges, "The Famous Folk Universities", are the best combination of all resources. However, demand exceeds supply so much that the funding, teachers, education equipments and resources cannot well meet their need [3].

3.3 The Training Program Is Unsuitable for the Local Development, and the Graduates Lack the Fitness and Competition in Employment

The endless delivery of human resource with high-quality, especially the infrequent and creative talents, is the source of social development. However, the normal, full-time training is the main form of the higher education in Hebei province, as for higher online education, adult education, adult self-examinations and other auxiliary patterns is quite rare, as a result, lacks the diversity, flexibility, and practice.

In addition, the training programs are also lagged behind largely. With it's expansion, the teaching, training and other projects are conducted in large classes or super large classes, and many teachers are lack the experience of actual industries, so it is not enough for the refinement of training that the students' knowledge, skills, innovative thinking and others can not be taught and exercised, and make graduates weak in employment with the lack of practical skills and innovative ability.

3.4 There Are Rich But Low Usage Education Resources in Colleges and Universities, Which Should Have Benefitted Local Society and Themselves More

As we all know, there are a lot of resources in colleges and universities, such as space, education condition, talents, books, and intelligence resource, and etc, which had been used to a quite low degree and made little profits. So it can be improved by participation in the local cooperation, especially in the triple cooperation among school—government—enterprise, which can provide the higher education with a lot of opportunity to improve self-development, and ultimately benefit the local society.

4 Conclusion

Even though the higher education in Hebei province has got so fast development, the lack of famous universities, education resource's low use, duplicated professional and disciplines, limited funding sources and amount, unfit training programs and contributions to the local society, are all reducing their efficiency and need more attention and funding from all aspects to handle them.

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Contract Design of CLSC with Random Collection Quantity

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Abstract. The collection quantity of used product is always affected by some random factors in reality. Hence this paper researches closed-loop supply chain's ordering and contract coordination problem, gives retailer and supply chain's optimal quantity of goods ordered, optimal collection quantity that the retailer promised the manufacturer and optimal profits in decentralized decision and centralized decision on the base of the assumption that the collection quantity of used products is a random variable. In addition, it designs a revenue and expense sharing contract which can coordinate closed-loop supply chain with random collection quantity.

Keywords: Random collection quantity, closed-loop supply chain, contract.

1 Introduction

Closed-loop supply chain (CLSC) is composed of different nodal enterprises. The rational behavior of them to pursue maximum profit always makes supply chain's systemic profit damaged, so it is necessary to design a coordination contract to make decentralized supply chain have the systemic efficiency of centralized supply chain [1].

2 Literature Review

Contract is a main way to coordinate CLSC. The pricing and contract coordination of CLSC have aroused widespread concern in academia. Jing-yan GE et al. researched contract coordination problem of the CLSC with linear demand [2]. Ya-jun GUO et al. designed coordination contract of the CLSC with random demand in which the retailer was responsible for retail and recovery [3]. Yan-de Gong et al. constructed optimization model of CLSC considering sharing proportion of logistics cost [4]. Jian-jun ZHANG et al. proposed duty and quantity discount strategies which can coordinate a two-echeloned CLSC [5]. Jian-mai Shi et al. studied the production optimization and pricing strategy of CLSC system [6]. Savaskan et al. researched the impact of different channel on nodal enterprise's pricing strategy and profits [7]. Jie Li studied pricing decision problem of the CLSC with leading

L. Zhang and C. Zhang (Eds.): Engineering Education and Management, LNEE 112, pp. 249–255.
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retailer [8]. Wen-bing Wang et al. analyzed CLSC's decision and coordination problems under reward and punishment mechanism [9]. Jie Wei et al. researched the pricing decision problem of CLSC with two competitive retailers under fuzzy environment [10]. Zu-qing HUANG et al. researched the decision-making efficiency problem of CLSC in which third-party was responsible for recycling [11]. Wen-jun GAO et al. studied contract coordination problem of the CLSC with risk-averse nodal enterprises and analyzed the effect of the nodal enterprises' risk- averse levels on the decisions of them [12].

Literature [2-6] explored contract coordination of CLSC on the base of the hypothesis that recycled quantity was affected only by collecting price. Literature [7-11] studied the same problems on the assumption that recycled quantity was affected only by sales volume. Literature [12] designed coordination contract of CLSC on the base of the hypothesis that recycled quantity was affected by the interaction of collecting price and sales volume. There are few papers that studied contract coordination of CLSC with random collection quantity. But in reality the collection quantity of used products has great uncertainty [13]. Hence this paper will study it.

3 Problem Description and Assumptions

This paper studies the pricing and contract coordination problem of CLSC which is consisted of a manufacturer and a retailer. The manufacturer produces single and short life cycle products. Symbol c_m is the unit cost that it produces a new product with raw material, c_{rm} is the unit cost that it recoveries a used product into a new one. We assume that Δ is equal to $c_m - c_{rm}$. Notation w is wholesale price, p is retail price, Q is the retailer's quantity of order, v is the price to sell all expected volume of inventory, q is the collection quantity that the retailer promised the manufacturer to collect, b_2 is the unit recycling price that the retailer gives to consumer for a used product, b_1 is the unit recycling price that the manufacturer gives to the retailer for a used product and θ is the additional unit cost of collection in order to collect residual collection quantity. The market demand X is a random variable. Its probability density function is $f(x)$ and distribution function is $F(x)$. The collection quantity Y is a random variable. Its probability density function is $g(y)$ and distribution function is $G(y)$. The retailer's decision variables are Q and q. The manufacturer's decision variables are w and b_1. In order to ensure that the research problem has significance, we assume that $\Delta > b_1$ and $w > c_m$ are right.

Then the retailer's expected volume of sale $S(Q)$, expected volume of inventory $I(Q)$, expected collection quantity of used product $T(q)$ and expected residual collection quantity $J(q)$ can be expressed as following.

$$S(Q)=\int_0^{+\infty}(Q\wedge x)f(x)dx=\int_0^{Q}\overline{F}(x)dx. \qquad I(Q)=Q-S(Q)=\int_0^{Q}F(x)dx.$$

$$T(q)=\int_0^{+\infty}(q\wedge y)g(y)dy=\int_0^{q}\overline{G}(y)dy \quad .$$

$$J(q)=q-T(q)=\int_0^{q}G(y)dy.$$

The meaning of symbol ' $\wedge$ ' is to choose the little number in two numbers.

In addition, the other assumptions to research the problem are as follow.

Assumption 1: The manufacturer and retailer share information freely.

Assumption 2: The manufacturer is the leader of CLSC.

Assumption 3: The manufacturer and retailer are completely rational. This means that the aims that they will pursue is to maximize their profits.

According to the problem description and assumptions, the profit functions of the retailer, manufacturer and CLSC can be expressed as following.

$$\pi_r = pS(Q)-wQ+vI(Q)+(b_1-b_2)q-\theta J(q). \tag{1}$$

$$\pi_m = (w-c_m)Q+(\Delta-b_1)q. \tag{2}$$

$$\pi_{sc} = pS(Q)+vI(Q)-c_mQ+(\Delta-b_2)q-\theta J(q). \tag{3}$$

4 Decision Models of CLSC

4.1 Decentralized Decision Model

In a decentralized decision system, the leader manufacturer will make its decisions on the base of the retailers' optimal response functions in order to maximize its profit. At this time, decision problem is

$$\begin{cases} \max\limits_{w,b_1}\pi_m=(w-c_m)Q+(\Delta-b_1)q \\ s.t.\max\limits_{Q,q}\pi_r = pS(Q)-wQ+vI(Q)+(b_1-b_2)q-\theta J(q) \end{cases}. \tag{4}$$

By solving the first order necessary condition of π_r, $\{\partial\pi_r/\partial Q=0,\partial\pi_r/\partial q=0\}$, we can get the retailers' optimal response functions to the manufacturer's decisions.

$$\begin{cases} Q = F^{-1}\left(\dfrac{P-W}{P-V}\right) \\ q = G^{-1}\left(\dfrac{b_1-b_2}{\theta}\right) \end{cases}. \tag{5}$$

Taking into account Q and q and solving the first order necessary condition of π_m, $\{\partial\pi_m/\partial w = 0, \partial\pi_m/\partial b_1 = 0\}$, we can find the manufacturer's optimal decisions w^* and b_1^*. Hence the retailers' optimal response functions can be expressed as following.

$$\begin{cases} Q^* = F^{-1}\left(\dfrac{P-W^*}{P-V}\right) \\ q^* = G^{-1}\left(\dfrac{b_1^*-b_2}{\theta}\right) \end{cases}. \tag{6}$$

4.2 Centralized Decision Model

Centralized decision means that the manufacture and retailer see themselves as a whole and make decisions to maximize CLSC's profit. At this time, decision variables are the retailer's quantity of order Q and the collection quantity q that it promised the manufacturer. At this time, the decision problem is

$$\max_{Q,q} \pi_{sc} = pS(Q) + vI(Q) - c_m Q + (\Delta - b_2)q - \theta J(q). \tag{7}$$

By solving the first order necessary condition of π_{sc}, $\{\partial\pi_{sc}/\partial Q = 0, \partial\pi_{sc}/\partial q = 0\}$, we can get CLSC's optimal decisions.

$$\begin{cases} Q^{**} = F^{-1}\left(\dfrac{p-c_m}{p-v}\right) \\ q^{**} = G^{-1}\left(\dfrac{\Delta-b_2}{\theta}\right) \end{cases}. \tag{8}$$

Because $w^* > c_m$, $\Delta > b_1^*$ and distribution functions $F(x)$ and $G(x)$ are all increasing functions, we can gain theorem 1 by comparing equation (8) and (6).

Theorem 1. $Q^{**} > Q^*$, $q^{**} > q^*$

5 Contract Design of CLSC

According to theorem 1, we know that the optimal quantity of order and collection quantity that the retailer promised the manufacturer in a decentralized decision system are smaller than that in a centralized decision system. These indict that the CLSC with random collection quantity is not coordinated under decentralized decision. This means that there is a space to improve between the equilibrium profit of decentralized supply chain and the profit of centralized supply chain.

In terms of the analysis above, we know that the manufacturer should design a coordination contract including two coordination variables to coordinate CLSC. Because revenue and expense sharing contract is a contract including two coordination variables, it can be used to coordinate the CLSC with random collection quantity.

We assume that the retailer and manufacturer will share revenue of sale and expense of collection at the ratio of φ to $1-\varphi$, $\varphi \in [0,1]$. Then the profit functions of the retailer, manufacturer and CLSC are as follow.

$$\pi_r^{rcs} = \varphi[pS(Q) + vI(Q)] - wQ + b_1 q - \varphi[b_2 q + \theta J(q)]. \tag{9}$$

$$\pi_m^{rcs} = (1-\varphi)[pS(Q) + vI(Q)] + (w - c_m)Q + (\Delta - b_1)q - (1-\varphi)[b_2 q + \theta J(q)]. \tag{10}$$

$$\pi_{sc}^{rcs} = pS(Q) + vI(Q) - c_m Q + (\Delta - b_2)q - \theta J(q) = \pi_{sc}. \tag{11}$$

Theorem 2. When revenue and expense sharing contract $(w_{rcs}^*, b_{1rcs}^*, \varphi)$ satisfies $w_{rcs}^* = \varphi c_m$, $b_{1rcs}^* = \varphi\Delta$ and that φ is decided by the retailer and manufacturer's participation constraints, it can coordinate the CLSC with random collection quantity. The concrete value of φ is decided by the retailer and manufacturer's abilities of bargaining.

Proof. In order to make CLSC to be in coordination, the manufacturer must let the retailer's values of decision variables in coordination contract are equal to the values of decision variables in centralized decision. By solving the first order necessary condition of π_r^{rcs}, $\{\partial \pi_r^{rcs} / \partial Q = 0, \partial \pi_r^{rcs} / \partial q = 0\}$, we can get the retailer's optimal decisions under revenue and expense sharing contract.

$$\begin{cases} Q_{rcs}^* = F^{-1}\left(\dfrac{\varphi p - w}{\varphi(p-v)}\right) \\ q_{rcs}^* = G^{-1}\left(\dfrac{b_1 - \varphi b_2}{\varphi\theta}\right) \end{cases}. \tag{12}$$

By comparing equation (12) and (8), we can gain the conclusion following.

$$\begin{cases} w_{rcs}^{*} = \varphi c_m \\ b_{1rcs}^{*} = \varphi \Delta \end{cases}. \tag{13}$$

The value of φ must satisfy nodal enterprises' participation constraints in order to let this contract can play a role. This means that the value of φ must ensures that the nodal enterprises' profits under revenue and expense sharing contract are bigger or equal to their profits in decentralized decision system. But the concrete value of φ are decided by their abilities of bargaining.

6 Summery

This paper builds decision models of CLSC with random collection quantity in decentralized decision system and centralized decision system, analyzes decision strategies of nodal enterprises. It finds that CLSC is not coordinated in decentralized decision system and designs a revenue and expense sharing contract which can coordinate the CLSC. The contract coordination of CLSC with multi retailers and random collection quantity should be researched in future.

Acknowledgments. This work and research has been supported by the Special Foundation of Outstanding Young Academic Leader in Shan Xi Province in 2009.

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Countermeasures for Customer Development of Marketing Department in Futures Companies

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Abstract. The customer is the source of the profit for the futures broker companies, the market department is very important on customer development. The key factor deciding the present stability of the futures and future expansion is the effectiveness of customer development. The article takes account of two aspects the customer demand and the customer value and constructs model to assessment customer development efficiency of the futures companies. According to the efficiency evaluation model and the analysis results of the condition of the futures customer development, the companies continuously are to enhance their competitiveness and to enlarge their market shares through four measures: offering personalized service based on customer segmentation, supplying with good service by building expert team, outstanding idol effects in diversification marketing channels and establishing a long-term relationship by using CRM.

Keywords: Future brokerage, Customer demand model, Customer segmentation, Customer values model, Customer development.

1 The Situation of Our Futures Markets

After ten years of development, China's futures market has gradually matured into a stage of stable development, and showing its function and importance in national economic development. Though the 163 registered futures companies improved their overall strength, they are still the low level agency business in narrow space. Generally, the survival of the fittest, the futures companies have to consider the constantly expanding marker share so as to be outstanding of the futures market. So we can say, the customer development is very, very important.

2 The Effectiveness Evaluation Model of Customer Development

The effectiveness of customer development is laying the present stability of the futures and future expansion. How do we rationally evaluate the effectiveness? The performance evaluation of the futures customer development should be conducted the following two aspects: on the one hand according to customer demand, satisfy

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the customer diversification, personalized requirements in a given range; on the other hand, considering the customer value, create value from the customer for futures companies. In one word, customer development has to realize the goal of company by maintaining good relationship with customers by satisfying their requirements. The customer demand and customer value are the two parts to assess the effectiveness of customer development.

2.1 Customer Demand Model

Futures investment is very high in threshold, yield and risk, and it attracts the customers to invest futures by unique investment philosophy and powerful R&D. The customers have demands in three levels——technology (T), profession (P), psychology (S). Technology: the trading software system must be fast, convenient and diversified (t_1); besides, it's easy for them to settlement, access or transfer capital in the system (t_2). Profession involves futures course education (k), deep analysis(r) on macro-economy, specific industry and technique data and investment ideas & guidance (p)which is practical to operate. The third level is psychology: incentive(i) by dream of gaining profit, and satisfaction degree(s)with company service. Hypothesis D as expectations of customer needs, W as the weight, the customer demand model is:

$$D = W_T \bullet T + W_P \bullet P + W_S \bullet S \ ;$$
$$\text{s.t.} \quad \begin{cases} T = w_1 \bullet t_1 + w_2 \bullet t_2 ; \\ P = w_k \bullet k + w_r \bullet r + w_p \bullet p ; \\ S = w_i \bullet i + w_s \bullet s ; \end{cases} . \tag{1}$$

W is decided by customers themselves or given through AHP.

2.2 Customer Value Model

The futures companies attempt to obtain the rational profit: maximize the overall and long term interests and to realize the marketing goals. They examine the value of developed customer from deposit capital (M), trading frequency ($T^{\sim}$), customer risk profile(R)and customer appeal(G). The higher risk customer is, the more resource of human, material and financial will inject to provide service them. Customer appeal reflected in two parts: incentives for other investors and introduce new customer. Assumed V as the customer value, K the weight, the customer value model expresses:

$$V = K_M \bullet M + K_{T^{\sim}} \bullet T^{\sim} + K_R \bullet R + K_G \bullet G \ . \tag{2}$$

K is estimated and adjusted by futures companies from its earnings combination. The CRM system provides data to appropriate assignment about the four examine aspects of customer value.

The relationship between the customer demand and the customer value is unified in the commission (C), what does the company charge for the commission equals to the payment out of customers' wiliness.

$$C_{(D)} = C_{(V)} + \alpha \quad . \tag{3}$$

Among them, α is for the bargaining power.

2.3 Analysis Based on Customer Demand-Value Model

The difference between futures companies is very significant in profession and psychology except in technology that can meet basic needs of customers. First, due to the irrational knowledge structure of marketing staff, the analysis on macro-economy & market quotation is so superficial or obscure that it's difficult for investors to adopt. Besides, investment idea and guidance cannot bring them real benefits because of the lack of practicality. Second, it's poor in maintaining long-term customer relationships. Marketing staff did not persistently track customer futures trading so that their concern or communication with customers is not enough. And the deep value of the customers is ignored, such as increasing deposit capital, lowering the risks & infecting other investors.

In the times of personality consumption, service is the core of the goods, so in essence what futures provide is the service in high quality. Everybody has their own right to choose goods: How to attract customers? It's necessary for futures to know what they want and what level service they could delivery. Nowadays, customers not only search for applicable product, (product suitability, here means return and service of the futures investment), but also take account of psychological satisfaction, especially, additional interests. After analyzing the request & contribution of customer and the advantage of themselves, the futures seek out the balance between enterprise profit and customer expectation, a win-win situation. The customer demand-value model helps firms improve the effect of customer development on quality and quantity by following measures.

3 The Suggestion for Customer Development

3.1 Offering Personalized Service Based on Customer Segmentation

According to the customer demand model, it's necessary to do customer segment for the difference of everyone's requirement. Futures customers can be divided into institutional clients who pay attention to hedging and individual investors seeking for speculation [1]. The main customers are belongs to individual investors, so

we only talk about this group. There are 3 kinds of personal investors: professional, mature and newly individual investors. The professionals are sensitive to the commission, so the low price is appropriate for them. The mature investors are dying for useful information and sorting of selected data, a service of information consultation, is required for them to make invest decision. For the newly customer, futures companies have the responsibility to get them to know how to operate the futures trading system and control the risk.

3.2 Supplying with Good Service by Building Expert Team

From the customer demand model, it's known that customers ask for high level professional service. It's difficult for individual to satisfy customer because of the trouble of extensive information and marketing. The companies depend on teams employing marketers, researchers and traders. The soul of futures marketing is selling invests ideas which are commodities too invisible for people to see or to touch. Whether the ideas are expressed to customers clearly and whether it is accepted by customers is the question: Selling ideas is more difficult [2]. The marketer in the team is to delivery abstract commodities, out of persuasion. The researcher of the team could find investment chance by collecting view and data from newspapers, internet and key persons of Exchange, transaction warehouse, commerce and even other futures firms. Based on the chance, the experienced trader introduce customers the proper investment idea and improve their operations.

3.3 Outstanding Idol Effects in Diversification Marketing Channels

Futures firms are establishing business outlets in developed cities and areas and rely on IB brokerage and futures intermediary introduction. Financial institutions such as stock, bank insurance are the main participants, who have a large number of mature, stable customers. Futures brokerage could build a long-term cooperation relationship with them by setting station points there to bring in potential customers [3]. As a direct marketing, starting futures courses for potential investors, especially the large producers and consumers of agricultural and sideline let them understanding the mean of the futures and the risk transfer function in hedging[4]. Every futures investor has a futures dream in their heart. In accordance with the customer value model, the appeal of idol customers could play important part in developing new customer and help others create a dream and than hold the dream on, in the way of sharing their successful experience with other investors.

3.4 Establishing a Long-Term Relationship by Using CRM

The analysis data of customer value comes from the CRM system. The customers churn in futures companies are very common, as we know the costs of developing a new client is higher than that of maintaining a developed one [5]. The employees

build good relationship with investors by taking full use of CRM system. The system provides information about customers on deposit capital, trading habit & risk situation. From the information, the marketers can get to know them much better and communicate with them in time to establish a long-term stable relationship.

4 Conclusion

With the development of market economy, the marketing plays an important role. After decades, futures market is gradually on the road for mature and this road is full of opportunities and challenges. The marketing of futures companies, especially the customer development strategy is the key to the success. This article constructs customer demand-value model, proposes that at the time of developing customers and satisfying their needs, they are required to search for profit goal. It gives some suggestions about futures marketing from the standpoint of relationship between futures and invests customers, which is worth studying. Due to limited space, there are many aspects need further exploration, such as indirect marketing, customer relationship management and so on.

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On Modern Educational Technology Training for University Teachers

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Abstract. With the wider application of computer technology, multimedia technology, network technology and other modern educational technologies in the teaching education of universities, to enhance the level of teaching informatization of university teachers is very important, therefore, how to improve the modern educational technology training for university teachers becomes a hot issue recent years. In the light of the theory and application of modern educational technology, this paper analyzes the present level of modern educational technology of university teachers, expounds the necessity of modern educational technology training and the targets of modern educational technology training of university teachers, discusses the content of the training, and finally points out some problems the training should pay attention to, it can provide some references for the modern educational technology training for university teachers.

Keywords: Modern educational technology, Information Technology, Training, University teachers.

1 Introduction

Modern educational technology is a new comprehensive subject of basic theory and method system used to optimize the teaching process, and it is based on information theory, system theory and control theory which is student-centered, and depends on information theory. It plays a huge role for the application of modern educational technology in the reform of education objectives, contents, forms, methods and organization. Since modern educational technology is comprehensive reflection of modern education design, media and methods, educational technology training for university teachers has received more and more attention.

2 Present Situation of Modern Educational Technology for University Teachers

In recent years, to enhance the ability to apply modern educational technology, most universities have spent lots of manpower and material resources for modern educational technology training. We have made considerable achievements in training and promotion of educational technology and information technology, but

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there are some problems. Firstly, most universities did not form long-term and effective training mechanism, and the training lacks policy support and protecting measures. Secondly, the managers neglect the training, and some trained teachers are passive who thinks that the training let him learn but not he wants to learn. Thirdly, most higher educational technology training goes into the wrong idea of purely technical, but ignores the importance of changing the education concept, and lacks technology accomplishment. Fourthly, the corporate training and single content fails to meet the individual differences and needs. If the training only operated by the relevant functional departments, but lacks education-sector involvement, it is difficult to carry out targeted training according to subject characteristics and actual situation[1].

3 Necessities of Modern Educational Technology Training for Universities

Modern educational technology has comprehensive and profound impact on the higher education. As for the macro terms, it expands the educational space. In terms of medium, it has changed the traditional school education, the single class model, the role and relationship of teachers and students. As to the micro terms, it makes the idea and behavior of teachers, students and educational administrators change revolutionarily. These will lead to a series of major changes of education ideas and concepts, training model, course content, curriculum system and teaching methods. Therefore, it is their own needs of improving the professionalism, and the primary means of achieving higher education reform and promoting higher education modernization to enhance modern educational technology training for university teachers[2]. In order to improve the application levels of educational technology, and promote the process of education information, the Ministry of Education commissioned the National Higher Education Technical Cooperation Committee to carry out the training for university teachers. According to the requirements of the Ministry of Education, the Committee develops a training program and outline, compiles training materials, certifies a number of network courses, and initially establishes the educational technology training system. So far, more than one hundred universities have established the Educational Technology Training Center.

4 Purpose of Modern Educational Technology Training for University Teachers

For the university teachers, the training goal is not to train professionals in educational technology or multimedia, courseware and web production specialists, but to promote to renew education conception, optimize teaching means and improve teaching system design capabilities, and make teachers master a certain amount of educational technology theory and teaching software development skills, and carry out integration of information technology and curriculum, improve teaching

effect, achieve the best teaching, and gradually realize education modernization and information[3]. The main purposes of the training are as follows.

(1) It makes the teachers possess a sense of modern information technology.

It makes teachers possess scientific modern educational ideas and new concepts based on information technology through systematic training, and enables them to learn new knowledge of modern educational technology and set up the application awareness of information technology in the teaching.

(2) It makes teachers enable to explore and build new teaching models with modern technology.

Through training, it makes teachers master the basic knowledge and basic operation skills, and enables teachers to get, exchange, process and apply teaching information. At the same time, the teachers should master and comprehensively apply the basic methods and basic skills of modern educational technology, and are able to integrate modern educational technology with teaching.

(3) It makes teachers learn to use modern information technology.

Modern educational technology not only enables teachers to design auxiliary teaching courseware with the computer, and more importantly, it can enrich teaching resources, enhance teaching methods, to make teachers have the ability of mastering new knowledge and new technologies of information society, have teaching design capacity and new methods of educating people.

(4) It guides students to learn through the Internet by themselves.

Modern educational technology is not only the education technology of teachers, but also the learning techniques of students. Modern education breaks the time and space limits of traditional education, and teachers and students can achieve two-way flow of information and two-way participation of educational activities.

5 Training Contents of Modern Educational Technology for University Teachers

Under the conditions of modern educational technology, the role of teachers will directly affect the content of modern educational technology. Modern educational technology is the inter discipline of modern education theory, basic theory of modern educational technology and information technology. In order to make teachers successfully use modern educational technology and integrate with curriculum to optimize teaching process, improve teaching efficiency and quality, we must carry out planned and targeted training[4]. The content of modern educational technology training can be divided into the following four aspects.

5.1 Knowledge of Modern Educational Theory

Scientific education practice is indispensable to scientific education theory. Only teachers combine special expertise with common modern educational theory, we can improve teaching efficiency, and promote the circulation and transformation of knowledge. The teacher who lacks modern education theory is not an unqualified teacher. Therefore, we must strengthen the training of modern educational

theory, help the teachers to establish modern educational ideas, understand the basic principles, master the methods of modern education, solve the problems what kind of education ideas to guide the application of modern educational technology, and how to use modern educational technology to organize teaching, to improve the ability to comprehensively use modern educational technology, and promote deep development of modern educational technology in university.

5.2 Basic Theory of Modern Educational Technology

The basic theory of modern educational technology is a theoretical method of optimizing the teaching process with modern teaching media. We must take strong measures to strengthen the learning and training of modern educational technology, so that teachers are not only familiar with its concepts, characteristics and functions, master the basic principles of instructional design, but also can freely permeate the methods and concepts of modern teaching design into the various elements of teaching process, and organize teaching activities. Only in this way, can the university teachers effectively master the basic theory of modern educational technology, scientifically and rationally use modern educational technology media, to improve the comprehensive ability to use modern educational technology.

5.3 Operation and Use of Media

Operation and use of the media is the base of carrying out modern educational technology. Through the operation of media and training of use, the teachers master the basic knowledge of information technology and operation skills, and able to operate and use the media. At the same time, teachers should be able to skillfully search and acquire all kinds of multimedia information relating to subjects and can create multimedia e-learning software courseware and know the basic computer knowledge of management and maintenance. After learning, the teachers understand the use of multimedia classrooms and common trouble shooting.

5.4 Basic Theory of Multimedia CAI and Creating of Multimedia Courseware

Computer aided instruction, CAI for short, has become one of the most popular modern educational technologies, because of a wide range of applications of multimedia computers in teaching and the popularity of the campus network. Multimedia technology makes the show form of teaching content become structural, dynamic and visualization. In view of these characteristics, teachers should understand the basic principles and methods of CAI, technology of getting and producing multimedia materials, using of CAI courseware production tools, design and production of CAI courseware and network coursework.

6 Several Problems Modern Educational Technology Training Should Pay Attention to

The quality and effect of the training is the key to continuously carry out or not. If the training can not achieve the expected results of individuals, it will dampen the teachers' initiative of participation. Therefore, the training should have the purpose, avoid going through the motions, and can solve some practical problems in modern educational technology applications. We should make full use of modern information technology which provides unprecedented convenience and power to construct a new teacher training model[5].

6.1 Training Must Be Supported by School Policies

It should take some time, funding and policy support, and the key is to get the attention of leaders. The leaders are the makers, planners and organizers of university development plan, and their ideas will determine the training system. We should make every effort to take the certificate of educational technology training as a necessary or reference conditions for the title, and as an important aspect of selecting outstand teachers, masters and high quality courses, to improve the initiative of participation and promote the training work from the policy.

6.2 Training Should Be Targeted

The educational technology training should not only be educational technology theory, or purely technical skills, but focus on the combination of theory and practice. It should not only be the empty theory. For case selection, it should combine with the specific discipline, but not too specialized in a subject, which is more conducive to knowledge transfer. In the training process, we should avoid overemphasize the importance of educational technology. It is unrealistic to make all teachers become experts in educational technology, because teacher's role is teaching, who need to understand the function and role of technology, and only skillfully use the common technology.

6.3 Training Methods Should Be Flexible

After determining the content, the training can be carried out in the way of focused teaching, dispersion time teaching, network teaching, combination of network and face to face teaching. The advantages of the training model are that self-learning time and learning methods is flexible, adapt to the characteristics of university teachers, fully respect for the subjectivity of teachers and meet the individual needs of teachers[6]. In order to meet individual requirements, it is necessary to do deep research according to the present level and actual needs of educational technology and available resources, to determine the detailed, hierarchical training objectives, develop practical training in accordance of teachers aptitude and disciplines.

6.4 Training Evaluation and Assessment Standards Should Be Reasonable

It is the basic protection for educational training to study and formulate scientific and reasonable evaluation standards. There are many disciplines, and every teacher has his own work and needs, so it should establish diverse training evaluation and examination system. It should adopt new evaluation concepts and diversity of evaluation methods, focus on process evaluation and performance evaluation, and encourage teachers to carry out self-evaluation for their performance.

7 Conclusion

Modern educational technology training for university teachers is an arduous and long-term work, which can be in the flexible way and by the specialized agencies. To meet the new situation of information technology, there is a heavy responsibility and a long way. As the universities carry out the training plans, the teachers should also correctly face the challenge. We should closely track the great change of educational thinking and teaching methods brought by modern educational technology, actively learn the expertise and educational technology skills. Only in this way, can it continuously improve the professional quality of teachers in modern education, optimize student learning resources, to enhance the quality of personnel training and promote reform and development of higher education.

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On Study of Landside Disaster Risk Assessment Applying Fuzzy Comprehensive Evaluation Method

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Abstract. Landslide disaster risk assessment is a rather complex work, which includes many uncertain factors. Hence, it is different for an accurate comprehensive assessment using quantitative method. In view of complexity, fuzziness and lacking of united evaluation method for assessment object. This paper studies the fuzzy comprehensive evaluation method which is used for landslide risk assessment. With an example, it selects the main index which affects landside disaster risk, applies for AHP to determine index weight at all levels which is used for fuzzy comprehensive evaluation. Analysis shows that fuzzy comprehensive evaluation method using for project risk assessment is feasible and the outcome is basically the same as the monitoring results, objectively reflects the indicator's dynamics to the value of comprehensive assessment, and has advantages.

Keywords: fuzzy comprehensive evaluation method, landslide disaster, comprehensive evaluation, case.

1 Introduction

In recent years, with the aggravation of human engineering activities, natural environment has been severely damaged and geological disasters have happened frequently such as landslide, debris flow, collapse, land collapse. Landslide has been one of the most serious geological disasters for which risk assessment is the important aspect to achieve the purpose of disaster prevention and reduction and it has important guiding significance. The characteristics of geological disasters determine to be confronted with many risks in the evolution and control of landslides, and in most cases these risks are potential which hided in various stages of development landslide deformation. The impact for realizing the reduction target is multi-level [1]. They also may have been composed of indicators or factors which are more layers. From the perspective of mathematical models, this is a typical multi-level hierarchical model structure. The risk also has a variety of

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properties and is affected by many factors, which is a process of combining subjective and objective for assessment and evaluation. The magnitude of the most potential risk factors in some process is difficult to be an accurate quantitative description and unified judgments. At present, in terms of landslide risk assessment, fuzzy mathematics for the tool to deal with uncertain factors has been widely used[2].Therefore, this paper intends to use fuzzy mathematical methods to quantify the index weight, combines with the AHP and fuzzy comprehensive evaluation, and conducts a risk assessment of landslide hazard on the basis of risk identification to determine the risks' changes in magnitude and scope, so as for relevant departments and engineering staff to provide the basis for apply for appropriate measures for disaster risk.

2 Principle of Fuzzy Comprehensive Evaluation Method

Fuzzy comprehensive evaluation method is comprehensive evaluation method based on fuzzy mathematics. According to the theory of fuzzy mathematics membership, the fuzzy comprehensive evaluation method converts qualitative evaluation into quantitative evaluation, namely using fuzzy mathematics to make an overall assessment of the things which is restricted by many factors [3].The focus of evaluation is the relevant factors to be considered. When processing comprehensive evaluation, it must include three conditions: ① factor sets U={U1,U2,…,Um}; ② evaluation sets V={V1,V2,…,Vp}; ③ Single-factor determination. For the single factor decision, it has fuzzy mapping $f:U\to V$, namely, setting the single-factor $u\in U$, it exists a fuzzy determination $B(u)\in f(v)$. According to fuzzy mapping theory, the fuzzy mapping f can determine a fuzzy relation R_f, which can be expressed by a matrix. Hence, R can be seen as a fuzzy transformation $U\to V$.Let A is a single factor weight, so(U,V,R,A)constitutes a comprehensive evaluation model.

3 Fuzzy Comprehensive Evaluation Risk Analysis Model

Fuzzy comprehensive evaluation method has been set to establish factor sets and assessment sets of the object, generate evaluation matrix with expert assessment or other method[4], fuzzy comprehensive evaluation model generally consists of four elements, namely (U,V,R,A), special assessment as follows.

3.1 Determine the Set of Risk Evaluation Indicators

$$U = \{U^1, U^2, U^3, ..., U^m\}$$
$$U^k = \{U_1^k, U_2^k, ..., U_i^k, ..., U_n^k\} \quad (k = 1,2,...,m) \tag{1}$$

Where U^k is sub-factor affecting risk evaluation; m is the number of risk evaluation sub-factors; $U_i^k (i = 1,2,...,n)$ is sub-factors U^k of the sub-factors, which is customarily called evaluation factors.

3.2 Determine the Evaluation Set V for Each Evaluation Indicator

$$V = \{V_1, V_2, ..., V_j, ..., V_P\} \tag{2}$$

Where P is the number of levels which is to be divided.

3.3 Single-Factor Evaluation, Obtain the Single-Factor Evaluation Matrix R^k

$$R^k = \{r_{ij}^k\}_{n\times p} = \begin{bmatrix} r_{11}^k & r_{12}^k & L & r_{1p}^k \\ r_{21}^k & r_{22}^k & L & r_{2p}^k \\ M & M & M & M \\ r_{i1}^k & r_{i2}^k & L & r_{ip}^k \\ M & M & M & M \\ r_{n1}^k & r_{n2}^k & L & r_{np}^k \end{bmatrix} \tag{3}$$
$$(k = 1,2,...,m; j = 1,2,...,p) \quad r_{ij}^k \in [0,1]$$

Where r_{ij}^k is the extent that i-th sub-factor belongs to j-th evaluation level. Therefore, the general expression for the i-th sub-factor fuzzy evaluation of set U^k (which is also the V on the fuzzy subset):

$$R_i^k = \{r_{i1}^k, r_{i2}^k, ..., r_{ip}^k\}$$

If each element on the set U^k is processed single-factor evaluation, namely obtaining single-factor evaluation matrix R^k.It can apply for Delphi to obtain single-factor evaluation matrix.

3.4 Obtain a Single-Factor Weight Set

$$A^k = \left(a_1^k, a_2^k, ..., a_n^k\right)^{A^k} \tag{4}$$

Where (4)is the weight set of the first level evaluation factors, a_i^k is the corresponding weight of i-th sub-factor U_i^k in single factor U^k $\left(k = 1,2,...,m; i = 1,2,..,n\right)$, weights at all levels should be satisfied the conditions of normalized and non-negative. $\sum_{i=1}^{n} a_i^k = 1$, $a_i^k \geq 0$ $i = 1,2,...,n$ .It can apply for AHP to determine weights.

3.5 Establish Evaluation Model, Find the Result Set B of Fuzzy Comprehensive Evaluation

$$B = U \circ A \tag{5}$$

Where B is called the result set of fuzzy comprehensive evaluation; " $\circ$ "is the synthesis operator in the fuzzy mathematics, namely $b_j^k = \bigcup_{i=1}^{n} \left(a_i^k \mathrm{I} r_{ij}^k\right)$ $\left(i = 1,2,...,n \ ; \ j = 1,2,..., p\right)$.

4 Example Application

4.1 Overview of the Geological Environment in the Area of Landslide

A landslide is located south of the Yangtze which is at a distance of 56km from the Three Gorges Dam. The elevation of the landslide trail edge is 410m, bounded by the boundary between rock and soil. The front edge of landside about 70m has been immerged the reservoir level. The overall grade of the landslide is about 30°.The north-south length of the landslide is 600m, east-west 700m.The average thickness of the slip mass is about 30m, and the volume is 1260 × 104 m^3.The landslide is located the Yangtze River valley. The landslide is monoclinic ground slope, spread the Yangtze River like ladder, and the south is higher than the north. The landslide is located zigui syncline west wing. Formation lithology is Jurassic system xiangxi group under thick-thin layered sandstone mudstone, and attitude of rocks is 15°∠36°.Joints crack is grow, major development trends to the EW and NS trending steeply dipping fracture groups and it has two cracks. The substance of the landslide consists of quaternary system residual diluvial gravelly soil, stacked stone of slide.

4.2 Establish a Hierarchical Structure

The landslide disaster has many risk factors, and the severity of consequence is different. All risk factors which should be considered giving rise to problem complexity are difficult to achieve [5]. The damages caused by landslide disaster mainly include casualty, property loss, value loss of social environment, in which the casualty and property loss belong to direct damage and it can be summarized as casualties, construction damage loss, transport facilities loss and land loss. Value loss of social environment belongs to indirect damage and it can be summarized as immigration, infection, social panic and secondary disaster. Herein, The factors affecting the landslide disaster are summarized as direct risk and indirect risk, expressing as (U^1, U^2) .These aspects are further divided into eight indicators [6,7], establishing the hierarchy figure of the landslide disaster hazard assessment, as illustrated in fig.1.Evaluating indicator is divided into two levels: the first level is overall objective factors set(B1-B2) , the second is sub-goal factor set(C1-C8).

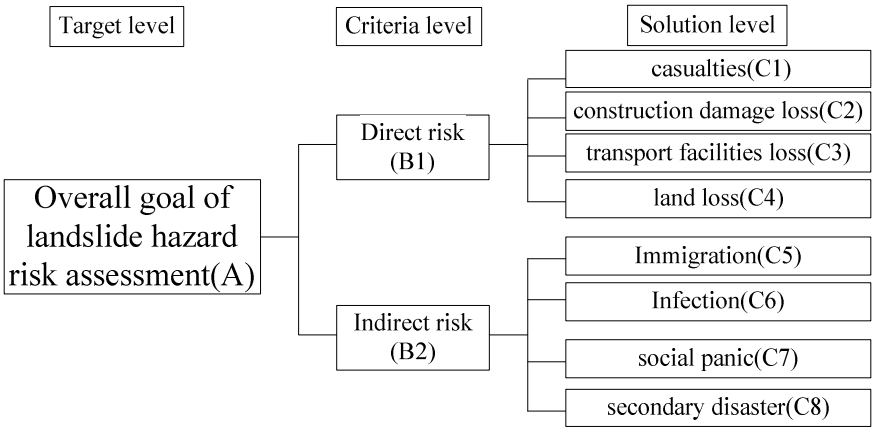

Fig. 1. Hierarchical Structure Diagram of Landslide Disaster Evaluation

4.3 Fuzzy Comprehensive Risk Assessment Analysis

The determination of the fuzzy comprehensive risk assessment weight plays a decisive role for the accuracy of assessment. Nowadays, the method of ascertaining weight includes Delphi method, AHP method, statistical method, sequence synthesis method, survey method and so on. The paper adopts AHP to determine the weight based on the detailed survey. As the weight followed:

$$U = (0.6 \quad 0.4);\ U^1 = (0.4 \quad 0.3 \quad 0.1 \quad 0.2);$$
$$U^2 = (0.5 \quad 0.1 \quad 0.1 \quad 0.3)$$

4.4 Establish the Evaluation Sets and Weight Coefficient

As illustrated in fig.1, after consulting with the relevant geological and landslide disaster prediction and prevention experts, judging the results of their analysis, choosing rationally, it is obtained the evaluation matrix of risk sub-factors. Eventually the evaluation set is $V = \{acceptable\ ,\ tolerance\ ,\ unendurable\}$.

4.5 Single-factor Evaluation, Find the Single-Factor Evaluation Matrix R^k

Supposing the selected eight landslides decision set is C1, C2, C3, C4, C5, C6, C7, C8.And then select experienced experts to give a mark for each factor , the total scores are 15. As the scores followed in table 1.

Table 1. Single-factor fuzzy evaluation of landslide stability

	Acceptable	Tolerance	Unendurable
Casualties	0	5	10
construction	2	4	9
Transport facilities	1	5	9
land	4	6	5
immigration	6	6	3
infection	2	3	10
social panic	3	5	7
secondary disaster	1	4	10

4.6 Determine Single Factor Weight Set A^k

$$A^1 = \begin{bmatrix} 0 & 0.333 & 0.667 \\ 0.133 & 0.267 & 0.600 \\ 0.067 & 0.333 & 0.600 \\ 0.267 & 0.400 & 0.333 \end{bmatrix} \qquad A^2 = \begin{bmatrix} 0.400 & 0.400 & 0.200 \\ 0.133 & 0.200 & 0.667 \\ 0.200 & 0.333 & 0.467 \\ 0.067 & 0.267 & 0.667 \end{bmatrix}$$

4.7 Establish Evaluation Model, Obtain Fuzzy Comprehensive Evaluation Results Set B^k

Based on $U^1 = (0.4 \quad 0.3 \quad 0.1 \quad 0.2)$; $U^2 = (0.5 \quad 0.1 \quad 0.1 \quad 0.3)$, it can obtain the evaluation vector of direct risk and indirect risk:

$$B^1 = U^1 \times A^1 = (0.1000 \quad 0.3266 \quad 0.5734),$$
$$B^2 = U^2 \times A^2 = (0.2534 \quad 0.3334 \quad 0.4135);$$

It can obtain the result $R = \begin{bmatrix} 0.1000 & 0.3266 & 0.5734 \\ 0.2534 & 0.3334 & 0.41358 \end{bmatrix}$,

Then it can obtain the comprehensive evaluation vector of landslide stability B based on

$$U = (0.6 \quad 0.4); \; B = U \times R = (0.1614 \quad 0.3293 \quad 0.5095).$$

From the result of vector matrix B, it can be seen that the biggest number is 0.5095 in the three numbers and belongs to unendurable set. It shows that the likelihood of coming out highest landslide disaster risk is maximum in the future.

5 Conclusion

(1)Through the use of fuzzy comprehensive evaluation method to assessment landslide disaster risk synthetically, it reaches a conclusion that this landslide disaster stay in unendurable set under natural conditions, namely once the landslide happened, the damage is enormous and it must take measures to govern the landslide.

(2)The outcome of fuzzy comprehensive evaluation method is to be in conformity with the landslide hazard monitoring and warning, increasing the reliability of landslide disaster prediction. It can provide decision basis and guidance for resemble landslide.

(3)The fuzzy comprehensive evaluation based on the introduction of subordinate function achieves to transfer the human intuition into the specific coefficients. Through establishing the mathematics model to solve the problem, it can overcome the drawbacks of the only solution in the traditional mathematics method. According to different likelihood, it can obtain problem solution of multiple levels, has scalable and complies with the modern flexible risk management thinking.

(4)However, there exists some shortage, namely it can not be solved the duplication of information caused by the correlation of evaluation indicators and the determination method of membership function and fuzzy correlation matrix needs future study.

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The Constructive Research on the Evaluation Model of the Industry Cluster Competitiveness

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Abstract. In this paper, the author selected the evaluation index of industrial cluster group competitiveness, conducted combining of the quantitative and qualitative analysis methods by using the fuzzy theory and analytic hierarchy process (AHP), constructed the evaluation model of medical manufacturing industry cluster group competitiveness in Hebei Province which had practical significance to promote the industry development.

Keywords: Analytic hierarchy process (AHP), Cluster group, Competitiveness, Fuzzy theory industry, Model.

1 Introduction

Industry cluster group is a new trend that the industrial development to adapt to economic globalization and the increasingly competitive, is also in order to create competitive advantage and then form industrial spatial organization. In recent years, industrial cluster group competitiveness has become one of the most popular research topics of regional development at home and abroad, but for its research is most in theoretical research level. In the paper the authors used the fuzzy theory and AHP method, and constructed the industrial cluster competitiveness evaluation model, then the authors applied this model to evaluate and analyze medical manufacturing industry cluster group in Hebei Province.

2 The Industrial Cluster Group of Competitiveness Evaluation Model

Industry cluster group competitiveness evaluation concerns many indicators, and each index involves many relevant factors. In these factors, some can use quantity exact expression, some difficult to quantify the exact expression, only can qualitative expression. Thus the AHP method and fuzzy theory can be combined, quantitative indexes and qualitative indexes will be together for multi-grade fuzzy comprehensive evaluation.

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AHP is a method using which qualitative problem can be translated into a quantitative analysis, the basic idea is: first, build hierarchical analysis structure model, then through comparison between each two factors of each layer, comparative judgment matrix is constructed. Judgment matrix means according to the factors above itself, the factors of this level and related factors compared relative importance. Judgment matrix is the basic information of the AHP, is also an important basis for the calculation of relative importance. Eventually the qualitative analysis and comprehensive evaluation were attributed to the weights of relative importance of the lower layer relative its upper level. Using mathematical expression is eigenvalue and eigenvector problem.

2.1 Establish Effect Evaluation Sets V

Evaluation sets is that evaluators make the set of qualitative description according to evaluation objects. In the article, the evaluation level of industry cluster group competitiveness is divided into 5 levels, The corresponding evaluation set V ={vl, v_2, v_3, v_4, v_5}= { absolutely high, very high, higher, slightly high, generally high}.

2.2 Establish Effect Evaluation Index Collection U

The evaluation of industry cluster group competitiveness can be described from four aspects: inputs of production factor, competitive performance of industry cluster group, competition efficiency of industry cluster group, competition potential of industry cluster group, see table 1.

Table 1. The evaluation index system of industry cluster group competitiveness.

first-level index U_i	second-level index U_{ij}
Production inputs index U_1	u_{11}: Engineering and technical personnel relative proportion of cluster group u_{12}: Per capita equipment rate index of cluster group u_{13}: Fixed capital investment index of cluster group u_{14}: Environment endowment index of cluster group u_{15}: Average size index of cluster group
Competitive performance index U_2	u_{21}: Industrial domestic market share of cluster group u_{22}: Industry extroverted degree of cluster group u_{23}: Average output value index of cluster group area
Competition efficiency index U_3	u_{31}: Overall labor productivity index of cluster group u_{32}: Funds rate index of cluster group u_{33}: 100 yuan of original value of fixed assets realizing profits tax index u_{34}: Current fund turnover rate index of cluster group u_{35}: Value-added rate index of cluster group
Competition potential index U_4	u_{41}: Fixed assets new degrees relative index of cluster group u_{42}: Technological progress index of cluster group u_{43}: Energy consumption intensity index of cluster group u_{44}: Scale development index of cluster group

2.3 Determining the Evaluation Indexes Weights A

Each element of evaluation index collection U has different importance in the assessment, therefore according to its important extent, each element must be confirmed different weight number. The weight set A which is composed by each weight number is the fuzzy subsets of evaluation index set U. On the basis of the hierarchical structure model, AHP is used to calculate the weights. The basic procedure is as follows: According to the established hierarchical structure model, in each layer by comparison between two elements, comparative judgment matrix is constructed. Solving features root of judgment matrix M, characteristic vector is sorting weights of relative weights of each factor in the same level relative some factor of its upper layer. Then consistency test of the judge matrix is proceeding, until it has satisfactory consistency. Specific procedure is as follows:

First, Construct judgment matrix

The construction of judgment matrix reflects that according to the upper evaluation index X, the lower index Y_i and Y_j construct the relative important degree pairwise comparison matrix $L=(Lij)_{n\times n}$, Lij means aimed at the upper evaluation index X, the important degree value of Yi compared with Y_j. Common scale types of construct judgment matrix have 1-9 scale and e0/5 - e8/5 scale. Considering the research question based on single criterion, this paper selects 1-9 scale.

Second, Calculat weight A

In theory, the weight calculation problem can be attributed to the calculation of the biggest feature root and the eigenvector of judgment matrix. Square Root method, characteristic root method, the least squares method is widely used, among which Square Root method is a simple and feasible method. The Square Root method can be used in the condition of low accuracy requirement, so the paper chooses it.

Third, Judgment matrix consistency inspection

The establishment of judgment matrix, makes the judgment thinking mathematical, simplifies the analysis about question, but judgment matrix can not always maintain the consistency of the critical thinking. Namely presumption the importance of the judge index, there were no consistent situation among the judgment. Therefore, it is necessary for judgment matrix to carry out the consistency inspection. Random consistency ratio index C.R. can be used to inspect the judgment matrix consistency.

$$C.R. = \frac{C.I.}{R.I.} \tag{1}$$

$$C.I. = \frac{\lambda_{\max} - n}{n-1} \tag{2}$$

In the formulas, λmax is the biggest characteristic root for judgment matrix; R.I. is the average random consistency index, Values of R.I. can be seen from table 2.

Table 2 Values of R.I.

order	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	***9***
RI	0	0	0.58	0.90	1.12	1.24	1.32	1.41	1.45

R.I. is the average random consistency index. When C.R. < 0.1, it's considered good consistency, the judgment matrix can be accepted.

2.4 Construct Membership Function, Establish Fuzzy Judgment Matrix R

The role of membership function is that gain the index value then fuzzy them in the field of evaluation grades, make sure the level of each index. Membership functions have various forms. We should choose them based on the characteristics of the rating index or statistics and by expert experience. This paper selects membership functions just as follows:

$$r_{ij} = \frac{C_j}{\sum_{j=1}^{n} C_j} \tag{3}$$

In the above formula, Cj as evaluation indexes was appraised Vj the number of experts. In index collection U, membership degree of NO.i index Ui relative to evaluation sets V NO.j element Vj is rij, then we can gain the fuzzy judgment matrix R.

$$R = \begin{bmatrix} r_{11} & r_{12} & \cdots & r_{1m} \\ r_{21} & r_{22} & \cdots & r_{2m} \\ \vdots & \vdots & \ddots & \vdots \\ r_{n1} & r_{n2} & \cdots & r_{nm} \end{bmatrix} \tag{4}$$

2.5 Fuzzy Comprehensive Evaluation

According to the AHP method and multi-level comprehensive evaluation process is from lower of the hierarchical structure model to the top. Through determined a certain level evaluation index weight A and fuzzy judgment matrix R, we can obtain the fuzzy evaluation vector B, namely

$$B = A \cdot R = (a_1, a_2, \cdots, a_n) \begin{bmatrix} r_{11} & r_{12} & \cdots & r_{1m} \\ r_{21} & r_{22} & \cdots & r_{2m} \\ \vdots & \vdots & \ddots & \vdots \\ r_{n1} & r_{n2} & \cdots & r_{nm} \end{bmatrix} = (b_1, b_2, \cdots, b_m) \tag{5}$$

In the above formula, Bj is fuzzy comprehensive evaluation index, which means under the comprehensive consideration the all factors affecting circumstance, fuzzy comprehensive evaluation vector B is fuzzy subsets of evaluation sets V.

2.6 Comprehensive Evaluation Result Processing, Determine the Rating

Through reverse fuzzed the evaluation results bj, final evaluation results can be gained. Reverse fuzzed there are many methods, this paper selects the weighted average method.

According to the characteristics of the problem, weighted vector γ can be determined which is corresponding evaluation sets level. Industry cluster group competitiveness evaluation are rated {absolute high, very high, higher, slightly high, generally high}, the corresponding weighted vector can be set as γ= (0.95, 0.85, 0.75, 0.65, 0.55). Combining the fuzzy comprehensive evaluation vector B, we can get the comprehensive evaluation value Z.

$$Z = \gamma \cdot B^T \tag{6}$$

Comparing the comprehensive evaluation value and the comprehensive evaluation criteria in advance, we can determine the evaluation level of industrial clusters competitiveness evaluation level.

3 The Evaluation Analysis of Pharmaceutical Manufacturing Industry Cluster Group Competitiveness

3.1 Establish Evaluation Sets V and Effect Assessment Index Collection U

Evaluation sets V and effect assessment index collection U are just as mentioned above.

3.2 Determining the Evaluation Indexes Weights A

Through the investigation and study, and ask for many experts, according to 1-9 scale, the judgment matrixes of U_1 - U_4 are respectively determined, the corresponding weight are calculated, and the consistency inspection are carried out. By calculating, we get the results C.R. < 0.1 which show the consistency of the judgment matrix is acceptable.

For example, the judgment matrix of U_1 (productive inputs of industry cluster group) just as table 3.

Table 3 The judgment matrix of productive inputs index

U_1	U_{11}	U_{12}	U_{13}	U_{14}	U_{15}
U_{11}	1	7	2	1/3	4
U_{12}	1/7	1	1/5	1/7	1/5
U_{13}	1/2	5	1	1/4	4
U_{14}	3	7	4	1	5
U_{15}	1/4	5	1/2	1/5	1
$\lambda max=5.4070$, C.R.=0.0908<0.1					

Similarly, the rest evaluation index weight of the second can be get:

A_2=(0.1048 0.3961 0.4991)
A_3=(0.2634 0.1120 0.0452 0.2211 0.3584)
A_4=(0.0626 0.4721 0.1464 0.3189)

The first layer evaluation index weight just as follows:

A=(0.0725 0.4723 0.2854 0.1697)

3.3 Establish Fuzzy Judgment Matrix R, Determine the Safety Level

According to the foregoing fuzzy membership functions, every evaluation index belongs to the membership of each evaluation grades is separately calculated, then the corresponding fuzzy judgment matrix R can be get.

For example (with other slightly), the fuzzy judgment matrix of U1 is as follows:

$$R_1 = \begin{bmatrix} 0.08 & 0.76 & 0.15 & 0.01 & 0 \\ 0 & 0.02 & 0.25 & 0.64 & 0.09 \\ 0.09 & 0.69 & 0.18 & 0.04 & 0 \\ 0.76 & 0.09 & 0.12 & 0.02 & 0.01 \\ 0.12 & 0.23 & 0.56 & 0.10 & 0 \end{bmatrix}$$

Then the results can be obtained:

$B_1=A_1 \cdot R_1$=(0.4001 0.3676 0.1773 0.0482 0.0498)

Similarly, we can get the follows results:

$B_2=A_2 \cdot R_2$=(0.2392 0.4846 0.1355 0.0950 0.0456)
$B_3=A_3 \cdot R_3$=(0.3595 0.2594 0.2708 0.0241 0.0863)
$B_4=A_4 \cdot R_4$=(0.4490 0.1914 0.1509 0.1379 0.0711)

Then the fuzzy relation matrix of comprehensive evaluation is as follows:

$$R = \begin{bmatrix} 0.4001 & 0.3676 & 0.1773 & 0.0482 & 0.0498 \\ 0.2392 & 0.4846 & 0.1355 & 0.0950 & 0.0456 \\ 0.3595 & 0.2594 & 0.2708 & 0.0241 & 0.0863 \\ 0.4490 & 0.1914 & 0.1509 & 0.1379 & 0.0711 \end{bmatrix}$$

Fuzzy comprehensive evaluation vector is as follows:

B=A·R=(0.3208 0.3631 0.1797 0.0786 0.0618)

B indicates the overall evaluation results of performance evaluation indicator set U belonging to the membership of each evaluation grade.

By the weighted average principle, safe level can be expressed with a single integrated value. Industry cluster group competitiveness evaluation are rated "absolute high, very high, higher, slightly high, generally high", the corresponding weighted vector γ=(0.95,0.85,0.75,0.65,0.55). The corresponding comprehensive evaluation interals which are determined by the expert group are just as follows: [1, 0.95], (0.95, 0.85], (0.85, 0.75], (0.75, 0.65], (0.65, 0.55], (0.65, 0].

Evaluation vector B is normalized before the Calculation of comprehensive value, the results are as follows:

B_1'=(0.3836 0.3524 0.1700 0.0462 0.0477)
B_2'=(0.2392 0.4846 0.1355 0.0950 0.0456)
B_3'=(0.3595 0.2594 0.2708 0.0241 0.0863)
B_4'=(0.4489 0.1913 0.1509 0.1379 0.0711)
B′=(0.3195 0.3616 0.1790 0.0783 0.0616)

According the formula (6), we can get the results:

Z_1=0.848, Z_2=0.828, Z_3=0.828, Z_4=0.831, Z=0.823

According to the comprehensive evaluation criterion, we can get the results:

Z_1, Z_2, Z_4, Z_8∈ (0.85, 0.75], so 4 evaluation indexes of pharmaceutical manufacturing industry cluster group competitiveness are in "relatively high" state;

Z=0.823∈(0.85, 0.75], so, the pharmaceutical manufacturing industry cluster group competitiveness is in "higher" state.

4 Conclusions

Through the above analysis, we can see that the medical manufacturing industry cluster group competitiveness in Hebei Province is in relatively high competition.

In short, along with Chinese industrial economy upgrade, the public put forward higher request. According to their own advantages and industry foundation, the government must be good at using each division of labor of the regional, intensify capital, technology, human resource input to the advantage industry, cultivate and develop "regional brand" advantage industry cluster group.

Acknowledgments. Thanks for the support of humanities and social science research department of Education Department of Hebei Province.

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Research of Innovative Design Experimental Teaching on Engineering Surveying

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Abstract. In the university, how to train the ability of students in all aspects? This should be a subject that every teacher in the university proposes to himself. Because the university is a processing plant, the teacher is the factory worker and the student is the product. The quality of product reflects the overall quality of university teachers. Students in the university not only need to have knowledge of books, but they need the guidance of all aspects from their teachers in the teaching. What do we do to improve students' abilities, such as language, communication, planning, management, teamwork, self-management, and etc? Thus, it is necessary for teachers to provide opportunities to students to train their abilities. The teachers provide a stage for students to learn more book knowledge as well as to get more information from outside as long as teachers have teaching design consciously and have more responsibility to students in their teaching, so that the overall quality of students in the university will be a very big improvement. This paper, combined with the course <Engineering Surveying> taught by the author, introduced examples of using design experimental teaching method to improve students' abilities of all aspects, explained significance of students capacity building based on experimental design.

Keywords: design experiment, Engineering Surveying, university student.

1 Design Experiment Starts from Teaching of Design Issues

Student attendance usually tends to be the basis for teachers to examine students' normal results. Engineering surveying teaching in order to achieve this objective measurement, for the first class, grouped students of class hydro 0501 and 0502. Students sit in a team, and the purpose of grouping is:

1) Let students have team awareness from the beginning of teaching.
2) Students sit together in small groups as a unit, teachers are easy to master the attendance. Just look at the number of each group to determine everyone is here, which can save time.

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3) It is easy for students to discuss with the group for a unit.
4) As a team, it is easy for students to cooperation while doing experiments. From the overall situation, the students performed very well, all of them go to lectures with no name. If there is someone absent, teachers can tell at a glance.

2 The Form of Design Experiment on Engineering Surveying

Here is a specific form of design experiment in the experiment of engineering surveying. Experiment name: Closed path leveling-design experiment

Closed path leveling is the second part of experimental teaching of engineering surveying, and its nature is design experiment.

A: Experiment tasks

1. Know the structure of all parts of the level
2. Use the level to measure closed path level
3. Error analysis on the level measurement data

B: The abilities trained in the experiment

1) Professional knowledge

1. To master the leveling path
2. Assessment of the measurement error to decide whether it meets the requirements.
3. Adjustment analysis on measurement error.
4. To write lab reports.

2) Other capacity

1. Capacity to design leveling path independently
2. Capacity to complete tasks in teamwork
3. Capacity to master the instrument by division of team members
4. Interest of students in learning
5. To improve students' independent thinking and problem-solving abilities

C: Design ideas of the experiment

In order for students to complete tasks and achieve the aim of training students' abilities, it requires students to use knowledge of leveling measurement mastered, and each group proposes a program, selects a closed path outside, develops the experimental procedures, and selects the required equipment and accessories outside the industry according to the program. Interaction between members of each group, complete the task of closed path leveling.

D: Specific performance of students in the experiment

1. Students are interested in the path designed by themselves, and very funny for their design.
2. When students discuss the experimental program, they inspire mutually and find the best solution to optimize experimental procedures.
3. Students perform a strong self-confidence when they select the instruments by their own design path. There is a big difference between choosing instruments all by themselves and choosing the teachers' given.

To choose instruments on their own performs self-consciousness, and that is a positive, proactive approach, rather than passive acceptance.

E: The greatest achievement of students in the experiment

1.Students design, complete task, process data, and write reports independently.

2.The experiment exercises students' abilities of hands-on, organization, and collaboration.

3.After the completion of lab reports, each group sends a representative to do a summary. This improves a chance for students to exercise their language skills. Each time for different student, each student will be able to exercise, and sometimes it is also in class.

4.This experiment tells the students, you can! You are great!

3 Experiment Questionnaire of Engineering Surveying

In order to understand the real feeling of students in all aspects of the experiment, we design the questionnaire to conduct a survey to class hydro 0501 and 0502, understand the students' views on the experiment from the feedback information, and thereby improve the teaching methods and approaches.

Table 1. Experiment questionnaire of engineering surveying

Survey content	Options (ticked according to your actual situation)				remark
Hands-on ability	Greatly improved	improved	Can also	Not improved	
Interest in learning of surveying	Greatly improved	improved	Can also	Not improved	
Mastery of the measurement	Greatly improved	improved	Can also	Not improved	
Planning capacity	Greatly improved	improved	Can also	Not improved	
Designing ability	Greatly improved	improved	Can also	Not improved	
Familiarity with the instruments	Greatly improved	improved	Can also	Not improved	
Teamwork skills	Greatly improved	improved	Can also	Not improved	
Communicating ability	Greatly improved	improved	Can also	Not improved	
Personal communication skills	Greatly improved	improved	Can also	Not improved	
The first thing to do with tasks	Discuss, plan, and determine	Teachers' guide	Ask others for help	Do not know where to start	
Have the courses or not	Like very much	like	ok	Not like	
The view of teamwork by the surveying experimental courses	Very important	important	general	Not important	

Table 1. *(continued)*

The confidence to complete a water conservancy project?	Very confident	confident	Have a try	No confidence
Your potential found in the experiment	great	Relatively large	general	no
Do you like to have practical lessons of surveying experiment	Like very much	Like	ok	Not like
The first thing to do with a new task by the surveying experiment courses	Plan and optimize programs	Take things one step	No feeling	Do not know how to do
Do you start thinking about your whereabouts after college yet?	thought and acted	Begin to think but no action	Graduation is still far away	Never thought
Your advice				

4 The Relevant Conclusions by the Statistics of the Questionnaire

Through statistical analysis of survey data, we draw the following conclusions:

Through the engineering surveying experiment, 93% students improve the ability of hands-on operating instruments.

1) 91% students improve the ability of planning before the experiment.
2) 95.4% students improve the ability of teamwork.
3) 89% students find that they have potential.
4) 91% students improve the ability of scheme
5) 84% students improve their communication capacity.
6) 86% students improve the ability of program designing.
7) 100% students have confidence to receive actual task of engineering surveying.

Now a summary of the above charts with Excel shows that:

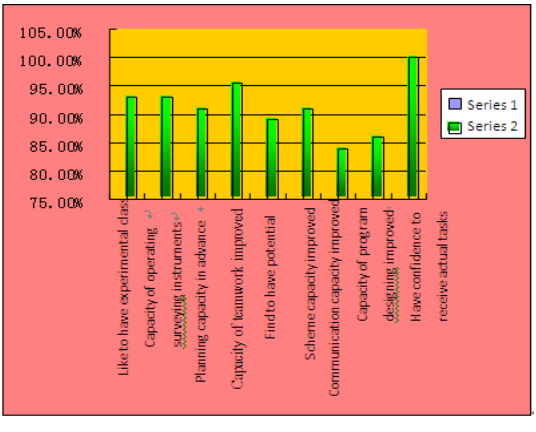

Fig. 1. Survey statistics of engineering surveying experiment

5 Student Assessment for Teaching Effectiveness of Teachers

In the column of academic affairs teaching evaluation in north china electric power university web site, teachers enter the faculty number and password then they can see the information of teaching evaluated by students. I think this system is very good, it put up a bridge between teaching and learning, and teachers can know whether students are satisfied with their teaching through this information, and draw lessons to improve their teaching methods. The system includes three parts; the first is the teaching evaluation form of the subject in North China Electric Power University, in the form we can see the teacher's name, the course's title, the school ranking of course, and the satisfaction of students to this course. If this course is ranked in the top 15% within the school, it will get  , thus it will be  . The second is students evaluation details of this course, there are ten projects for students to remark, and each has a weight, then the sum of every project mark is the final score of the course. The last is students' feedback and suggestions. Students can express their comments and suggestions.

6 Conclusion

Through the university teaching facilities of above design experiment in engineering surveying, we find that the design experiment has great signification to train students' abilities. Because the design experiment fundamentally changes the nature of experiment. The traditional test is to give students specific experimental tasks and specific experimental procedures and make students follow experimental instructions step by step to complete the experiment. This traditional way of experiment, in fact limits students initiative and active thinking, constrains their initiative, so students to complete the experiment are passive. Therefore, university should open more design tests in order to improve students overall quality and tap their potential.

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Research on Training Model of Based on International Engineering Conception for Undergraduate Education in Engineering

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Abstract. This paper is based on CDIO Engineering Education, its aim is to apply the theory of CDIO-CMM to the research about training model of Undergraduate Education in Engineering, connected with the feature of Engineering Education in China. From the start, to explain the meaning of CDIO-CMM, on the basis of problems about training model of Undergraduate Education in Engineering, the article will mainly research some aspects ranging from targets and demands, system of curriculum, teaching methods to system of evaluation and feedback, it will provide the preference for our Engineering Education.

Keywords: CDIO-CMM, Engineering Talent Training, Practical Abilities.

0 Introduction

CDIO Engineering Education Mode is an International Engineering Education Reform in recent years, is a set of the latest achievements of engineering and technology talents with growth pattern and characteristic of the education model, it is to cultivate the all-round development of creative engineering science and technology talents. And CDIO Engineering Education Mode, after introduced into China, our society and universities have their different characteristics, according to the different needs of professional CDIO localization, mainly in the exploration of the talent training mode reform, curriculum teaching and curriculum system reform, professional construction, and achieved significant results, it will provide the theory and the practice reference for higher engineering education reform.

However, during the course of using and improving at the same time, we should also summarized and reflection on the moment in the continuous learning and exploration, we only know that by the teaching idea CDIO syllabus for reform, the ability for students system evaluation and improvement, development potential and improve engineering students ability is not enough, still should further strengthen students' practical and creative ability raise and the enhancement. Therefore, we should learn from the Software College of Central South University, it has built CDIO-CMM (Conceive Design Implement Operate-Capability Maturity Model) in

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engineering education, we will be under the new concept of engineering conceptions to research and explore cultivating talents, in order to find a talent training way. with our Chinese characteristics.

1 CDIO-CMM Model Connotation

CDIO-CMM Capability Maturity Model is made up of external structure and internal structure, external structure is including the demands of reflecting the student CDIO engineering ability actual growing, progressive level, which demands for the initial level, basic level, professional level and application research level. Each level contact with each other, rely on each other and mutual foundation, it will play an important role in promoting to improve students' abilities in common.

In addition to the initial level, the internal structure refers to regard each level course as an unit in teaching and learning activities, and provides several key course domain, including a series of key curriculum teaching practice, according to the teaching activities to organize. Each key course domain of teaching activities contains four types: make course teaching standard and clear course teaching conditions, implement course teaching and teaching evaluation results. When all the key courses in one course domain can be implemented according to the requirements, and get the implementation of the provisions of the CDIO learning goals and achieve progressive incremental and iterative students CDIO Engineering Capability.

2 The Exploration of Based on the Conception of CDIO-CMM Talent Training Ways

We think the following four elements can solve the above four questions respectively, i.e. to strengthen the cooperation between colleges can solve the first, second problems, update their concepts and improving the evaluation and feedback mechanism can solve the third problem, and reform the course system and teaching methods will solve the fourth question.

2.1 Strengthen the School-Enterprise Cooperation-the Best Platform of CDIO-CMM Realization

In engineering school talent training process, combining theory with practice is very important. In the theoretical level, to strengthen the humanities social sciences, enterprise management and culture training, the proportion of outstanding professional characteristics and professional quality; Practice should be adopted by practice, practice, practice, and the way to teaching in class and after practice and training model, in order to achieve the best results of CDIO-CMM. So these conditions need the help of enterprise to be effective implementation, strengthen the school-enterprise cooperation platform, and related enterprises to establish long-term cooperation mechanism of talent training, give full play to the

enterprise information advantages and technical advantages and facilities, and at the same time, the enterprise can provide clear personnel training direction and location in many ways for college, to realize enterprise with university's docking. The school-enterprise cooperation not only provides the best platform of CDIO-CMM, but also makes the theory and practice can be fully fusion, extremely has the practical significance, greatly improving the efficiency and quality of talent training.

2.2 Update Teachers' Concept-The Precondition of CDIO-CMM Realization

Along with to the improving of students' project, application ability training, we also put forward higher request for our teachers. CDIO teaching syllabus requires teachers that they should not only has a wide and solid business ability, and profound professional knowledge, strong engineering quality, exploring consciousness and the spirit of innovation, and requests the teacher have noble professional Ethics, exquisite vocational skills, that is what we call-CDIO mode (Ethics, Integrity, Professionalism-Conceive Design Implement Operate). Though EIP-CDIO is the talent training mode and the request, this is also the demands of the teachers' qualities.

In the implementation and operation process of CDIO- CMM, requires teachers to update the teaching ideas, from the previous teachers center position into the excitation of interest (Stimulator), the organizers of the class (Organizer), learning aid move (Facilitator) and the teaching of the Trainer (Trainer), namely SOFT teachers' role. So, the teacher should adopt the corresponding teaching mode according to CDIO-CMM training goal, should take corresponding question (Wondering), activation (activating), feedback (Responding) and evaluation (Evaluating) teaching model of Evaluating, namely WARE teaching mode.

2.3 Improve the Evaluation and Feedback Mechanism-The Key of CDIO-CMM Realization

Based on CDIO- CMM principle of the talents training mode, its assessment and feedback is undoubtedly manifested through the results of talent training effect. Therefore, should be able to establish comprehensive evaluation and feedback system can be reflected adequately students engineering capability maturity level standard, so as to find out the advantages and disadvantages of implementation and operation mode of talent training, so as to improve it. According to CDIO-CMM capability maturity model and different levels, we need to build engineering capability maturity evaluation feedback system structure.

Based on this, first, CDIO-CMM Ping Gu Zu should be established, they should have engineering background by knowledge, master CDIO-CMM, familiar with CDIO engineering education model, have analytical abilities and find the problem the experts. After establishing Ping Gu Zu, first, analysis and assessment the current evaluation and feedback system, and relative analysis, whether the

preliminary evaluation is perfect and reasonable or not, such as need to improve, need to pass to inspect the way, the evaluation of it, makes an analysis of the existing problems and feedback, and finally writing by expert group CDIO capability maturity report and edited conclusion feedback to the school, the school related department will be adjustment of the implementation of the reform and the talent training scheme, training mode.

2.4 Reform the Course System and Teaching Ways-The Protection of CDIO-CMM Realization

2.4.1 The Course System

Based on CDIO-CMM capability maturity model, each level has the arrangement, modular and systematic characteristics, and according to the type of engineering undergraduate colleges characteristics, regard "basis down-to-earth, major widen, attention to the practice, and strengthen the application, to expand the research" as the principle, the whole course of optimization, formed the integration course planning system, which includes public course class, the professional course class practice link and other kinds of course, among them, the professional course category includes professional foundation courses and professional class, professional direction lesson. At the same time, but also two series for the common cultivation and personality training, comprehensive educational curricula and educational curricula and educational curricula and common personality development and implementation of educational curricula course classification and develop. Constitute the CDIO reflect--the CMM capability maturity model ability level of different characteristics, types of course classification and combining course of "one platform more than two series of module" integrated curriculum.

2.4.2 The Teaching Methods

According to CDIO teaching outline on students' ability training requirements, mainly CDIO four phases of engineering content for the cultivation of the students' capability of the target of the ideas, regard Engineering education as a series of engineering service engineering products, and finally to point out the process for the overall department unit, it is necessary to consider the knowledge spread and create patterns of the reform of teaching. On this basis, CDIO-under the principle of the CMM teaching mode should be adhering to the CDIO four stages of the training target, according to the engineering type the undergraduate course colleges and universities focus on the cultivation of students' engineering application ability, improve the characteristics and the education plan put forward the outline for the applied talents need to constantly optimize the knowledge structure, the rich social practice, strengthen the ability of application requirement, in different levels, according to the characteristics of different students learning stage respectively implement relevant teaching way, the method, in order to achieve personnel training.

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Transcending-Learning-Style in the Engineering Education

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Abstract. Transcending-learning style is an innovative learning style that is useful in engineering education. It is different from traditional accepted-learning and discovered-learning styles, which are two main learning styles used by engineering students. This new learning style is a significant way to help students to seek, discover, and nurture the creativity and giftedness. Students combine given knowledge and their own thought to develop new knowledge and thus transcend the quality and quantity of the given knowledge. In this paper, the characteristics of transcending-learning-style in engineering education and its value in developing students' innovative spirit and practical ability are discussed.

Keywords: Learning style, Engineering education, Transcending-learning-style.

1 The Characteristics of Transcending-Learning-Style in the Engineering Education

There is one learning style that is different from traditional learning style, which deserves special attention in engineering education. In this learning style, learners' learning doesn't stay on a given knowledge level, but on the basis of accepted learning, the learners get a deep discussion and explosion about the learning contents. In this process, learning is not only the knowledge expansion, but also enquire, query, and criticize the given knowledge and then analyze its shortcomings in order to form their own views. Eventually, learners combine given knowledge and their own thought to develop new knowledge and thus transcend the quality and quantity of the given knowledge. We call this learning style as transcending-learning-style [1]. The transcending-learning-style often happens among outstanding talents and it guides the students to develop analytical skills and problem solving ability.

According to the literal meaning, "transcendence" is to point to "beyond", "more than", namely to "breakthrough" the existing conditions or established limitation. In transcending-learning-style in engineering education, we advocate break through

L. Zhang and C. Zhang (Eds.): Engineering Education and Management, LNEE 112, pp. 297–303.
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the given knowledge in order to achieve self-creation. A word about "given", the subject is a teacher or an instructor. According to the requirements of engineering teaching, the teacher or instructor gives students a certain amount of knowledge and teach, or require students to explore more independently. In general, it's not enough for many students to learn the given knowledge from the teacher, so the students will seek more and more knowledge and set up a higher development goal. Transcendence is the intentionality features of the learning, indicating the subject's attitude of not being content with the current situation.

Transcending-learning-style in engineering education is a constant and progressive process in which learning activities never stay on a level of given knowledge or conclusion. Students reconstruct and analyze the knowledge through the process, and create and develop new knowledge. The levels of students' learning can be raised and the students' comprehensive quality can be enhanced. Transcending-learning-style in engineering education breaks through the teachers' range of knowledge and the limitations of understanding and acceptance of knowledge. Learners' outstanding performance is to actively learn and transcend the given knowledge. In fact, transcending-learning-style in engineering education is not only to make the students to transcend the given knowledge, but also to realize self-transcendence in order to develop both practical consciousness and practical ability.

Transcending-learning style is different from others in the following aspects:

(a)The acquired knowledge isdifferent

In accepted-leaning-style and discovered-learning-style in the engineering education, the knowledge we gain are prepared, but we just learn in different ways. In accepted-leaning-style, the teachers provide the learning materials while students just have to accept and understand the contents, therefore we do not need to the discovery of new knowledge. In discovered-learning-style of the engineering education, the students gain the knowledge in the process of "initially problem solving", rather than teachers present the final conclusions. In this process the students participate in the construction of knowledge and get the comprehension and experience, eventually find knowledge and conclusion teachers scheduled. The knowledge we gain in Transcending-learning-style in the engineering education is the new notions or new ideas beyond the given knowledge.

(b)Psychological Mechanism is Different

The psychological mechanism of accepted-leaning-style is "assimilation". Its producing conditions:1) the learning materials itself have logical meaning; 2) the students have meaningful learning attitude, i.e. internal learning motivation; 3) the students' original cognitive structure should have the corresponding knowledge to assimilate new ideas. The psychological mechanism of discovered-learning-style in the engineering education is "autonomy", whose producing condition is the students must rearrange, organize or converse the content by their own inquiry activity and conclude the fixed conclusion, and then put them into their own cognitive structures. The psychological mechanism of transcending-learning-style in the engineering education is "self-adjustment", "self-motivation" and "self-creation" and its producing condition is distinctive and specific idea generated in specified scene.

(c)The Role of Teachers is Different

Teachers play a leading and control role in accepted-leaning-style so the role is bigger than the one in discovered-learning-style in the engineering education in which teachers play a directive role. In Transcending-learning-style in the engineering education, students are the subjects in the whole learning activity, teacher's role is not to guide, but to encourage and incent.

2 The Basis of Transcending-Learning-Style in the Engineering Education

From the point of view of education psychology, there are two main kinds of learning styles that have been defined: accepted-learning-style and discovered-learning-styles. Based on the characteristics of classroom learning, David P.Ausubel established accepted-learning-style theory, which has important theoretical and practical significance [2]. According to this theory, teachers teach students in accordance with the assimilation patterns of the old and new knowledge to make students master systematic knowledge actively, flexibly and effectively, and to help students build a good cognition structure. Thus it is useful for improving the teaching quality, especially classroom teaching quality. However, the accepted-learning-style is basically limited to logical thinking and it has limitations to cultivate human being's all-round development, especially has a little impact for the creative ascension of human being.

David P. Ausubel thinks that "meaningful acceptance" is active and effective. To realize its initiative and validity, it must have two conditions: a) the students have meaningful learning intention, namely the intention of combining the new knowledge and relevant knowledge in cognitive structure; b) the learning materials have hidden meaning to the students, namely the learning materials have logical meaning, and can be linked with students' relevant knowledge in their cognitive structure. Therefore, the new knowledge both can gain the psychological meaning in the student's original cognition structure, and enable students to absorb new knowledge of cognitive structure to get transformation and reconstruction.

Acceptance, whether mechanical, passive or meaningful, has the characteristics of irreplaceable. The embodiments are: First, it can make students master more knowledge in a relatively short time. Teacher's transmission is the most fundamental and efficient way to let posterity accept and master the massive, rich knowledge of science and culture, accumulated by human beings through long-term practice and understanding activity. This study can make the students master the massive knowledge rapidly and avoid much unnecessary twists and difficult in the process of understanding. It's neither possible nor necessary to let students repeat the process of human being's discovery and forming of the knowledge. Second, it can give full play to the teacher's leading role and the internal function in scientific knowledge structure. Because this is a learning style that the teachers play a leading role in the learning process, the teacher will always provide students with learning cognitive framework and fixation point and help the students to make clear and form the learning motivation, maintain and centralize students learning

attention and develop the student's cognition structure in order to make learning become meaningful learning. Third, it's helpful for cultivating the student's habit and ability of obtaining the knowledge from books which is mainly formed in the activity of acceptance.

Based on the characteristics of classroom learning, David P. Ausubel establishes the meaningful learning theory, which has important theoretical and practical significance. Generally speaking, according to the traditional behaviorism learning theory, they always ignore human being's learning subjective initiative and the individual's subjective effort. But a portion of people in cognitive school put too much emphasis on individual's learning subjective initiative, but ignore the objective factors. David P. Ausubel admits that both of them have some reasonable ingredients, and saw their respective one-sidedness. He grasps the relationship between two aspects of subject and object, namely he emphasizes learning subjective initiative but doesn't ignore the function of knowledge system in learning process so that he can unify the knowledge structure and the cognitive structure dialectically. Judging from the practical significance, it has realistic directive significance for teaching work. Meaningful accepted learning theory is proposed based on the characteristics of students' classroom learning, thus it is easily accepted by teachers and used in the classroom teaching. Meaningful accepted learning theory provides psychological foundation for teachers to choose new teaching method effectively. Teachers teach in accordance with the assimilation patterns of the old and new knowledge and the realization of the principle of assimilation, in order to make students master systematic knowledge actively, flexibly and effectively and help students build a good cognition structure. So it is useful for improving the teaching quality, especially classroom teaching quality. However, the meaningful accepted learning is basically limited to logical thinking and it has limitations to cultivate human being's all-round development, especially has a little impact for the creative ascension of human being.

Which method we can use to breakthrough its limitations and inspire the students to use their mind to acquire knowledge in the teaching? American famous psychologist Jerome Bruner insists on adopting discovered-learning-styleto guide students to pursuit knowledge as scientists rather than just passively accept teachers' indoctrination [3]. In discovered-learning-style, with the guidance of the teachers, learners ask questions and absorb knowledge by themselves in the learning process. Students study, review, summarize, and then draw the conclusion, which is commonly designed by the teacher before.

Compared with accepted-leaning-style, the basic characteristic of discovered-learning-style advocated by Bruner is that the main learning content aren't given to students ready-made, but let the students themselves find these content, get the comprehension and experience, eventually find teachers scheduled knowledge and conclusion [4]. In other words, the first task of learning is to discover, then to internalize the discovery content as accepted-learning-style does, so that the learners can apply them in certain circumstances afterwards. Thus, Bruner's discovered-learning-style just has one more frontal stage than accepted-learning-style, i.e. discovery. Other aspects are basically the same [5]. Discovered-learning-style is still a way of accepting given knowledge. This "discovery" is the discovery of the given knowledge.

Through above analysis, one can find that transcending-learning-style is neither accepted-learning-style nor discovered-learning-style. Transcending-learning-style is independent of both learning styles but they are closely related. Accepted-learning-style and discovered-learning-style are the foundations for transcending-learning-style. Accepted-learning-style and discovered-learning-style are normally involved in the beginning of the learning process. On the basis of those above, transcending-learning-style may be applied and it ensures students' thinking to the direction of innovation, expanding and surpassing the current knowledge and skills.

Students cannot ignore the learning of the given knowledge when transcend. Because transcendence is based on the given knowledge, even if it is the transcendence of books, teachers, we also must first understand the knowledge on the textbooks and how the teachers taught. We should get a thorough understanding of the given knowledge and then to innovate. Because transcendence is established based on the acceptance and discovery, students can be able to achieve transcendence only to get better understanding of the given knowledge. As the basic characteristics of human being, transcendence must go through a real generative process in which Accepted-learning-style in the engineering education plays a significant role. In the past, because people emphasize the learning succession excessively, Accepted-learning-style in the engineering education and Discovered-learning-style in the engineering education are prevalent. Today, the proposal of Transcending-learning-style in the engineering education for students gives a new concept, a new kind of pursuit and a new realm so that it will greatly promote students' innovations on their learning paradigm.

3 The Value of Transcending-Learning-Style in Engineering Education

One of the important targets of modern teaching reform is to establish a new learning style to make the students become the real master of learning in order to improve their ability of innovation. Innovation has two characteristics: first, it is "new"; second, it must have value. Firstly, the "new" must be the things that predecessors never see, never do, or never think or realize. Secondly, the "new" is not equal to innovation and also needs to consider its value. Innovation under strict sense is generally difficult for students. Engineering education does not require students to undertake this innovation, but cultivating students' ability of innovation is the historical mission of contemporary education. Therefore, learning makes students to obtain not only knowledge and skills, but also thought, awareness and concepts, which are more precious than simple operation skills.

In current engineering education, teaching and learning styles emphases on passively absorbing engineering science and technology knowledge, thus underestimating the overall quality and ability development. Especially, creative thinking, innovation, problem solving skills and practical ability are not in the focus in today's engineering education. Today's graduates should have the ability and innovative spirit of engineering practice, in order to meet the requirements of high-level technical personnel. Traditional accepted-learning and discovered-learning

styles have not enough power to make students to adapt such high demanding social environment, while transcending-learning style has great impact on students to become outstanding graduates with both innovative abilities and practical skills.

Transcendence and innovation have distinctions and connections. For students, transcendence is innovation [6]. "Transcendence" in engineering education contains "new" features. But this "new" means the ingenuity, creative ideas and practices relative to their existing knowledge, to the books, or to the ideas taught by teacher. The difference between transcended and innovation is that the "new" in transcending isn't relative to the whole human beings; it is not required for "unprecedented", so the requirement in time and space is limited. To improve the reality one must begin from reality, and grasp all human processed existing ideas, methods and means, starting from learning to reform given knowledge. Learning can be a double-edged sword because it can cultivate creative spirit power, also can inhibit creative spiritual power depending on whether learning styles are applied properly [7]. Students' transcendence can be regarded as the new trial of innovation, which is prepared for strictly innovation in the future. Today's transcendence lays the foundation for tomorrow's innovation. Only through transcendence, they will achieve a comprehensive sense, namely strictly innovation [8].

Learning makes people have times stipulation, in this sense, a learning process is individual's process of socialization. Besides learning the given knowledge, Students must have some characteristics, quality, psychological mode, thinking mode in his living times in order to make themselves become practitioners in particular society and play the positive role in the process of practicing and reforming. To improve the reality, we must start from reality; we must grasp all the human being's existing ideas, methods and means, and we must start from reforming the given knowledge. Learning "both has the power of cultivating creation and has the power of inhibiting creation".[9]In teaching conditions, knowledge learning is limited in the teachers' teaching range and confined to the level of understanding and acceptations of the knowledge or find the preset conclusion, which may become a negative factors to bind human being's development and restrict social development. Most likely: learning more, bound more.

All the established values, ethics, aesthetic consciousness, thinking mode, even science technique gained from learning could become the "framework" to constraint human being's development. Learning gives the people reality and prescriptive, while transcending-learning-style in the engineering education is to deny this reality and transcend this prescriptive. The ideal learning is not only to see the possibility of learning objects' developments from the prescriptive of realities, but also to be good at transforming possibilities into reality. It also will make people establish the ideal of developing and transcending the learning object, and be good at change ideal to reality. In the engineering education cultivating innovative talents which unify not only ideal and reality but also consciousness and ability of transcendence is not only the contemporary tenet for cultivating students, but also the value of proposing transcending-learning-style

4 Conclusion

We introduced transcending-learning-style in engineering education that would help students become more creative and innovative, and develop better problem solving skills and practical ability. This learning style is not aiming to replace two existing traditional learning paradigms, i.e. accepted-learning and discovered-learning styles. On the contrary, three learning styles can be applied in the entire learning process of engineering education. Accepted-learning and discovered-learning styles provide students with the tools in grasping knowledge, while transcending-learning style makes learning process more effective and more valuable. Students would benefit from the transcending-learning style because it moves the perspective from understanding of common knowlegde into ability to develop new knowledge and problem solving skills. The transcending-learning-style is the trend of learning in the future.

Meaningful Accepted-learning-type is important and feasible, which is still the basic form of today's classroom learning. In order to satisfy students' spirit and heart desire, students must accept the essence of human culture heritage. As for the most learning materials, the students also specially need Accepted-learning-type, because the students may not reconstruct all the knowledge by Transcending-learning style. Discovered-learning-style in the engineering education is also a significant way for learning through which the knowledge we gain are more deeply, thorough and complete. What's more, with the students' self-study space becomes bigger and bigger, it is necessary and possible for students to learn in accordance with discovered-learning-style in the engineering education. However, we should see Transcending-learning-style is a kind of meaningful learning way in which teaching give students' learning some "rules", meanwhile, it let the students' thinking plugged in "transcending" wings and fly freely in broad thinking space. Teachers should not only "for knowledge to teach", more "for transcendence to teach".

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Research on the Scarcity of Educational Resources in China

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Abstract. The scarcity of educational resources in China was studied in this paper, using shadow prices as the evaluation index. And by using the method of input-output combined with linear programming, this paper constructed an input-output LP model. Then, this paper measured the shadow price of educational resources using this input-output LP model based on China's input-output tables in 1987-2007 and used the method of scenario simulation analysis to measure the shadow price of educational resources under different developing rates of education industry. The results showed that the shadow price of educational resources in China showed an overall decline trend from 1987 to 2007 and the educational resources' shadow price will gradually reduce with the development of education industry on the existing economies' scale.

Keywords: educational resources, education industry, shadow price, input-output LP model.

0 Introduction

In recent years, the education industry in China developed rapidly and the national financial education expenditure increased from 86.776 billion Yuan in 1993 to 1.044963 trillion Yuan in 2008, accounting for 2.51% of GDP in 1993 to 3.48% in 2008. The Ministry of Education released the "National long-term education reform and development plan" on July 29, 2010, which pointed out that: "Improve the proportion of national financial education expenditure accounting for GDP, and make the proportion reach to 4% in 2012."

With the rapid development of education industry in China, many scholars believed that the current educational resources in China are surplus. Yao Xianglian[1] considered that the current education supply in China is surplus; Tan Jinming et al[2] held that there existed the phenomenon of over-education, which would trigger series social problems. But others believed that the current supply of educational resources in China is still insufficient. For example, Yang Xiuqin[3] thought that the inadequate supply of educational resources in China is an indisputable fact and there is a serious supply shortage of educational resources in China; Wenji[4] considered that "the scarcity of high quality educational resources" had become a social consensus.

L. Zhang and C. Zhang (Eds.): Engineering Education and Management, LNEE 112, pp. 305–311.
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Therefore, scholars have not formed a consensus about the current scarcity of educational resources in China. While the study and evaluation on this issue can provide some reference for the formulation of relevant education policies, and it also has an important significance on the sustainable development of national economy and education industry.

Shadow price is the marginal price of resources, referring the increment of objective function caused by one unit increase of resources. Shadow price can fully reflect the scarcity of resources and objectively assess the value of resources. According to the linear programming theory and duality theory, there was always a dual problem for each linear programming problem, and the optimal solution of the dual problem was the shadow prices of the original problem; Meanwhile, the input-output technique completely revealed the relationship and mutual influence of the production and distribution of products in each department of national economy, and reflected the service condition of various energy by various industrial sectors [5]. Therefore, using the methods of input-output technique and linear programming to establish the input-output linear programming model can accurately measure the shadow prices of outputs at the background of coordinated development of national economy.

Based on the national value-type input-output tables in 1987-2007 compiled by National Bureau of Statistics[6], this paper constructed the input-output linear programming model and conducted a study on the shadow price of educational resources in China, so as to objectively evaluate the value and scarcity of educational resources and promote the healthy development of education industry in China.

1 The Input-Output Linear Programming Model and the Calculation Method of Educational Resources' Shadow Price

1.1 The Input-Output Linear Programming Model

$$\begin{cases} X - \left(I - A\right)^{-1} Y \le 0 & (2) \\ 0 \le X \le X_{up} & (3) \\ Y \ge Y_{low} & (4) \\ Y \le X & (5) \end{cases}$$

In which, equation (1) was the target function, indicating that the objective of this model was to maximize GDP, and GDP was gross domestic product, meant the sum of the increase of national economy in each sector(Z_j), Z_j equaled to the products of added value coefficient (a_{vj}) and total output (X_j) of the sector;

For equation (2), X was the total output variables of each national economic department, Y was the end-use column variable of each national economicdepartment,

and X and Y were the decision variables, A was the direct consumption matrix, I was the unit matrix, and $(I-A)^{-1}$ was the Leontief inverse matrix. $X-(I-A)^{-1}Y=0$ was the basic balance relation of input-output model, in order to expand the feasible solution domain and make the planning more general, this equation was rewritten as the inequality equation in this paper;

For equation (3), X_{up} was the upper column vector of total output in each sector, and as a constraint, it reflected the constraint of coordinated development of national economy;

For equation (4), Y_{low} was the lower column vector of final consumption in each sector, and it reflected the consumption and basic guarantee of reproduction to maintain the coordinated development of national economy;

The equation (5) defined that the total output of each national economy department was more than the final consumption.

1.2 The Calculation Method of Educational Resources' Shadow Price

The input-output linear programming model can calculate the shadow prices of output objects in each national economic department. According to the definition of education sectors in input-output tables by National Bureau of Statistics[7], we can take the education sectors as the education industry, and then calculate its shadow price.

According to the linear programming theory and duality theory, there was always a dual problem for each linear programming problem, and the optimal solution of dual problem was the shadow price of the original problem (SP). The value of SP is equal to the opposite number of corresponding inspection number in the eventually tableau of original problem, that is $SP=C_B B^{-1}$.

In which, $SP=(sp_1\ sp_2\ \cdots sp_n)$ was the row vector of shadow prices; $C_B=(c_1\ c_2\ \cdots c_n)$ was the value coefficient row vector corresponding to the base variable in the optimal solution of original problem; $B^{-1}=(p_1\ p_2\ \cdots\ p_n)$ was the inverse matrix of optimal basis, constituted by the corresponding column vector of each slack variable.

As the input-output table used in equation (2) of the above linear programming model was the value-type, and the X_{up} in equation (3) and the Y_{low} in equation (5) were also presented as the form of monetary value, so the educational resources' shadow price (SP_c) here actually represented the effect of one Yuan increase of educational investment on the optimal value of GDP under the existing scale of national economy.

2 Empirical Analysis

National Bureau of Statistics had compiled the national value-type input-output tables of 1987, 1992, 1997, 2002, 2007, and the prolonged input-output tables of 1990, 1995 and 2005. Based on the data in these input-output tables and through appropriate adjustments to the sectors in these tables, this paper conducted an empirical research on the educational resources' shadow price in China. Meanwhile, because of the availability of upper and lower indicator data, this paper also unified the input-output tables of each year into input-output tables of 11 sectors.

2.1 The Selection of Upper and Lower Indicator Data

(1) The Column Vector of Maximum Total Output X_{up}

X_{up} was the column vector of maximum total output in each department. Here the paper take the products of total output (X_G) and development pace of each sector in the input-output tables of each year as X_{up}, that was $X_{up} = (1+r)X_G$, (r was the department growth rates), and r was calculated from the relevant data in the corresponding year of the "China Statistical Yearbook" [8] .

(2) The Column Vector of the Lower Limit of Final Consumption (Y_{low}) in Each Department

Y_{low} was the column vector of the lower limit of final consumption in each department. For the convenience of study, the paper take the final consumption of each sector in the corresponding input-output tables as Y_{low}.

2.2 Empirical Results

(1) The Educational Resources' Shadow Prices in 1987-2007

The educational resources' shadow prices in China from 1987 to 2007 calculated by LINGO software were shown in Figure 1.

As we can see from Figure 1, during 1987 to 2007, the educational resources' shadow prices in China showed an decreasing tendency. From 1987 to 1992, the shadow prices of educational resources were more than 9.0, indicating that the educational resources supply was very scarce, the effect of one unit increase of educational resources supply on the optimal value of GDP was great, and constraints of the educational resources on the national economy were also obvious. While after 1997, there was a sharp decline in the shadow prices of educational resources, indicating that the educational resources supply was more and more adequate, the effect of one unit increase of education supply on the optimal value of GDP declined, and the constraints on economic development became less obvious.

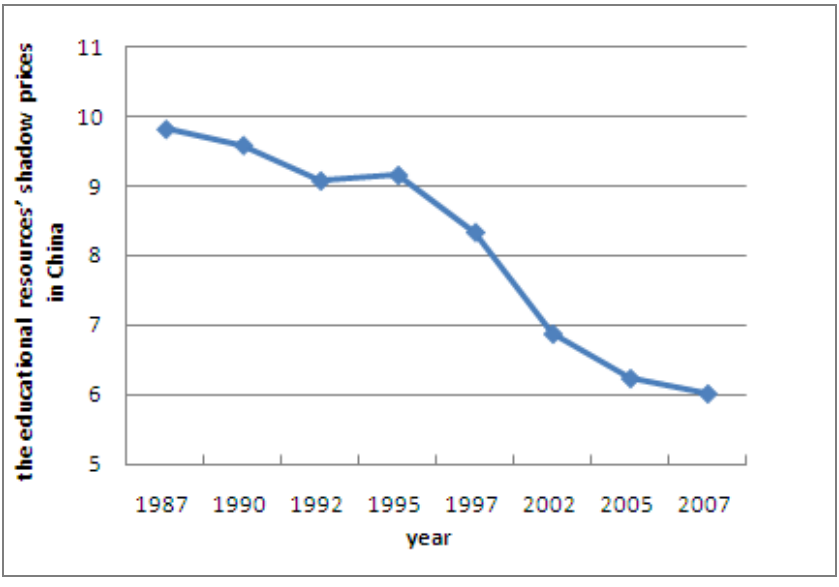

Fig. 1. The educational resources' shadow prices in 1987-2007

(2) The educational resources' shadow prices under different growth rates of education industry

As can be seen from Figure 1, the supply of educational resources was more and more adequate. Therefore, it was necessary to make such scenario simulation analysis - based on existing economic scale, if the scale of education industry was twice the size of existing scale, how will the educational resources restrict the national economy, and whether the educational resources can meet the excess.

Thus, based on the national economy size represented by input-output tables in 2007, in case of the assumption that the total outputs in other sectors were unchanging and the development pace of education industry was increasing, this paper measured the educational resources' shadow prices under different development growth rates of education industry, and the results were shown in Figure 2.

It can be seen from Figure 2 that, based on existing economic scale, the educational resources' shadow prices decreased with the increasing growth rate of the education industry, which indicated that with the expansion of the education industry scale, the effect of increasing one unit supply of educational resources on the optimal value of GDP was becoming smaller, and the constraints of educational resources on the national economy would be reduced.

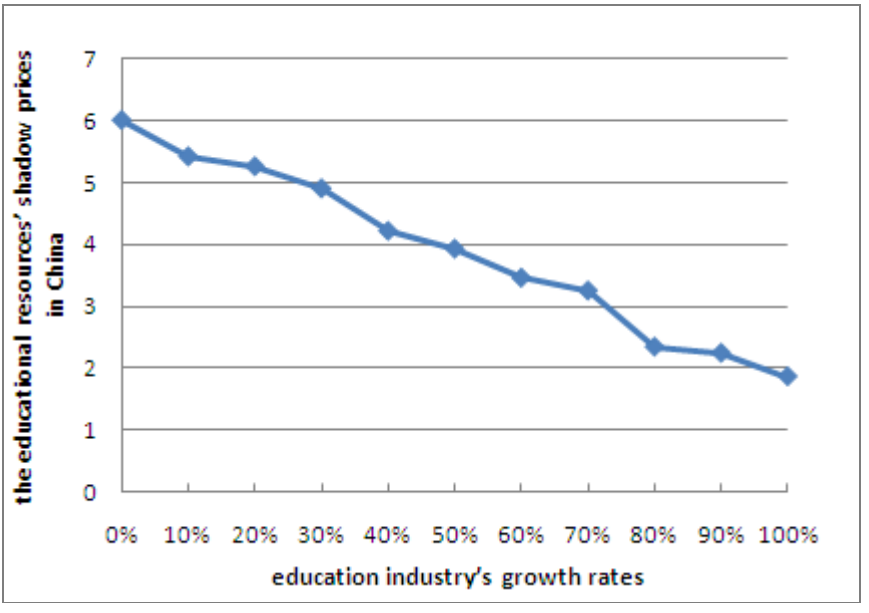

Fig. 2. The educational resources' shadow prices at different education industry's growth rates

3 Conclusion

Using the method of input-output technique combined with linear programming, this paper constructed an input-output linear programming model. According to the input-output tables in 1987-2007 compiled by National Bureau of Statistics and through the scenario simulation analysis, the paper calculated the educational resources' shadow prices in China for different development pace of the education industry.

Empirical results showed that from 1987 to 2007, the educational resources' shadow prices in China showed an overall upward trend. The educational resources' shadow prices from 1987 to 1995 were greater, while after 1995, the educational resources' shadow prices rose sharply. These results showed that before 1995, the supply of educational resources in China was deficient, and the constraints of educational resources on national economy were obvious, but after 1995, the supply of educational resources became more adequate. Empirical results also showed that, based on existing economic scale, the educational resources' shadow prices decreased with the development of the education industry. It means that the effect of increasing one unit supply of educational resources on the optimal value of GDP becomes smaller, and constraints of educational resources on the national economy will be reduced. These findings may provide some reference value for policy making of the education industry in China.

Acknowledgements. This work was financially supported by Research Topic in Public Bidding of Government Decision in Henan Province (2011B831) and the Doctoral Research Program Foundation in Zhengzhou University of Light Industry (2010BSJJ025).

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Teaching Reform of Computer Information Management Professional

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Abstract. The paper to higher vocational CIM (computer information management) specialty teaching reform as the main line, put forward the basic thought of the reform is to post knowledge requires as the foundation, the knowledge, ability and quality structure as the core, to design the reasonable theory and practice teaching system of computer information management, professional teaching reform has carried on the beneficial exploration.

Keywords: Higher vocational, CIM, Teaching reform, scheme.

1 Introduction

Since the latter half of the 20th century, information industry has become the most potential economic growth point. At present the global information industry average growth of 15-20% in, far more than the speed of growth in the global economy. China's information industry in recent 10 years, on average, 30% of the speed of the rapid development of national economy, has become the first pillar industries.[1]

2 Reform Major Teaching Goal

2.1 Reform Traditional Education Ideas

The higher vocational education objective for "training technology applied talents, theory for sufficient degree, emphasis on skills training and quality education as the core", emphasizing the education, the innovation education characteristic and lifelong education, professional technology required students practical ability.

2.2 Updating the Teaching Contents

A new teaching plan has of course system made two major adjustment, a theory course is the compressed with appropriate for sufficient degree, arranged for more practical training course); it is increased practical, novel, and can satisfy the industry and unit of choose and employ persons needs course. Features

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2.3 Reform Teaching Methods

Will be in professional teaching used in great quantities in the modern teaching means, improve class information capacity: based on laboratory practice and training base for students from experiment to deepen understanding and mastering knowledge, in practice training, improve skills. At the same time reform exam system, increase skills assessment to the skill levels of sex as a main assessment and evaluation of the main standard students.

2.4 Structure "Double Teachers" Team

Reform of teachers team strong theoretical knowledge, practice knowledge comparatively weak condition, strengthen the training of teachers' team and the introduction of higher vocational education, the establishment of a adapt to thecharacteristics of The Times, the hierarchy, the full-time and part-time combined with high quality high levels of double division teachers team, and a push for teachers' goal management, project management mechanism and incentive mechanism.

3 Conclusion

3.1 Understand the Social Needs

To implement successful enterprise informatization for extensive social investigation, know a business in the first line of work in the information management and technical staff and managers to the content of the work, this type of work requires the necessary knowledge, ability and quality structure, and learn from the experience of the higher vocational education at home and abroad, the vocational education basic law, strengthen technology using ability, innovation ability and the basic quality of the training, get the training plan and make professional talent training mode first-hand material. Combined with the actual situation, information management professional main position (group), knowledge and ability structure required to design table 1:

Table 1. To post, knowledge and ability structure requirements

Professional post	knowledge structure	capacity requirements
Enterprise management information system maintenance and development	higher mathematics, professional English, data structure, the principle of the computer and assemblers, principle of operating system, principle and application of database, c++, computer network and the Internet, management, management information system, object-oriented technology	1) master management and the management information system of basic knowledge 2) master database principle and development technology 3) will maintain general management information system, and can do simple development 4) master a large database of host operating system of using and maintenance

3.2 Construct Professional Talents of Knowledge and Ability System

According to the information management professional main position (group) for professional talents, knowledge and ability request, to construct the ability training for the foundation of knowledge and ability structure, outstanding technical application ability and basic quality of the training. As shown in figure 1 below.

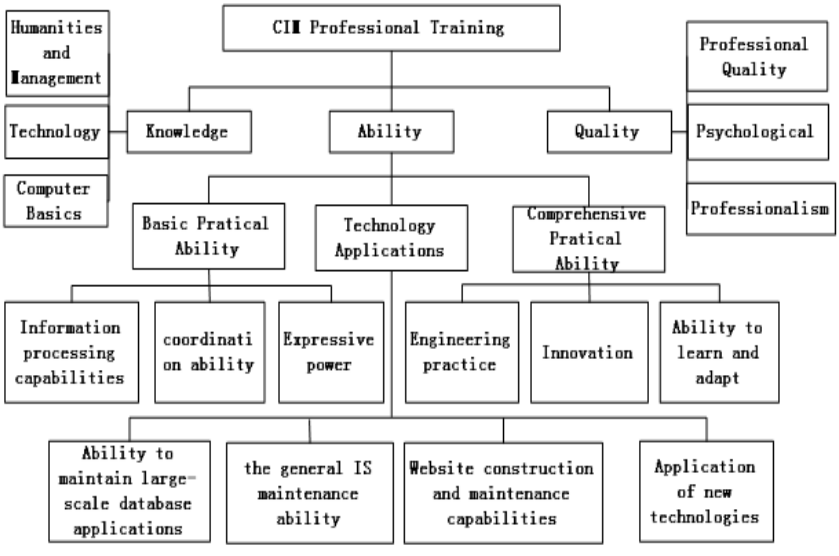

Fig. 1. CIM of knowledge, ability and quality structure model

The above structure is based on computer information management specialized technical application ability training as the main line to design, the embodiment of the first national vocational teaching conference of the proposed four requirements: has the formation technology application ability necessary basic theoretical knowledge and professional knowledge; With strong comprehensive use of various knowledge and skills of the ability to solve practical problems; Have good professional ethics, love their work, work hard, industrious, and people in the spirit of cooperation, feels at ease in the production, construction, management and service first line work; Have strong psychological quality and good health. Highlight the general practice ability, technology application ability, the training of comprehensive developing ability, taking into consideration the computer information management work in the tools necessary to culture foundation knowledge, basic computer knowledge, large database and management information system of professional knowledge, also considered the students' individual character development, employment flexibility and ability of sustainable development quality requirements.

3.3 Design Theory Teaching System

According to the professional training target and "must be enough", "the principle of novel effect", in order to cluster course construction as the core, constructing theory teaching system. After the reform of the teaching system of cultural foundation theory, computer basic, management foundation, management information system, network and application five knowledge module. After the reform of teaching theory system weakened the course subject system, strengthen the knowledge of accumulating, applied and novelty, highlighted the basis of professional theory teaching application characteristics, pay attention to the humanities and social science and professional technical education combined and infiltration, takes into account both the personnel training pertinence, applicability, and consider the insurance industry and other employing units of amphibious sex and talents, the sustainable development.

3.4 Design Practice Teaching System

According to the professional training objectives and abroad experience, you design a new practice teaching system, including professional basis, computer technology training, training comprehensive practice three modules. In the new experiment practice teaching system, we pay attention to training of comprehensive practical skills, increase the experimental depth and the breadth, in order to make students further practice, from a wider and deeper levels of the train of thought of up to analyze and solve problems. According to production practice research situation optimization experiment content, according to the production practice and scientific research of the problems, and provide some research experiment practice, let students understand the experiment practice in production and research the role with Internet explorer, of the role of the experiment, the actual exercise, and has further improve its ability to solve practical problems. First let students to design scheme, and make the practice implementation steps, in the final analysis, goals and existing problems, and explores the solving methods.

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A Project-Oriented Model of Graduation Thesis in the Industrial Engineering Undergraduate Program

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Abstract. This paper analyzes the skill training problems occurred in graduation theses of the Industrial Engineering (IE) undergraduate program in the University of Science and Technology, and suggests a project-oriented model to solve the problems. It firstly examines the range of skills which should be developed to be a qualified industrial engineer. It emphasizes that the skills can be trained through the graduation thesis in undergraduates program. Nextly, a project-oriented model of IE graduation thesis is proposed, which contains work breakdown structure and schedules. Finally, the paper summarizes the results of the model for tutors on instructions of graduation theses in practice. It concludes that the proposed model is effective in terms of IE undergraduates' skill training and developing.

Keywords: Graduation Thesis, Skill Development, Industrial Engineering undergraduate program, Project Management.

1 Introduction

Industrial Engineering (IE) is considered as a discipline concerned with the optimization of complex processes or systems. As a research field, its methodology emphases on the analysis and synthesis, the mathematical, physical and social sciences as well as the principles and methods of engineering fields to specify, predict, and evaluate the results to be obtained from such systems or processes [1].

Graduation thesis is the last project that undergraduates are supposed to complete for their university education. As a part of the Industrial Engineering (IE) undergraduates program in Wuhan University of Science and Technology (WUST), graduation thesis enables undergraduates to think industrial facts critically and empower their problem-solving capabilities. Through the graduation theses, undergraduates can gain their capabilities as an industrial engineer. However, some graduates think they should have taken advantages of the graduation theses to build up their capabilities and skills. Moreover, many tutors in IE department in the WUST feel that seniors' skills are not trained enough through the graduation theses.

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This paper aims at this disappointing problem and it firstly examines the range of skills should be trained through the graduation thesis. Secondly, a project-oriented model of IE graduation thesis is proposed to tentatively solve the problem. Finally, the paper summarizes the consequence of the model in practice. It concludes that the proposed model is effective for tutors on instructions of graduation thesis for IE undergraduates.

2 Development of Skills through Graduation Thesis

The IE graduation thesis is important to seniors who will be qualified industrial engineers. Students enrolled in the IE undergraduate program are supposed to consolidate their academic learning, synthesize and analysis information, integrate problem-solving thinking into what they have learned through graduation theses. Therefore, the graduation thesis can facilitate creativity, which is essential to an industrial engineer.

Through the training of graduation thesis, an IE student should be well prepared to be an industrial engineer. Nevertheless, when we examined some applications employed in the graduation thesis in IE program of the WUST, which are frequently used by industrial engineers as well, the facts sometimes are disappointing. Those skills, like MS® Office, AutoCAD, simulations, programming and writing, are supposed to be trained or gained through graduation thesis. Fig. 1 shows the results from the WUST IE underrates' final theses from 2006 to 2011. From the Fig. 1, over one-third of the graduates thought they were trained no special skills in the finial thesis. And some powerful skills to an industrial engineer like simulation, Excel and programming are almost the least trained. The results seemed really frustrating, given the aim of graduation thesis is to foster student capabilities.

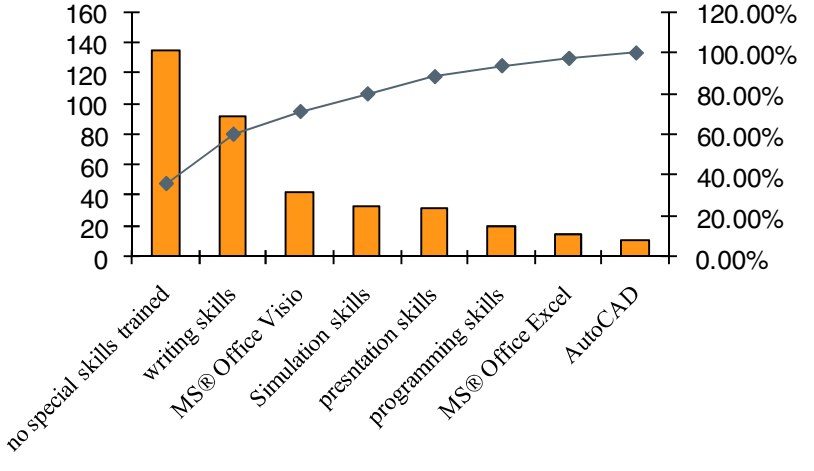

Fig. 1. Skills Trained through IE Graduation Theses in WUST

3 A Project-Oriented Model of Graduation Thesis

3.1 Project Management of Graduation Thesis

Project management is the discipline of planning, organizing, securing and managing resources to bring about the successful completion of specific project goals and objectives [2]. A project is defined as a temporary endeavor with a definite beginning and end constrained by date or cost. The undertaken project is supposed to meet unique goals and objectives. The temporary nature of projects is distinct from business operations, which are repetitive, permanent or semi-permanent functional work to produce products or services [3].

Table 1. Work Breakdown Structure of Graduation Thesis

Event	Due Date (the end of the week)	Requirements	Resource	Person in charge	Supervision
Read extensively	1st	N/A	Books, Journals	seniors	tutors
Preliminary topics	1st	N/A	sample papers	tutors	N/A
Introductions on research	2nd	N/A	sample papers	tutors	N/A
Practicum	3rd	Information and data collected	Financial support	seniors and tutors	University administration
Literature review	5th	A report on the literature reviewed	Books, Journals	seniors	tutors
Choose a topic	6th	N/A	N/A	seniors and tutors	University administration
Thesis outline	7th	Contents with subtitles	Example papers	seniors	tutors
Research and analysis	10th	N/A	Books, Journals, computers, application packages	seniors	tutors; University administration
The first manuscript of the thesis	13th	Well constructed and formatted	computers, application packages	seniors	tutors
The final manuscript	15th	Revised and nicely formatted	computers,	seniors	tutors; University administration
Thesis debate	16th	N/A	N/A	seniors	tutors; University administration
Grading the thesis	17th	N/A	N/A	tutors	University administration

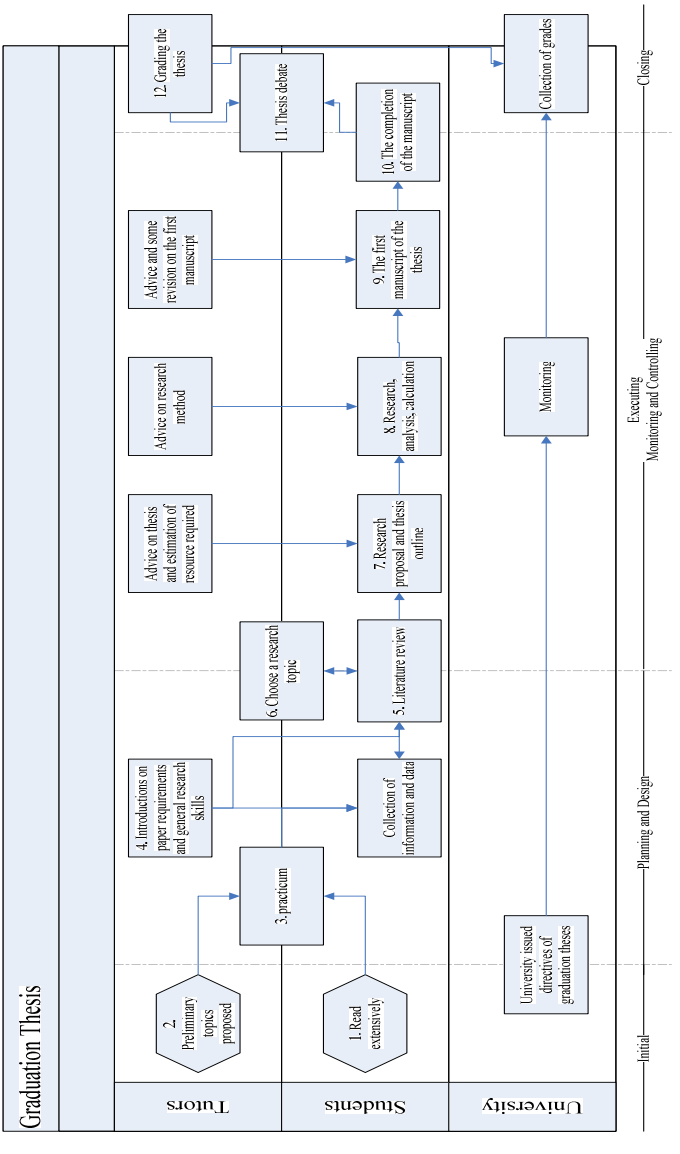

Fig. 2. Process of Graduation Thesis

To a student, the graduation thesis is definitely a project because the start date and the end date are defined according to the university calendar. Moreover, the thesis can partly fulfill the completion of his or her university study, which is the objective of the final project. To a tutor, instruction of graduation theses can be treated as a project. Hence, a project-oriented model of graduation thesis is proposed to bring all seniors, tutors and university together, in order to tackle the problems analyzed above.

3.2 A Project-Oriented Model of Graduation Thesis

Being a project, a work breakdown structure (WBS) and the process of the graduation thesis must be developed, which are essential to a project-oriented model. The proposed model of graduation thesis is shown in Table 1 and Fig.2.

The WBS of graduation thesis, as shown in Table 1, provides a common framework for the overall planning and control of a graduation thesis. In the discipline of project management, the WBS is developed by starting with the end objective and successively subdividing it into manageable components in terms of size, duration, and responsibility. In Table 1, the WBS is defined from the following five sides: schedule, requirements, resource, person in charge and supervisions. With the WBS of the graduation thesis is developed, the process of graduation thesis can be scheduled in Fig. 2.

3.3 Outcome of the Project-Oriented Model in Graduation Thesis

The proposed model of graduation thesis is effective both to students and tutors. The model was first conducted by the author in 2008 with seven seniors. The author has been the tutor of graduation thesis for six years with 37 seniors. Their claim of skills trained was demonstrated in Fig. 3. The tutored students who

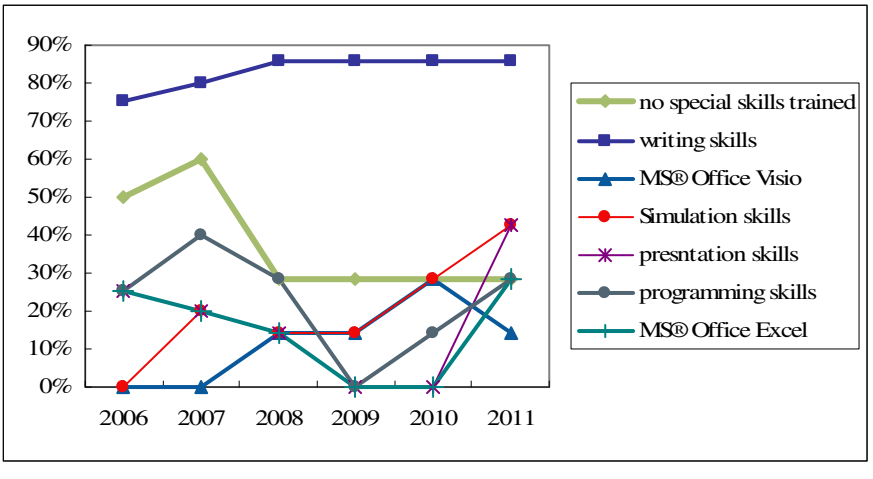

Fig. 3. 37 seniors' claim of skills trained though the graduation theses

claimed that they were not trained with special skills accounts for 35.1%, which is almost the same in Fig. 1. However, the figure remains at 28.7% from 2008 until now, when the model is in practice. By the model, students are well aware of how to get started with their graduation thesis, while tutors can instruct more clearly.

4 Conclusion

A qualified industrial engineer should be creative and innovative with wide range of theories and practice. In university study, the Graduation thesis is expected to enable seniors to be an engineer. When dealing with a problem, methodologically speaking, IE may considerably overlap with other disciplines such as Operations Management, but the engineering side tends to emphasize extensive mathematical proficiency and usage of quantitative methods. Hence, some powerful applications are required in the IE graduation thesis. This makes IE much different from other management majors.

However, the fact is some seniors are slack their duty in graduation theses and tutors are confronted with the difficulties in dealing with them. A project-oriented model of graduation thesis is proposed with well established WBS and process in order to tackle the problem. The model is in practice from 2008 to 2011. The consequence is in seniors and tutor's satisfactory. Therefore, the proposed model is effective.

Acknowledgments. The research is supported and financed by the College of Machinery and Automation, Wuhan University of Science and Technology (WUST). The authors are grateful to anonymous referees whose valuable comments helped to improve the content of this paper.

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Study of Chinese Copycatting Mobile Phones' Competitive Advantages Based on the Theory of Disruptive Innovation

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Abstract. In recent years, the rapid rising of Chinese copycatting mobile phones has made mobile phones industry shuffled. As innovative application electronics accordant with national conditions of China, copycatting mobile phones plays a significant role in solving problems of employment and enhancing the local economic development. Therefore, copycatting mobile phones industry should not be totally denied. This paper, based on the disruptive innovation theory, considers the advent of copycatting mobile phones is exactly a disruptive innovation characterized by low-end disruptors, and an analysis of copycatting mobile phones' competitive advantages is made. In the end, the normalized and branding development of copycatting mobile phones is proposed.

Keywords: Disruptive Innovation, Copycatting Mobile Phones, Competitive Advantage.

1 Introduction

"Copycatting" is derived from the mobile phone industry in China and begins to become popular. The copycatting mobile phone with its civilian, rapid and imitative features quickly swept the country in many low-income consumers. According to the research released by US market research firm iSuppli, the sales of copycatting mobile phones in mainland is about 228 million and increase 43.6% compared with the sales in 2009.The sales of copycatting mobile phones is expected to reached a peak of 255 million in 2011[1].

Undeniable, copycatting mobile phone industry exist illegal and grey side, but these issues are the level of consolidation that should be standardized. As innovative application electronics accordant with national conditions of China, copycatting mobile phones plays a significant role in solving problems of employment and enhancing the local economic development. This paper based on the disruptive innovation analysis the competitive advantage of copycatting mobile phone industry.

2 Theory of Disruptive Innovation

In Christensen opinion, maintenance innovation is to improve the performance of existed mainstream products and make great contribution to its improvements, and

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disruptive innovation is based on the low end of the market and has disruptive effect to the mainstream market. The "damage" refers to the disruptive effect on the competition rules and advantages in mainstream market. Disruptive innovation aims to pursuit of unconventional, and realize the great-leap-forward development. The continuous innovation aims to improve the current situation and pursue excellence[2]. Disruptive innovation is a great challenge to current status and it can bring great damage to some successful enterprise.

For disruptive innovation, Christensen put it into two classes: the new-market disruptors and the low-end disruptors. If an innovation aims at a number of customers who lack of money or skills and cannot buy things they need, and the new product is satisfy these need, this is a kind of new-market disruptors. The new product is cheaper, easier to use and makes a new group easy to possess and use. Low-end damage is that under the current market and value system, the industries attract the low-end mainstream business customers by the low-cost business model and develop themselves. These customers also buy mainstream product before, but the prices for them is more expensive, so the amount of purchase they buy is probably small or not buy, and as soon as the prices of similar products can accept, they will be happy to buy. The low-end market destroyer aims to expand the low-cost business model to the products that can bring more profit to the enterprise and the consumers are trying to get[3]. The author thinks that the disruptive innovation of copycatting mobile phone has low-end damage effect.

3 The Disruptive Innovation of Copycatting Mobile Phones

The disruptive innovation of copycatting mobile phone comes from the turn key solution of the Media Tek Inc in Taiwan, and it can also be called "turn-key solutions". The Media Tek Inc integrated the upstream and midstream of the mobile phone industry and completed the chips, software platforms and designation. The mobile phone manufacturers only need to purchase the screen, the camera, the shell, the keyboard and other simple parts to produce mobile phones. Therefore, downstream mobile phone manufacturers can continuously introduce new product in low-cost and short time without R&D team, high-tech labor and complex supply chain of circumstances. Soon, the copycatting mobile phones with large screens touch and handwritten, MP3, MP4, support for expansion cards and Bluetooth are introduced to the market with great speed. And these functions, which are only in high-end mobile phones, become the standard of mobile terminal in a short time.

The copycatting mobile phone carried out the destruction of the mobile phone market successfully with the Media Tek's "turn-key" chip. Mobile phone production is two completely different models before and after the changes in the technology[4]. Figure 1 shows the model of production before the "turn-key" solution. Mobile phone manufacturers is the center, it can development or integrate, such as handwriting, Bluetooth, camera and other technologies. It takes 6-9 months to develop a new kind of mobile phone.

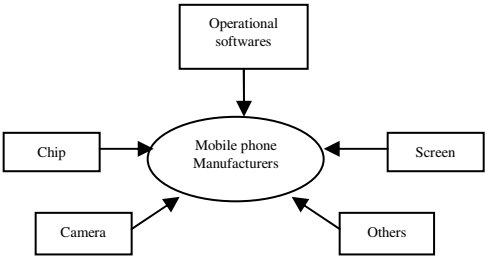

Fig. 1. Phone manufacturers centered manufacturing mode 1

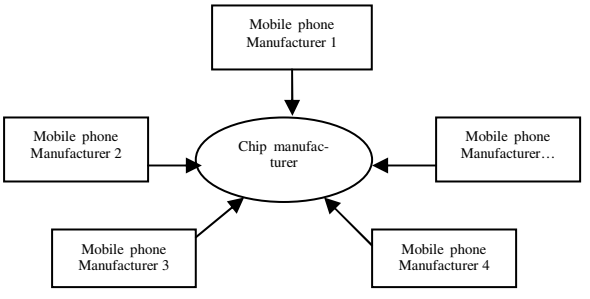

Fig. 2. Chip maker centered manufacturing mode 2

Compared with the model in Figure 1, Figure 2 manufacturing model is entirely different. Mobile phone manufacturers abandon the research of key parts, and these parts are entirely supplied by the Media Tek. The mobile phone manufacturers only design the shell, shape and other parts of the mobile phone based on the key chip, and it can develop a new mobile phone in 3 months.

4 The Competitive Advantage of Copycatting Mobile Phone Based on Disruptive Innovation

The manufacturing of copycatting mobile phones in China is based on Media Tek's disruptive technology turn-key, and it is a disruptive innovation with the low-end market disruption and distribution center. Here are its competitive advantages:

4.1 Low Cost

The advantage of low cost is the "killer" of copycatting mobile phones to tap the market. The manufacturers of copycatting mobile phones imitate the successful mobile phones and minimize R&D investment as low as possible. Most of the copycatting mobile phone factories, the production environment is poor, the costs of labor is low, and it has no formal testing or testing after assembling, which saves a

large fee. In the Pearl River Delta region, copycatting industries have formed a business cluster, which effectively reduces the logistics costs. In addition, the mobile phone firms mostly through distributors, network, TV direct sales, distribution center, Huaqiang North and mobile phone stores for sale, and most of them have no after-sales service. These not only shorten the channel, but also reduce costs[5].

At the same time, the price of copycatting mobile phones is very low, also because manufacturers don't pay VAT. Formal enterprises need to pay VAT, and it takes 400-500 thousands to experience the prototype and 200 thousands to test. And the design fees increase 10-20 yuan per phone, so the mobile phone would cost 150-200 yuan more than the copycatting mobile phone[6].

4.2 Imitate and Innovative

The advantage of low cost is the "killer" of copycatting mobile phones to tap the market. The manufacturers of copycatting mobile phones imitate the successful mobile phones and minimize R&D investment as low as possible. Most of the copycatting mobile phone factories, the production environment is poor, the costs of labor is low, and it has no formal testing or testing after assembling, which saves a large fee. In the Pearl River Delta region, copycatting industries have formed a business cluster, which effectively reduces the logistics costs. In addition, the mobile phone firms mostly through distributors, network, TV direct sales, distribution center, Huaqiang North and mobile phone stores for sale, and most of them have no after-sales service. These not only shorten the channel, but also reduce costs[5].

4.3 Keen and Quick Market Reaction

A rapid market reaction capacity of an enterprise is a reflection of overall strength, and it can also be regarded as core competitive power in the market. Copycatting manufacturers have sharper market sense than most regular brands, and they focus on the latest trends and advances in technology, such as the multi-touch technology and eight megapixel cameras. They can introduce mass production to the market in less than three months if they get a brand of mobile phone[6].

The copycatting mobile phone manufacturers can produce a prototype in eighteen days, and it only takes forty five days from order to delivery. The brand mobile phone from planning to market needs at least six months. Compared to brand mobile phones, copycatting mobile phone firms have a price advantage, and can introduce new products fast.

4.4 Solidarity and Cooperation

Each phone in the copycatting industry chain link, resource sharing and cooperation than competition can be described as the most significant feature. To Media Tek chip-based, whether it is upstream of the design and manufacturing resources,

or the downstream production and marketing chain to work closely, and they seem to be in the same industry chain. Rapid integration of manufacturing resources, not only shortens the product development and production time, but also reduces the cost.

5 Summary

A series of problems are hidden behind the popularity of copycatting mobile phones. There are appearance design infringements in copycatting mobile phones. Some scholar pointed out that the biggest flaw of copycatting mobile phones is its disruption to the "ecological balance" of domestic mobile phones. Because of its low cost, it brings disadvantage to regular mobile phone firms in terms of price. This confusion pattern has bad effect on domestic mobile phones to be bigger and stronger, and results in industry-wide less competitive. In addition, the copycatting mobile phone firms have after-sale service problems, and these firms are usually small, so it is difficult for them to establish a national service system.

However, the advantages of copycatting mobile phones and its development prospects should not be underestimated. The copycatting enterprises need to grasp the low end market and to do it well. They should strengthen the quality control of the phone, improve service levels, build their own brand gradually in the process of expanding sales, and increase low-end consumer brand loyalty. The development direction of copycatting mobile phone firms will be formalized and branding.

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Discussion on Local Universities Relying on Cultivating Innovative Talents of Characteristic Discipline

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Abstract. Discipline construction is the basis of the scientific development of local universities. This paper analyzes the current situation and existing problems of discipline construction at local universities. This article points out that relying on characteristics and advantages of disciplines at local university, through scientific research promoting teaching, interaction of university-industry collaboration, research assistant, interactive production and research, innovative teaching staff, innovative teaching material system, and innovative practice teaching methods, to integrate scientific research, education and innovative of personnel training, and comprehensively to train high-quality and innovative talents.

Keywords: Innovative Talents, Local Universities, Discipline Construction.

1 Introduction

Development is the universities' top priority. Discipline construction is the base of the scientific development of local universities, and the core of local universities' connotative development. To seek development, Local universities must be placed on the priority development of discipline construction to boost the status of the overall development. Innovation is the source of economic development, technological and social advance, also is the soul of national progress. The aim of the innovative education is to train creative spirit and innovative capacity. Carrying out creative education and training of qualified personnel are the major era proposition, the strategic task of achieving the goal of building a well-off society in China, as well as the important issue of the 21st century higher education reform. Training a large number of innovative talents, creating a favorable environment conducive to talent, making full play of the enthusiasm, initiative and creativity of talents, are building an innovative country's strategic initiatives. The construction of an innovative country relies on creative talents. Innovation and creativity in form and training process of higher education institutions are closely related. Economy and information era, not only poses a severe challenge for the innovative ability of undergraduates, but also pregnant them a good opportunity for creative ability. Higher education is the main channel to train senior personnel. Thus it

L. Zhang and C. Zhang (Eds.): Engineering Education and Management, LNEE 112, pp. 329–334.
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is especially important to create a generation of high-quality personnel whom adapt to the requirements of the new period,we should enhance training the innovation ability of students, strive to improve their awareness of innovation, creativity and entrepreneurial spirit. Currently many local universities carry out the task which correspond the Ministry of Education undergraduate teaching level evaluation index system. However there is very little research and practice for combination between the advantages subjects and cultivating innovative characteristics of talents.

2 The Development of Discipline Construction and the Present Status of Training Innovative Personnel at Local Universities

The ability of independent innovation is not only the core of national competitiveness, but also the universities'. Therefore, enhancing the ability of independent innovation is the prerequisite for universities to gain the initiative and establish the image in a highly competitive situation and pattern at home and aboard, as well as an important support for universities to contribute to the state, the nation, the regional economic and social development. Currently, local universities existing the following problems in the development of the discipline construction and the training of creative talents.

The concept of cultivating creative talents is conservative. In the domestic institutions of higher learning, a teacher-centered instruction that passing the teaching content to students by teaching and multimedia assistant has been occupying the classroom teaching for a long-term, which ignores the students' initiative and creative thinking ,also inhibit the growth of creative talents. In this way, students gradually develop a "three no" situation of "no want", "no asking", "no thinking". They don't have the habit of asking "why", so the divergent and critical thinking is bound, while the new ideas and new concepts are excluded. During the learning process, the students passively accept knowledge, and the positive initiative can't play.

The atmosphere of cultivating creative talents is not thick. Many univerisities of higher learning, especially local univerisities think that cultivating creative talents is the duty for high level universities, and the personnel training objectives for graduate students, which have little to do with local univerisities' undergraduates. Therefore, the concepts of local educational institutions have some more utilitarian and impetuous thoughts. They do not will to create a lively, democratic creative atmosphere at all, but conserve the traditional way of thinking which seek not to be meritorious, but only to avoid blame.

The teaching staff of cultivating innovative talents is not strong. Training a number of innovative teachers is a prerequisite of cultivating innovative talents, a high level of teaching staff is the most important guarantee of cultivating high quality talents, and teachers are the key to cultivating innovative talents. Due to both congenital and acquired deficiency, local universities take their place in the

field of high education in the nation, but there is still a long way to go. Many excellent teaching teams are concentrated in key universities, but there exist serious shortage of innovative teachers in local universities.

Practice teaching of cultivating innovative talents is lagging behind. Practice teaching plays a vital role in cultivating innovative talents, but the practice teaching in many local universities is bound by a fixed model for a long time. The contents of projects are old and monotonous. The development of practice teaching of cultivating innovative talents in local institutions is still in the initial stage of immature.

3 Adhere to the Scientific Development, Promote the Discipline Construction and the Cultivation of Creative Talents in Local Universities

Universities are not only the base of innovating knowledge and training creativity talents, but also the core of the discipline construction. To do a good job in cultivating creative talents under the new century, we must first fully understand the meaning of the discipline construction, pay much attention to the discipline construction, combine the discipline construction and training creative talents. The superior characteristic discipline has not only a number of excellent top-notch talents, but also the major scientific projects and important technological achievements. It is an important driving force of industrial development. It is also the symbol of characteristics, comprehensive strength and core competitiveness of the universities.

Refining the direction of the advanced characteristics discipline, and promoting the cultivation of creative talents. From the reality of the superior characteristic discipline, local universities establish the development with distinct features of "creating superiority by characteristics, seeking development by innovation". The construction of the advantage characteristic discipline takes the domestic advanced level as the goal, to make itself bigger and stronger. We should give full play to the characteristics of discipline, try to get national or industrial major projects, solve the major technical issues in the subject areas, to create innovative software and hardware conditions for the training of first-class talents. To take our universities for an example, we have the "key laboratory of manufacture and test techniques for automobile part, ministry of education", the "chongqing research center for mould engineering technology" and the "chongqing key laboratory of mould technology" as the platform for research. We rely on the advantage characteristic discipline-materials processing engineering, to make the mold technology leader in the western region.

With the construction of the dominant characteristic as the leader, foster innovative team of teachers. Cultivating innovative talents can't be separated with creativity and innovative spirit of the teaching staff. The level of creative quality of teachers and the sense strength of the innovation, directly relate to the smooth realization of innovative education, relate to the students with innovative potential can come to the fore. Constructing a teaching faculty with high-quality, optimized

structural, competent and efficient, dynamic and stable is the key of discipline construction and cultivating innovative talents. To this end, mainly adopt the following measures: (1) Selecting leaders of dominant characteristic discipline construction, implementing the system of academic leaders responsible for. For example, the school of materials science and engineering through the "Bayu scholars", introduce subject leaders. (2) Strengthening the leadership, do a good job of talents introduction. According to the development of characteristic discipline, determine the introduction of talent planning, especially introduce doctors or professors with domestic and international first-class highly educated to our universities. (3) Young teachers training system. Actively encourage young teacher in-service Ph.D., encouraging middle-aged mainstay teacher in further education. (4) Youth mentoring. Implementing the research projects as a link, give full play to the “mentoring” role of the old teachers of advantages characteristic discipline, to train the middle-aged mianstay teachers. (5) Training system for young teachers in enterprises. As young teachers generally lack the practical ability relative to theoretical knowledge, we regularly send young teachers to the enterprises for training, carry out innovative research and guidance, so that teachers can receive industry background and industry experience. Then they can teach students to apply knowledge and cultivate students of creativity, practical skills and love of the industry's professionalism. (6) In order to change the abuse of teachers from school to school, we can occasionally employ outstanding excellent engineering and technical personnel from enterprises to teach in schools, provide the help of more innovative practices with young teachers at the same time.

Strengthening the system of innovative teaching material construction, and deepening teaching reform. To innovate teaching of advantage characteristic discipline, the classroom is the main positions, and the teaching material is the key. Aimed to the construction of teaching materials generally lags behind the development in china, basing on the original materials and combining with the aim of training creative talents, strengthening the construction of featured courses and absorbing the latest scientific research of the subject, we prepare a high level of teaching materials and handouts. Through the reform of teaching, promoting the teaching comprehensively, we can cultivate high-level innovative talents whom adapt to the requirements of the knowledge economy era.

Constructing three-dimensional practice teaching system, and strengthening students’ hands-on ability of innovation and practice. Cultivating innovative talents is based on practice. Dominant characteristics of disciplines focus on a number of advantages of resources, so in connection with the status of too attached to teaching the theory or theories out of touch over the past practice teaching, we need to strengthen the role of practical teaching in fostering creative talents. (1) Adhere to the “student-centered, teacher-led” concept. Design experimental teaching contents and methods around students, so that the students can have more space to develop themselves. Give students more autonomy of studying, and change the traditional “indoctrination, spoon-fed” experimental teaching method into “heuristic” method. Apart from some basic confirmatory experiments, we should set some designing and comprehensive experiments as many as we can. (2) Focus on cultivating students’ practical and creative ability. Let the students their

own hands, independently thinking, independently completing the task, obtaining knowledge and ability by experimental process. (3) Reform the way of experimental examination. Don't evaluate of experimental results by the accuracy of experimental results, but focus on experimental methods, process, analysis and treatment of the problems. Give students more space for free thinking and encourage students to divergent, exploration and innovation. (4) Let the experimental teaching for professional courses set alone. Make sure of basic and professional experiments are all designing and comprehensive experiments, and establish an open laboratory in a planned way to improve students' ability of analysis and solving problems, also to foster students' ability of innovative thinking.

Chang ideas, and firmly establish the "students" based concept. Vigorously promote innovative teaching methods. We must change simply regarding "teaching" as important into both "teaching" and "learning" important. Therefore, we must firmly establish the "students" based concept, which is changing teacher-centered and book-centered idea into learning-centered and students-centered. Teachers should vigorously implement the multi-dimensional interactive teaching to simulate students to think creatively. Take as an example, we should enable the students design products or molds innovatively and design discussion based on their speciality and interest. During the discussion, do not simply deny the students as long as the statements, research programs and inferences are reasonable, who should be given support and encouragement. We should focus on the cultivation of the students' exploration and innovation. For example, the course of "The Foundation of Materials Forming and Technology" should enable the students based on their speciality and interest in product design or mold design innovation, design discussion. Students do not simply deny the discussion as long as there is about the basis for research programs is reasonable, logical reasoning who should be given support and encouragement to students on their exploration and innovation.

Carrying out extracurricular activities extensively, expanding new space for the innovation of students. Creating an innovative environment, and actively guiding and setting up extracurricular activities to encourage students to participate in various types of innovation activities, is another important link of training innovative personnel. We should encourage and support students to participate in the national mathematical contest in modeling, national universities challenge cup and innovative design competition organized by the school. Starting "innovative research training program for college students" to develop the practical abilities of students and their innovation.

Actively carrying out students research assistant activities. Encouraging Undergraduates participate in teachers' research projects, to experience the training process of scientific research and to develop their innovation and overall quality. In order to complete a research project, we should learn the knowledge, access and collect information, exchange and cooperate with others, train the mental and physical hands-on practical capacity, develop a full range of overall quality. However, if the undergraduate students involve in research projects, they need teachers' guidance of choosing topics, guide links of the process. The degree of difficulty and workload should be suitable for undergraduate to ensure that they can complete the whole process of the project. They can cooperate or participate

in graduate students' research work, through standardized basic training of the scientific research, receive comprehensive training and development, to help students to training their innovative spirit and comprehensive quality.

4 Conclusions

Local universities should combine the subject construction and training innovative personnel, through scientific research promoting teaching, interaction of university-industry collaboration, research assistant, interactive production and research, innovative teaching staff, innovative teaching material system, and innovative practice teaching methods, to integrate scientific research, education and innovative of personnel training, and comprehensively to train high-quality and innovative talents.

Acknowledgements. The work has been supported by the major research project of the Chongqing Higher Education Teaching Reform (No:102109 and 102201).

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Study and Practice of Bilingual Teaching Course in Major of Materials Forming and Control Engineering

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Abstract. According to the require of national characteristic specialized construction education for the students and combinating the practice of bilingual teaching in major of materials forming and control engineering, this paper studied the modularization bilingual teaching reform in the curriculum teaching process in the local colleges or universities. The significance of bilingual teaching in major of materials forming and control engineering is clarified. The multimedia bilingual teaching is carried out in the course of foundation of materials forming and technology. The results prove that it is practical and fruitful to conduct bilingual teaching based on excellent original english teaching materials, multimedia methods, scientific organization and modularization teaching.

Keywords: Materials forming and control engineering, modularization teaching, bilingual teaching, multimedia teaching.

1 Introduction

With the globalization of technology and information, community increasing demands on students. Not only requires students to have a solid professional knowledge, but also must have a very strong knowledge of professional english in order to facilitate integration with the world. At present, bilingual teaching has become a highlight of the reform of higher education. Bilingual teaching is the inevitable trend of higher education with international standards and the development trend of education reform, it is also an effective way to train qualified personnel to meet the social development needs. However, bilingual teaching is different from the foreign language teaching, does not exclude the application of chinese mother tongue, especially in the teaching process of university science and engineering professional courses (such as the "Foundation of materials forming and engineering technology"), requires intervention necessary to help students understand and master the main points of professional knowledge, which is why the promotion of bilingual education rather than the cause of foreign language teaching.

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Major of materials forming and control engineering is by the merger of the four traditional thermal processing expertise that is forging, casting, welding and heat treatment professionals in 1998. The bilingual teaching content is materials forming and control engineering knowledge-based, supplemented by academic english. In order to help students use english as a tool for direct contact with foreign-related learning and professional information, it requires not only well read and understand english in order to obtain the necessary information professionals, but also requires expertise in english as a tool to obtain information. Major of materials forming and control engineering in our university is a national characteristic specialty. School of materials science and engineering continue to carry out the research and teaching practice of the bilingual education, and have achieved certain results and experience.

2 The Characteristics of Materials Forming and Control Engineering Bilingual Teaching

The bilingual education objectives of materials forming and control engineering is trains students comprehensive ability to use english for studying their professional knowledge, proficient in reading of professional english scientific literature, writing and exchanging academic knowledge. English is the medium, and the classroom teaching is the core based on professional knowledge. The course is offered students which is a required professional-based course after finished public english classes study. It is mainly on the relevant english vocabulary, translation and writing methods for materials forming and control engineering major. The main purpose is to read professional literature proficiently through studying the relevant professional knowledge of english, and lay a solid foundation for the thesis (design) or in the future engage in professional research.

There existed some problems in traditional bilingual education of materials forming and control engineering. The phenomenon bilingual education that students generally focus on basic english, and look down on professional english. Currently, TOEFL, GRE, IELTS, CET-4,6 exams, these certificates which impact on employment and social needs, make the students entered the school by the impact of these basic english test. When access to bilingual learning phase, compared with these english test, students do not pay equal attention by the importance of professional english. This is one of the main result that it is difficult to raise students' professional standard of english and improve teachers' bilingual education actively and effectively. The teacher's role is not prominent in materials forming and control engineering bilingual teaching process. Students cannot understand the sentence and the grammar and have difficulty in understanding of chinese language. The materials forming and control engineering professionals involved in complex and more expertise, requires teachers to have a very rich casting, forging, welding and other specialized knowledge, from the perspective of professional

knowledge to explain and interpret, and then let the students understand the professional knowledge of english. In addition, the methods and styles of bilingual teaching are traditional and single. Now many colleges and universities take a single form of teaching on bilingual teaching. When teachers in primary teaching, reading plus translation, students are passive note-taking. It is a serious impact on students' motivation and teaching effectiveness. Moreover, there are many schools of materials science used the "Materials Science and Engineering Bilingual" as a textbook. These presented more in based knowledge system of materials science, however, closely associated with the practice of professional and technical content of the materials forming relatively small. In the assessment, evaluation methods are mostly simple written test. Most of the content is written only words, sentences, paragraphs, english-chinese translation. Questions are single and are lack of the assessment of listening, speaking, the actual use of english language skills. Neglecting training and developing the ability to use language. In view of the above problems, it is necessary to reforms the methods and contents of materials forming and control engineering bilingual teaching.

3 Reformation and Practice of the Bilingual Education

Firstly, we should handle the basic english teaching and professional english teaching complementary relationship properly. Professional bilingual is based on basic english, while professional english is the application and extension of basic english. Without a solid basic knowledge of english, bilingual education cannot be successfully completed, and is an indispensable tool for the actual work. So to continue to strengthen exchange and communication between basic english teachers and professional bilingual teachers, to achieve mutual complementary and common progress. In the bilingual teaching process of the materials forming and control engineering, we should correct the positioning of the teaching objectives. At present, most engineering undergraduates mainly train application-oriented talents. So, when teaching the students, teachers need to be closely linked teaching contents with jobs after graduation, strengthening the application, and take into account the needs of some students who will take the graduate record examination. Targeted to the english proficiency of students in teaching and training, so as to greatly improve the students' overall learning initiative.

Secondly, we shoule enrich the content of bilingual education and modularization teaching reform. When we select the textbook, in addition to use "Manufacturing Engineering and Technology-Hot Process" excellent bilingual teaching materials written by Serope Kalpakjian and Steven R. Schmid, we also select an other textbook-"Special English of Mould" written by Huang Yijun et al as the main reference. The teaching is divided into several modules as shown in figure 1.

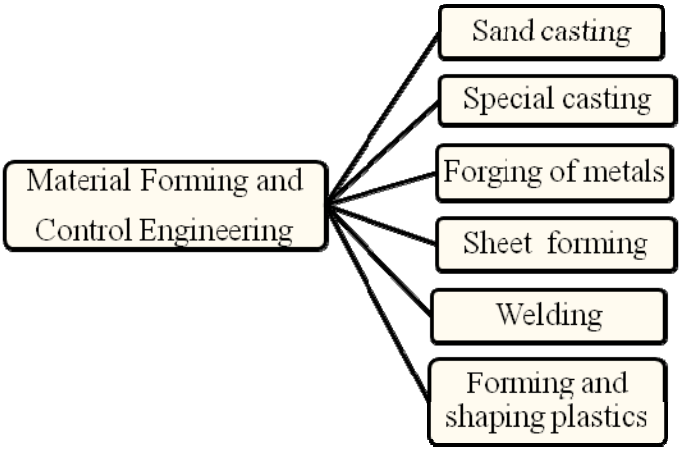

Fig. 1. Modularization of materials forming and control engineering

Each module content, broadly divided into five parts: First, the introduction of this module which is related to the issues and basic requirements of the materials forming process; the second is the right time to introduce the basic concepts, basic theory and methods of materials forming; Third, in order to improve the skills of issues-analysis and problem-solving, we should sum up the problem-solving ideas or rules to enable students to clear the methods and characteristics of the materials forming based on the analysis of the relevant issues; Fourth, the introduction of summary, how to solve the materials forming process-related issues involved in the module; Finally, there is a proper reflection questions and exercises. By the amount of such examples, exercises, reflection questions, students can obtain skills, acquire qualified knowledge, while the combination of theoretical and practical issues to improve analysis and problem-solving ability. Content of each module, must always aim at the professional need and solve issues related to the production process for the purpose, focus on the necessary technical ability of the materials forming knowledge, Outstanding the content that technical staff should be aware. It will play an invaluable role on enhancing students' practical work to analyze and solve related materials forming problems in the future. Because of the modularization teaching, we can use different doctor who skilled in different areas in segmented modularization bilingual education. For example, the materials forming and control engineering bilingual teaching in Chongqing University of Technology separated into several modules. Dr. Zhiming Zhou who graduated from the Institute of Metal Research, Chinese Academy was responsible for sand casting and special casting module teaching; Dr. Tao Zhou who graduated from Hunan University was responsible for the forging of metal modules of teaching; Dr. Xiaoping Li who graduated from Chongqing University was responsible for the sheet forming the module teaching; Dr. Huibin Xu who graduated from Harbin

Institute of Technology was responsible for welding module teaching; Dr. Youbing Li who graduated from Sichuan University was responsible for forming and shaping of plastics module teaching. In this sub-type modularization teaching, it can forming a higher level professional team of bilingual teaching. Which can introduce the latest research at home and abroad into the curriculum, and the students' interest in learning can greatly increased as well. It is not only enable students to conceptual clarity and avoid confusion of knowledge, but also enable students look for the old so as to learn the new by analyzing and comparing.

An important goal of bilingual education is to train writing format in english paper and skills of writing english abstract, that is, the methods of writing english summary in the design phase of graduate students course design. In the teaching process, teachers should add reading and writing chinese and english abstract of academic paper, teaching should focus not limited to translated description of materials forming method and its application, but rather how to help students learn english and establish linkages between learning professional english and practices work in the future. So that students can rise to the full attention of the course, reaching the true purpose of teaching. In english writing, according to the basis of the students, give the students some simple layout of the content writing, to improve students' ability to access to scientific literature and reference books in english. Then select the appropriate template papers, guide students to enjoy learning english papers, help students understand the format specifications of english papers and expand their knowledge.

The traditional bilingual teaching methods is translation plus read. Professional english is gradually forming in the continuous development of professional and technical expertise. Professional english in terms of grammatical structure or vocabulary has its unique idiom, the characteristics and rules. It is difficult to improve the professional english translation and writing as if you do not master the characteristics and laws. Therefore it is very necessary to teach them the characteristics of the professional english grammar (the impersonal and objective tone, passive voice, etc.) and lexical features (words composed of word formation, vocabulary, abbreviated, etc.) before the course or during the class, so that students master these characteristics and patterns, which is more handy for bilingual learning. Reforming teaching, the reform of classroom teaching methods, there are relatively simple changes in teaching methods. In process of teaching translation and reading, to the difficult expertise, we can use the traditional word for word translation method, expand the vocabulary at the same time. For those not difficult professional literature and information, let students read and answer related questions within the specified time to improve their reading speed. For little difficult professional literature and information, let students learn after-school, and then teachers ask questions for students to translate some of these sentences in the classroom. This diversity of teaching methods can improve the enthusiasm of students to participate. Adhere to the student-oriented, the open implementation, we promote the principle of heuristic, discussible, diversified teaching methods, to provide students with more opportunities to participate in interactive learning, and improve students' learning initiative, to stimulate students' curiosity, inquisitive and flexible use of knowledge at the same time.

Large set of multi-media information, illustrations, enhance students' interest and efficiency. Adopting multi-media teaching can be vivid display the contents of professional english in the classroom. If talking about the special casting, in addition to elaborate in english, you can prepare some information of the die casting and some flash animation and video courseware, not only enable students to recall that once learned expertise, but also help students to understand professional english. In addition, to organize students to participate in classroom discussions and exchange ,it can enhance students' materials professional english oral and application.

The biggest trouble of learning professional english for students is the professional vocabulary. Most of the professional vocabulary have a long spelling and narrow meaning, and traditional rote learning is not effective. When you master the professional english vocabulary and word-building features, it is very effective for professional vocabulary memory simple and convenient. There are more than two thousand entry with the prefix "hydro-, hyper-, hypo-, inter-", and the vocabulary of constituting "-meter" suffix are nearly 500. such as hypereutectic, hypoeutectic, interface et al. Derivation is indeed an important method for professional english word-building, and means to master at least 50 commonly professional english prefix and suffix. Another feature is the ones used in ordinary english words, in addition to their basic meaning, but in different professions have different meanings. Such as "flux", the basic meaning is "floating" ,but in the technical expertise escaped as "thinner, flux, slag making" and so on. Another example is the "feed", which the basic meaning is "fed", escape as "supply, transport, feed, riser" and so on. The word "chill", the basic meaning is "cold", escaped as "chilling, chilled, cold iron, metal, ingot mold, white layer" and so on. This class of words with various forms and meanings, semantic range of usage and flexible, using a very wide range in the translation, in particular should pay attention to the meaning of the right choice.

4 Conclusions

History of science is a history of professional and technical level of development. Science and technology development are mutually reinforcing materials forming technical development. Developments of human society and the scientific and technology are inextricably linked. The history of materials forming technology can be said that a epitome of the history of science. There is still a gap between Chinese and the world's developed countries in the development of materials forming technology. Bilingual education is an essential tool for effective international communication, an important tool to develop english language proficiency and professional skills. Materials forming and control engineering bilingual teachers must change their teaching ideas from the traditional teaching model to a variety of teaching model, and should take full account of the needs of students in bilingual education. Taking active measures and methods, scientifically combine the content and purpose of materials forming and control engineering bilingual education, thereby effectively improving the level and effectiveness of materials forming and control engineering bilingual education.

Acknowledgements. The work has been supported by the major research project of the Chongqing Higher Education Teaching Reform (No:102109 and 102201).

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Study on the Team-Based Management of the Learning Organization

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Abstract. In order to propose the concept of team-based management of the learning organization, we discuss the interactive relationship between senior management team and self-managed teams of the learning organization. The basic unit of the learning organization is team. There are not only a variety of project teams to achieve organizational goals in the organization, but the manager role is no longer a heroic leader, replaced by the senior management team which can play the advantages of collective decision-making. Therefore, the team-based management is an essential feature of the learning organization management. Effective team-based management is necessary for achieving the vision of a learning organization and promoting the personal development of members of the organization.

Keywords: Learning Organization, Team-based Management, Senior Management Team, Self-managed Team.

1 Introduction

As a new management theory, learning organization conducted a comprehensive reflection for the increasingly exposed shortcomings of management at this stage, and established a new management model which is more suitable knowledge economy and information age. Because of its new perspective and high attention to the learning ability of the organization's members, the creation of a learning organization makes the model of leadership in the traditional organization undergo a major change, and makes the management of the traditional organization face enormous challenges[1]. The team-based management is an essential feature of the learning organization management, and the effective team-based management is necessary for achieving the vision of a learning organization and promoting the personal development of members of the organization.

2 Senior Management Team

The outstanding senior managers are the main driving force of sustainable competitive. The global economic integration, the ever-changing information revolution, the organization business with diversification trend and the department

L. Zhang and C. Zhang (Eds.): Engineering Education and Management, LNEE 112, pp. 343–348.
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work in close collaboration all present new challenges for the senior leaders of the enterprise. The working mode of the senior leaders has changed, and the senior leaders need to operate efficiently as a team.

2.1 The Meaning of the Senior Management Team

The senior management team is the small related group of the senior manager including CEO, president, vice president and senior managers who report to directly.

The leadership of the organization is a common activity. Although top managers are the main decision-makers, they undertake authority and responsibility with other members in the organization. Team composition and structure mainly refers to the characteristics of the senior management team members (including age, education, qualifications, etc.) and terms of structure[2]. The operation process of the senior management team includes coordination among team members, communication, conflict management, leadership, motivation and other acts.

The senior leadership team has the general characteristic, and also has its unique characteristics different from the general team. The decision function of the senior leadership team is stronger.

2.2 The Constraints in the Senior Management Team

Learning organizations need to build effective senior management team to ensure the occurrence of organizational learning and the promotion of organizational capacity. Although the teamwork of senior management team members can integrate a variety of perspectives to solve many complex problems, improve the identity, cohesion and participation in decision-making of the senior managers, but many empirical studies have shown that the senior management team can not play a role as scholars expected. The factors restricting the senior management team to play the potential benefits mainly are the information asymmetry of the team members, differences in interests and emotional conflict.

2.2.1 Information Asymmetry

Senior management team is composed by senior managers who have different positions and experience, and the diversity of information within the team results asymmetric information among members.

2.2.2 Differences in Interests

Senior management team members have a certain power in the enterprise. When they make decision, they are more concerned with their jobs, departments, personal interests. This causes them conflict and departure from other members and even business interests. Negotiation theory thinks that when the interests of two sides are inconsistent, there will be value creating and value creating two acts[3]. Value creation is to find a way to form the coordinated interest

objectives which all parties recognize, or to exchange interests for the benefit of the entire organization. However, when the conflict of interest is large, individuals will try to obtain the maximum benefit which they can get by a variety of ways.

2.2.3 Emotional Conflict

Because of information asymmetry and differences in interests, the senior management team members will inevitably produce conflict during the operation of the team. Conflict is divided into two categories: cognitive conflict and emotional conflict. Cognitive conflict is task-oriented, and its focus is on how to better complete the task. As the different members observe the complex and environmental phenomena from different angles, the cognitive conflict in the senior management team is inevitable. The emotional conflict is individual-oriented and non-constructive, and its focus is on the confrontation and controversy among the members. The emotional conflict will hurt feelings among the members, block the normal channels of communication, weaken the mutual understanding among the members, and the understanding for the business environment and decision-making.

2.3 Construction of the Efficient Senior Management Team

The power of senior managers plays an important role in the formulation of strategic decision-making, and the power structure of the senior management team members affects the exchange of information, benefits realization of the members. Therefore, the construction of the efficient senior management team needs to design a suitable power structure of the team. Emotional conflict will affect the business performance. Senior management team needs to effectively manage conflict to make more effective use of energy, experience and creativity of the members. The ability to manage conflict can make a world-class management team stand out from the general team. Senior management team can not play a potential performance. Effective senior management team focuses on the process management of the team, and tries to minimize the loss of the team process[4]. The process management of the senior management team includes results control and process control.

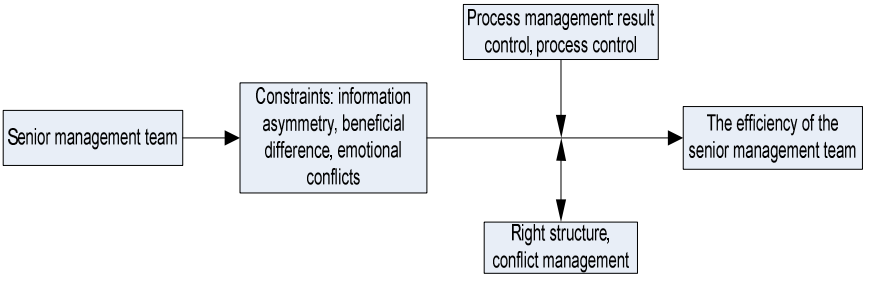

Fig. 1. The model of the senior management team

3 Self-managed Teams

Team is a group composed by individuals in order to achieve a goal. Team can be divided into problem-solving teams, self-managed teams, functional teams and so on. Learning organization is a self-managed team team or functional team.

3.1 The Characteristics of Self-managed Team

Self-managed team of learning organizations is a team with a self-judgment under the management of leaders, and with a high degree of autonomy to achieve organizational goals. In this form of organization, the managers do more strategic planning. Self-managed team is an inevitable choice in the process of enterprise development. Self-managed team takes people as center and takes employees as active subject, because employees are masters of their enterprises, and they have greater autonomy compared with other types of teams. Once the self-managed team is determined the objectives to be accomplished, it is entitled to independently determine work assignments, rest breaks and quality testing methods. These teams often can even select their own members, and let the members evaluate work performance mutually.

3.2 The Conditions for the Efficient Self-managed Teams

The study found that the following conditions are indispensable for the formation of efficient management team.

3.2.1 Commitment for the Common Goals

Effective teams have a common and meaningful goal, and this goal can guide the direction for team members, provide the impetus and let team members are willing to contribute to it.

3.2.2 The Ability of Members

If the team wants to operate effectively, it needs the following three different people.

First, the efficient self-managed teams need the members with technical expertise;

Second, the efficient self-managed teams need the members who have problem-solving and decision-making skills, propose the suggestion to fix the problem, and weigh these suggestions, then make an effective choice;

Third, the efficient self-managed teams need the members who are good at listening, feedback, conflict resolution and other interpersonal skills.

3.3 Members Who Take on Different Roles

A high performance team requires members to take on different roles, and the roles that members can take on are related to the personality traits of the members. Therefore, in the selection of the team members, the employee's personality characteristics and personal preferences should be given priority.

4 The Relationship between the Senior Management Team and the Self-managed Teams

In the learning organization, network structure is the basic trend. Senior management team and self-managed team form the organic whole of the learning organization. The relationship between the two can be expressed in figure 1.

The whole of the learning organization include senior management team and self-managed team, where the senior management team lives in the heart of the network. The self-managed teams can complete projects and deal with problems relatively independently, and the members of the self-managed teams maintain a network-like link each other. It can be seen that a learning organization is like a fractal structure. The individuals compose the team, and the teams compose the whole organization.

The organizational structure of the learning organization is the distributed with network and peer-to-peer, as shown in figure 2. In this organizational structure, the relationship of the teams is equivalent, and the teams can communicate and interact directly[5]. The advantage of this structure is time delay is short, the robustness of the system is good; the disadvantage is difficult to realize, guarantee consistency of system resources, and provide sharing at different levels.

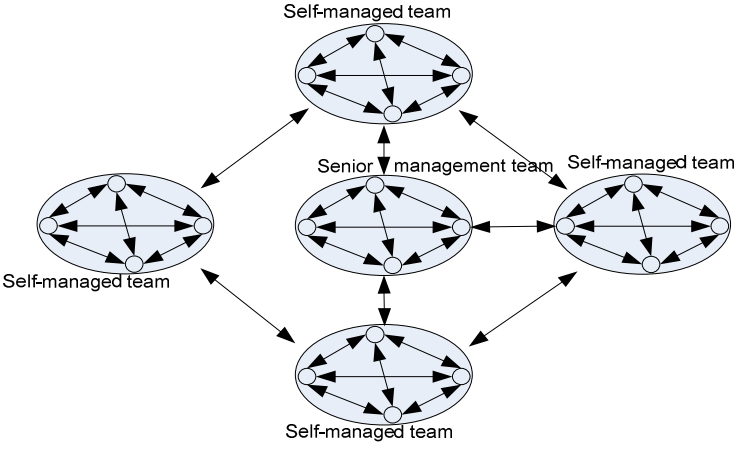

Fig. 2. The senior management team and the self-managed teams

In decision-making and policy formulation, the senior management teams of the learning organization can fully consider and adopt the valuable information of the self-managed teams, and make flexible decision based on the actual situation. Thus, the importance of junior staff is increased significantly, efficiency and competitiveness of the organization are improved, and organization can react to the market quickly. Employees not only bear the greater responsibility, but also should have appropriate decision-making power.

5 Summary

As a new management theory, the learning organization conducted a comprehensive reflection for the shortcomings of the management which is exposed at the present stage, and established a new management model which is more suitable for the knowledge economy and information age. At the same time, because of the new perspective and the attention for the learning ability of the members in the organization, the creation of a learning organization makes the model of leadership in the traditional organization undergo a major change, and makes the traditional management of the organization face enormous challenges. The team-based management is an essential feature of the learning organization management. Effective team-based management is necessary for achieving the vision of a learning organization and promoting the personal development of members of the organization. In this paper, the concept of team-based management of the learning organization is proposed, and interactive relationship between senior management team and self-managed teams of the learning organization is discussed. The creative activities of the learning organization have extensive development.

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Game Analysis on Risk for Project Bidding

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Abstract. Binding is the main standard for proprietor to get the ideal construction unit, and the quotation is the premise whether the construction unit will get the bid or earn money after getting the bid. But risks exist through the whole bidding process, and will make a big difference in the quotation or the bidding result. So bidder need to identify, evaluate and then make the corresponding measures about the risk in the project, further then make a reasonable quotation to get the bid. In view of the project characteristics, with the pricing model based on BQ, this article which stands on the side of the bidder, analyzed the risk on the whole process of the bidding with the view on Game.

Keywords: Bidding, Risk analysis, the Pricing model based on BQ, Game.

1 Introduction

In recent years, people's need for live continues to improve, as well as our government keeps on announcing a series of initiatives to expand the construction of infrastructure projects, all these for construction industry undoubtedly will be a huge wave for development. But with the constant development of bidding system and an influx of construction units, the construction market is getting grass herbicides missing, and the competitions become increasingly fierce. As we all know, the quotation gets up to 50% in the comprehensive evaluation system when scored. So for a mature contractor, how to accurately fix him in the bidding battlefield, take all aspects of the risks in the bidding into consideration and give them full plan and control, and then with the minimum bidding cost to achieve the bid as well obtain the corresponding benefit, all these must be affronted first.

Proceeding from the current pricing model based on BQ, this article exploits the perspective of the Game (such as game between the bidder and the proprietor or game among the bidders), then it analyzes the risk in the whole process of the project bidding, and gives the corresponding countermeasures. I hope it will give some certain significance to the tender units.

2 Game Theory Relationships and Thought in Bidding Process

As shown in Figure 1 [1], it is the game relationship in the construction project bidding process, that is, each construction project bidding process contains game between the bidder and the owner or game among the bidders.

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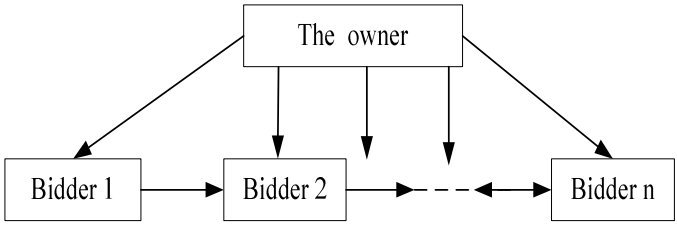

Fig. 1. Game theory relationships in bidding process

As a bidder, the goal for an engineering project bidding is to get the bid and then obtain the expected profit.

First, there must be or speculated to be two or more unknown bidders in a construction project bidding process. Due to the information asymmetry, each bidder doesn't know other bidders' quotation or their information. Then, each bidder should take full advantage of its own resources to make a satisfying bid tenders and a reasonable quotation in order to beat the other competitors and stand out. This is the game process among all the bidders: such as what are the number and the information of the competitors, how to determine the quotation or the bidding strategies, and how will the competitors' quotation affects ours and so on.

Second, it is about the game process between the bidder and the owner. The process for the bidder to get a project is the game process between them, such as the identification of the quotation, the selection of the bidding strategies (like surprise attack method, uneven quotation, profit after first loss method, multi-program quotation, HSP law and binding method), and the risk identification and distribution at all stages.

3 Whole Process Risk Analysis in Bidding

3.1 Features of the Pricing Model Based on BQ

The issuance in 2003 and revision in 2008 of the specification for the pricing model based on BQ about construction project indicate that our project cost management system is getting the continuous development and improvement. The pricing model based on BQ is much different from traditional quota price: the pricing model based on BQ takes "control volume, release price, the enterprise quote independently and the market forms price"[2] as its guideline and its valuation base is the market price, while traditional quota price model makes' is the budget price (or mandatory price); Second, the quotation in the pricing model based on BQ is made up with every part and every item project costs, measure expenses, other fees and stipulated charges, taxes; and tradition quota price is composed of quota direct fees, other direct fees, sense funding, indirect costs, planning

profits and taxes, their composition is different. What is more, under the pricing model based on BQ, the profits are directly contained in the integrated unit price, belonging to the competitive cost, and this made the quotation more reasonable and fair. At the same time, this model's implementation of "price-volume separation" is more conducive for rational distribution and control of risk, and it can fully mobilize every one's enthusiasm in the game.

3.2 Frisk Factors Affecting the Bidding

Under the pricing model based on BQ, the bidder need to face the following main risk factors: ①the risks of the bidder own; ② the risks of the tender documents; ③ the environment risks in the construction worksite; ④ policy and regulation risks; ⑤ the bidding risks. Now analyse them as follows [3]:

(1) Bidders' own risks: It is mainly reflected in the bidders' own management, economic strength, quotas of enterprises, or the bidder doesn't learn fully about the owner and bid blindly, causing distress to itself or the subsequent projects, and so on.

(2) The tender document risks: It is mainly reflected in the bidders' comprehension and judgment to the tender documents. The tender documents as the guiding document of the entire bidding process and the dayspring of a project, is a programmatic document to control construction cost. If the bidder can't fully understand the tender document, and make presumptuous conclusion or estimate directly about the incomprehensive of the tender documents, then also has not put forward their puzzle or divergences in the tender answer, compile the bidding document directly, these will store up problems for the subsequent winning the bid or the construction after winning the bid.

(3) The environment risks in the construction worksite: The differences of geology, foundation, hydrology, climatic conditions and so on, are likely to lead to the bidder's incomprehensive analysis about the environment risks in the construction worksite.

(4) Policy and regulation risks: The changes before and after the bidding may affect the contract management in the construction process. Such as the raising of the construction standards may result in increased investment and then cause claim disputes.

(5) Bidding risks: The selection of bidding strategies will make a big difference in whether the bidder can bid successfully or get the guarantee after successful bid. So the bidder should take the enterprise's current condition and long-term business strategies into consideration, and then determine the bidding strategy, this process contains a certain degree of risk.

Risk exists in the whole bidding process, the bidder should analysis all kinds of the risk factors just from the tender selection, by means of game, analyze the bidder and the owner, then bid. The main components of bidding are shown in Figure 2.

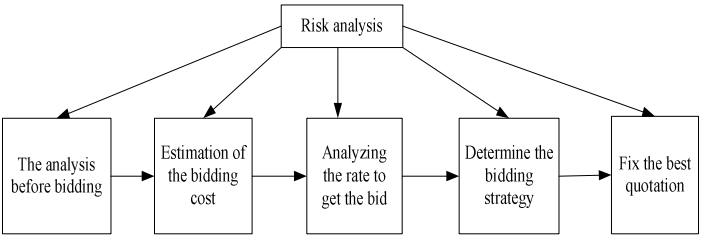

Fig. 2. The main techs in bidding process

4 Bidding Risk Avoidance Countermeasures

In the bidding process, after identifying and analyzing all kinds of the bidding risk factors, the bidder should compile the results and then select out the relative best risk response, in order to minimize the potential losses and improve the enterprise's ability to control the project risks, then can get ready for the following engineering project bidding's smooth implementation. In the process of bidding, there are two fundamental quantities:

(1) Engineering project risk rate [4]. According to the perspective of Professor Zhuofu Wang, in accordance with the definition of risk, risk rate is the rate that the goal can't be achieved under the condition of engineering project target demanding. Express it by Pr.

$$Pr=P(X<X_0)$$

In the formula: X is a random quantity; X0 is the planning value or stated value of the engineering project target.

(2) Engineering project risk loss q. The engineering project risk loss is a measure for the loss when risks happen.

Based on the above two fundamental quantities, the common strategies are shown in Figure 3:

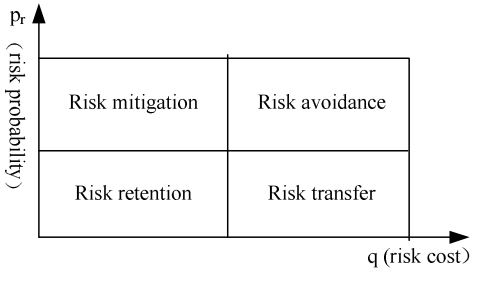

Fig. 3. The matrix chart of risk response strategies

In general:

(1) For risks with small loss and low probability, usually take the strategy of risk retention, there is no need to increase risks quotation;

(2) For risks with small loss but high probability, normally take the strategy of risk mitigation, such as selecting a new scheme to reduce the risks or advancing an ideal to the proprietor of changing the environment conditions, or so on;

(3) For risks with big loss but low probability, to avoid overweight loss when risk happens, the risk transfer method is usually used. Such as gaming with the proprietor, then transfer the risks by contract terms to the proprietor who can bear risks more powerful. On the other hand, for risk has the characteristic of relativity, it may belong to controllable risk to some construction organizations, so under proprietor's permission, bidder can subcontract this kind of risks to the corresponding sub-contractors. At the same time, engineering insurance and engineering guarantee are the common methods in practical engineering projects;

(4) For risks with big loss and high probability, risk avoidance strategy is the general means. But risk avoidance strategy is the most crashing and negative way. It will abandon the chance to make gain at the same time of avoiding the risks, and even will hinder the company's innovation and development. At the same time, for risk has the characteristic of dynamic, the decision about the risks may not be risk any more with the developing of the engineering project.

5 Conclusions

Under the pricing model based on BQ, with the view of game to analyse the risk through an engineering project's bidding process is a rigorous and cockamamie wan. The bidder should be based on their own condition, just analyse from the beginning of the bidding, seriously study the tender document and then give a whole comprehend of the tender enterprise and the potential competitors' information. Meanwhile, the bidder should take full advantage of their quotas, fully use their advantages, and pay certain attention to the bidding strategies, and then with high quality of their bid to improve their rate to get a bid, with all these to response to the fierce market risks. Only then the enterprise will get a long-term development.

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Research on the Career Quality Training of Students in Perspective of Career Planning Education-Take Students of Hospitality Management Major as an Example

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Abstract. Career planning education has got more and more attention for it plays an important role in promoting the overall development of students, increasing the employment rate and the rational allocation of human resources. Experiences in tutoring students in hospitality industry practice highlight problems that students do not have proper career awareness, ideal and quality. They focus too much on salary but not on opportunity for personal improvement. This paper proposes several solutions to improve students' career quality in the perspective of career planning education, such as give whole process guidance, diversify the contents and methods of education of vocational planning, provide qualified teachers for the education of career planning.

Keywords: Career Planning Education, Career quality, Professional consciousness.

1 The Concept of Career Planning Education

Career planning is the use of so-called career assessment, survey interviews, psychological measurement methods and means to reasonably match a person with an occupation based on market supply and demand of human resources and their own wishes and qualities through offering advice, guidance and help[1]. Career planning can be divided into social career planning and school career planning in the perspective of implementation object. School career planning education is to develop the students' career planning abilities and skills systematically and it is critical for the comprehensive educational reform of higher education [2].

In western countries, career planning theory has been developed for over one hundred years and career planning practice has formed a multi-level and mature educational system. In China, career planning education is rather weak on account of various historical and social reasons. As a professor of hospitality management in higher vocational school, my main job in these two years is to guide students' practice in hotels. The problems found in their practice show that they did not get proper career planning education in school and they cannot make good career planning for themselves.

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2 Problems in Aspect of Students' Career Awareness and Career Quality-Analysis Based on Students' Practice in Hospitality Industry

2.1 Improper Career Awareness and Biased Understanding of Hospitality Industry

There are mainly two wrong beliefs. The students with the first wrong belief think that they can become a manager immediately after graduation instead of doing years of basic jobs. Their knowledge about hospitality industry mainly comes from films, television or luxurious appearance of surrounding hotels. Therefore they take it for granted that the hospitality industry is an easy, decent "noble trades", where all staffs are dressed in beautiful uniforms, and are often in the reception activities of important figure and celebrities. However, when they truely step into this "royal profession", they suddenly discovered that their responsibilities are just serving consumers and meeting their need in every minute. Then a sense of disappointment will naturally arise and thus bring some negative effect on their performance of internship. Students with the second wrong belief simply look down on both the hospitality industry and the related majors. They hold a view that working in this industry is like working as a servant with very low social position and people who work in this industry will be eliminated very soon after they become old. And the only reason why these students choose this career is that they have to enroll in to get a diploma. As a result, they don't treat the internship as an 0portunity but a torture. Certainly they cannot perform well in their practice in this industry.

2.2 Focusing Too Much on Their Money Pay But Not on the Opportunity for Personal Improvement

Internship can help students combine their in- class knowledge with out-class experience, and form a specific acquaintance of the hospitality industry, which lay an important foundation for their future career. But some students choose their work position just according to how much they can earn. They haven't seen that the salary is just a trivial thing compared to the precious chance for their self-improvement offered by the hotels. There are two cases, one happened on students who carried on internship in hotels in Miami. A portion of students strongly asked to change position to another with no consideration of their own characteristics and interests only because they discovered that their classmates got more tips on that job. Another case is some students started to complain when they find their star-hotel pay is lower than the salary in a social restaurant. They can't see that they can have the chance to observe and learn advanced management skills and experience in upper-level hotel, which can bring a lot to their future career.

2.3 Lack of Professionalism with Overflow of Personal Emotion

The students who take part in internship are mainly children born in later 80s and early 90s in China. Usually they are the only child in their families. One feature of this group of people is that they are psychologically immature in comparison with their quick physical change. They are more sensitive and can get desperate easily. They can get angry or inspired both by very little things .It is very hard for them to control these emotions. They are also afraid to cope with stress. They will get dizzy with success, while feel discourage and easy to give up when meet some failures. In the internship, this feature of their characteristics was embodied in several aspects. Such as when customers gave them praises they felt very competent of themselves; When be criticized, they felt themselves totally not suitable for the works and thought their customers were just finding fault with them deliberately. They can not acknowledge others' advantages. They will think one person is totally good or bad depending on only one merit or weak point they had found on this person. This polarized emotion will obviously bring negative effect on the students' group cooperation ability. Additionally, internship training asks students not only to learn in-class knowledge, but also require them to work in a hotel which usually be far away from schools and homes, sometime even in other provinces or countries. Students who took part in the internship should deal with problems independently. But in real life students were not so capable, they always asked for help from teachers when little difficulties occurred whatever on internship or on their life caring. Once they didn't get prompt help they start to complain that teachers and schools didn't do what they should do.

2.4 Profession Ability Need to Be Improved

The internship positions in hotels are always first-line jobs which seek for high operability, but a great number of students are lack of these abilities when they have internships. Although they know the skill, but they can not do the job quickly and carefully enough thus often make mistakes. On the other hand, the first-line positions require staff to meet customers' needs at all time, their behaviors represent the image of whole hotel. As a result, appropriate hospitality etiquette plays a vital role, but some students can not act in appropriate ways. For instance someone gave comments on a customer with a wired outwear or whispered about a customer who has a strange body shape. Some students don't treat guests of different nationalities or colors equally but play favoritism. An intern at the Intercontinental Hotel in Miami was fired because he refused to serve a Japanese and argued with his supervisor. He thought it was the performance of national pride, but actually, it was the behavior of national parochialism. Meanwhile, at the international chain hotels, good oral English is a guarantee of quality service for international guests. However a number of interns fear communicating with foreign guests or they can conduct no further communication but a few simple greetings, which affects their service negatively.

3 Several Solutions to Improve the Career Qualities in Perspective of Career Planning Education

A noticeable problem with the Hospitality Management interns is the lack of necessary career awareness, solid professional qualities and competence, which can not be developed during just a few months of practice, but needs a long-term study and training, especially a sound career planning education.

3.1 Using Whole Process Career Planning Guidance to Help Student Know about Industry Earlier

The employment guidance for Hospitality Management graduates is usually provided just before their graduation in an intense way, and normally focuses on job interview skills. Practice has proved that this is not very satisfactory. Additionally, in their internship, student encounter quite a few problems such as confusion about various choices , higher expectation, impatience. If without an earlier analysis and guidance on their job orientation, students are quite easy to fall into confusion. Vocational guidance should be a gradual process, starting from the freshman to graduate, instead of an intense training just before their graduation.

The comprehensive instruction means: For the first year students, they should receive the education of professional consciousness and professional ideal, they should master the general theory and concept of professional planning and establish their own career planning ideal, realizing the job prospects of hospitality management and the status and function of the major in the society, understanding the necessary quality and ability for their future career. Based on the understanding, they should try their best to enhance their own quality, ability in accordance with the demand of the society. For the third year student, the emphasis should be laid on “vocational instruction”, helping students to define the goal of employment, master the basic knowledge and skill for job hunting, and change the old-fashioned vocational concept, cope with the relationship between individual and society or reality and ideal successfully, adapt to the society as soon as possible and make their dream come true. The major purpose of comprehensive instruction is to help students understand their major and love their major, understand employment and seek employment, understand themselves and perfect themselves, understand society and be flexible in society.

3.2 Efforts Should Be Made to Enrich the Educational Methods of Vocational Planning

One of the major problems of the education for vocational planning is the monotony both in content and form. The misjudged educational core and the out-of-date educational method have undermined the effect of the education of vocational planning. In order to achieve the best effect, the education of vocational planning of hospitality management should be based on the character and developmental principle of the students. Under the guidance of career planning, in accordance

with the principle of "the closeness to life, the closeness to life, flexibility and abundance", the education should emphasize the forming of vocational morality, the awareness of career orientation, the analysis of career potential, nurturing their talent and the ability to make decision and to cope with obstacle. As for the educational form, besides the traditional class teaching, the educators can hold lectures, invite the elites to give reports, bring students to pay visit to hotels as well as simulate training and the providing of employment information.. Since the psychological characteristics vary from person to person, it would be better to provide a career instructor for each student the moment they start their college education, including experienced career planning teacher, experts or elites in the hotel industry. They can help students to choose their career direction according to their interest and enthusiasm.

3.3 Prepare Talent Teachers to Ensure Quality of Vocational Planning Education

Human resources are the most active and critical factor of career planning education. The core of human resource development for the career planning education of hospitality management in higher vocational schools is training the professional teachers and obtaining the support of the educational administrative leaders and stakeholders of hospitality industry [5]. The human resources development for this major can be carried out in three steps.

The first step is training the full-time researchers and professional practitioners of career planning education of hospitality management. Through accepting professional education in relevant training institutions, participating study tours, carrying out thematic research and studies, their research, organizational, planning, managerial and coaching abilities can be enhanced and they can become the experts in the colleges.

The second step is training the part-time staffs of career planning education of hospitality management, who are mainly class tutors. In this step, we need to improve their skills and abilities in career planning education and help them solve the problems they meet in the process of career guidance for students through organizing thematic training courses, editing learning materials, sharing of experiences, organizing on-site observation and so on.

The third step is training all the professors in this major. Career planning education should run through the whole process of education. Therefore, all the professors and staff in this major should have the knowledge and skills of career planning education. Besides, we should also pay attention to get the help and support of the educational administrators and other professionals in hospitality industry.

After introduced to Chinese business world, career planning, the foreign born term, was recognized and implemented rapidly, contributing greatly to the development of Chinese enterprises' productivity. In the employment pressure-surging environment, some of China's universities have raised a new guideline with the students education of career planning as the focus after subtly realizing the importance of career planning education, and have achieved satisfactory results.

However, in vocational colleges, this is really rare. Foreign experience, achievements in Chinese business world and university have fully proved the importance of career planning education.

Career planning is a highly effective device for hospitality Management---a prominently professional and practical major---to promote professional and students' all-round development, thus push more students' internships and employment. Therefore, we must unify and enhance the awareness of the importance of career planning education among administration staff, teachers, students, parents, and thus consciously and creatively involved in the implication of hospitality management career planning.

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Design of Digital PLC Experimental Teaching System

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Abstract. This paper discusses a kind of method that computer simulates the control objects and status for the shortcomings of poor visibility and intuitive of the control process and small pilot project in PLC experimental teaching of college. In Kingview and Siemens S7-200 as a platform, Simulation Teaching System of PLC (Programmable Logic Controller) control is designed. It achieves experiment simulation and real-time monitoring of the PLC control, saves investment cost and shortens the development cycle, and improves the teaching effectiveness.

Keywords: PLC, Experimental Teaching System, simulation.

1 Introduction

Programmable Logic Controller (PLC) has high reliability, intuitive programming, good adaptability a, strong interface functions and so on. Nowadays, Mechanical Engineering, Electrical Engineering and other specialties of universities set up PLC courses. PLC is an important specialty, in addition to theory teaching, experiment teaching is also a major section, and it has a lot of experiment courses. In PLC teaching, experiment teaching is an important part of capacity-building. At present, there are several kinds of PLC experiment equipment [1, 2].

1.1 Simple PLC Experiment Platform

It includes controllers, actual motor and other controlled objects. This method needs high investments, long development cycle and a little kind of experiments. It cannot meet the demand of experiment teaching.

1.2 PLC Experiment Box

There are PLC controllers and controlled objects in it. The objects are simulated by switch button and LED. This method has appropriate investments, but it hasn't intuitive experiment object and has large difference compared with actual.

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1.3 Complex PLC Experiment Rig

It includes controllers and many kinds of experiment objects, but this kind of experiment rig is very expensive, many universities could not afford.

Comprehensive comparing several kinds of experiment equipment, controlled objects of the PLC experiment equipment are the big bottleneck in the PLC experiment teaching. It not only needs low investment and short development cycle, but also requires controlled object vividly and directly. Computer simulation technology helps to solve this problem. In order to work out the problem of bad man-machine contact interface and little experiment content in the electrical control technology teaching., this paper uses computer simulation technology, based on Kingview and Siemens S7-200, to achieve simulation teaching of the electrical control system.

2 Components of Simulation Teaching System

In teaching, courseware is developed process with PowerPoint, Author Ware, and Flash and so on. But it is difficult to achieve dynamic simulation and data exchange of hardware. Kingview as a kind of utility software for Factory Control, it provides many general modules for consumers. They use the tools in the configuration software packages and complete the related software development through hardware configuration, data configuration, and dynamic configuration and so on. Simulation Experiment Teaching System includes simulation system based on PC and control system based on PLC. Simulation system is made from hardware and Kingview. Control system is composed of PLC hardware and PLC software. Data exchange can be achieved through the serial communication between PC and PLC. Configuration Software adopts Kingview 6.3. We can create simulation model and simulate physical device thereby simulation function of control system is accomplished. PLC adopts the CPU 224 as the core component in the series of Siemens S7-200. Simulation module puts to use EM231. Electric control structure map is shown in Fig.1. The fundamental instruction operation and experiment simulation module are developed through this method. The instruction operation is shown in Fig.2. The experiment project is shown in Fig.3.

3 Examples of Traffic Light Controlling Simulative System

3.1 The Controlling Requirements of Traffic Light System

Traffic light is a lifeline for human, it concerns our safety. No margin of error is permitted especially in big cities. The control requirement of this paper is as follow:

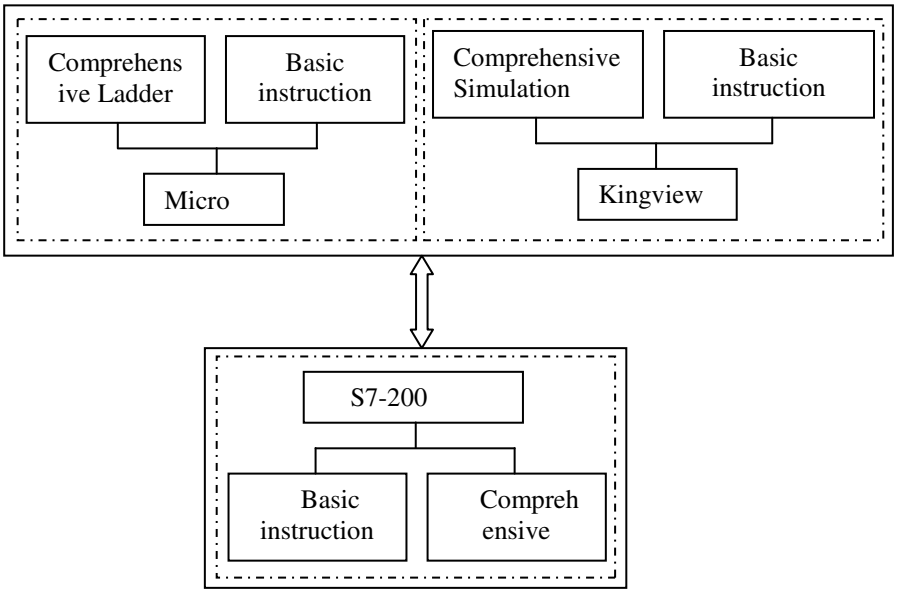

Fig. 1. Electric control structure map

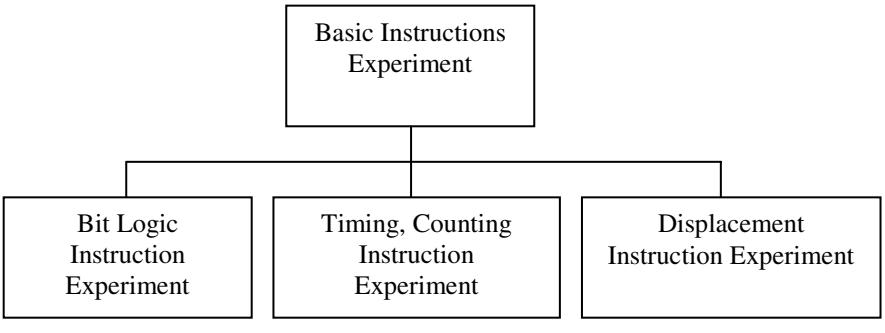

Fig. 2. Basic Instruction Operations

Pressing the run button, traffic lights get started. Pressing the stop button, traffic lights stop working. After system starts, the red light of south-north direction draws 2s, and the green light of east-west direction draws 20s. When the 20s time is over, the green light of east-west direction glimmers; The red light of east-west direction is on, the red light of south-north direction is off, then the green light of south-north direction is on. The red light of east-west direction draws 30s, and the green light of south-north direction draws 25s. When the 25s time is over, the green light of south-north direction glimmers. After 3 seconds, the yellow light of south-north direction draws 2s, and then it is off. The fitful

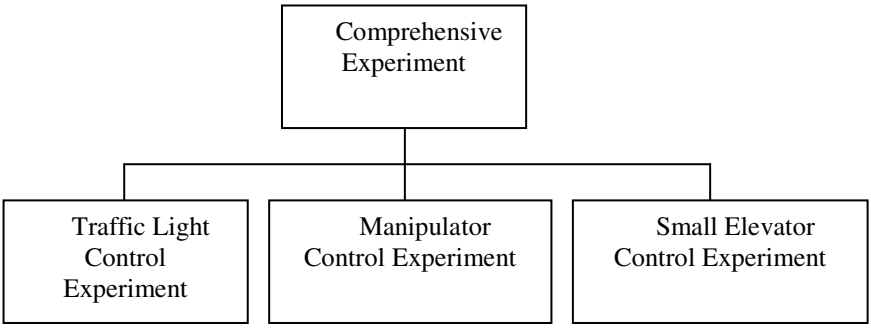

Fig. 3. Comprehensive Experiment Project

time of the green flickering light is 0.5s. The lights of two directions run constantly as required.

According to the requirements of controlling system, the system needs 6 outputs and 2 inputs, S7-224 meets the demand. The function of I/O addresses is as shown in the table 1.

Table 1. Data addresses function

Input Addresses	Function	Output Addresses	Function
I0.0	Start	Q0.0	Red light of east-west
I0.1	Stop	Q0.1	Yellow light of east-west
		Q0.2	Green light of east-west
		Q0.3	Red light of south-north
		Q0.4	Yellow light of south-north
		QO.5	Green light of south-north

3.2 Design of Traffic Light Simulative System

3.2.1 The Configured Implementation of Kingview

After starting Kingview, controlling panels of traffic light, which includes red, yellow, green lights are created in Kingview, then start and stop buttons are appended.

It is related between controlling signal and variables, and makes dynamic connection. In the project management, choice "Database\Data dictionary", double click "New" icon to bring out the dialogue box of "Variable's attribute". Registers of S7-200 PLC are defined, and database variables are created. Real time database is the kernel of database variable and data processing. In the database, a basic element is a data variable. The process of creating real time database is also a kind course of defining data variables. The content of defining data object includes: appointing name of data variable, type, initial value and number range; confirming parameters related with the retention of data, as the

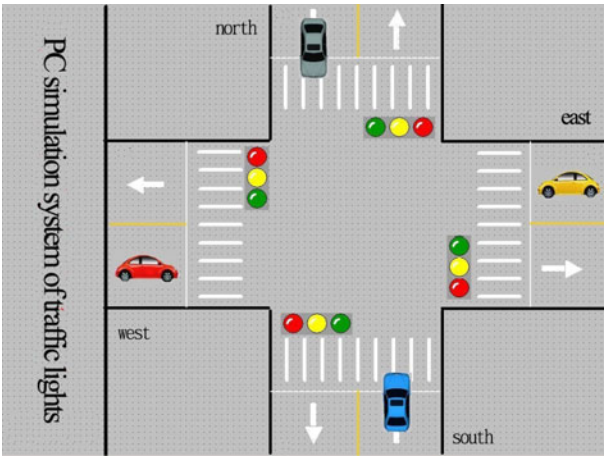

Fig. 4. Traffic Light Simulation System

retention cycle, the range of retention time and so on. The picture Consisting of drawing objects is a stationary object. These drawing objects need to make animation design, and they can describe the state change of outside object in order to achieve real time monitoring. The main method, which Kingview achieves, the animation design is that it is build up between the drawing objects and the real-time data objects in the database, and set up the matching animation properties. When variables are changed, they are shown in a way of picture object in pictures, or shown through using software to change the value of picture object. In operating process of systems, the real-time trapped values coming from data object driver the appearance and state of drawing object in order to achieve animation effects. When system configuration is complete, we can run Kingview without a fault. The simulation system is shown as Fig.4.

3.2.2 Communication between PLC and Kingview

It is necessary to install Kingview software and S7-200 PLC developing software – Micro STEP 7 in PC. The type of PLC adopts 224. It is connected PC with PLC through communication cable which needs RS232 interface. In PC, the compiled controlling programs are downloaded to the PLC through PLC developing software. Then, the specific method for device drivers is to configure different types of equipment components in the equipment windows and set up the related properties according to the types and characteristics of S7-200 PLC equipment. In Kingview, it includes one or more physical paths, which are used to read or output data. These Physical paths are also called device paths. Device paths are only used to exchange data. If making data object exchange, it must be specified and configured by users. All device paths must be connected with the real-time database. The so-called channel connection is a kind of relationship between device paths and data objects. This is an important task for device configuration. Finally,

we can run the experiment, which has been developed in PC, and start up PLC, then control the simulation of systems through operating the mouse and keyboard in Kingview. [3, 4]

3.2.3 The Debugging of Panel Operating System

Run the Touchview of Kingview, and start the switch in the controlling panel of traffic light. Then, turn the switch of PLC to "Run" state, press the start button, and observe the controlling result of traffic light system.

The experiment results that the software panel and the traffic lights in the experiment equipment is simultaneous. The system works normally, and the animation effects are good. So, configuration software system can effectively bridge the gap between abstraction and reality.

4 Conclusions

Using the PLC control system, based on the configuration software, configuration software controls PLC for animation configuration, hardware configuration and control configuration, through the process of computer simulation of the whole PLC teaching experiment, simulates experimental status in order to enhance the students understanding of experiments and theoretical courses and clear the importance of the actual production. At the same time, teaching simulation system can verifies the PLC control program the correctness or not in the simulative state. This can deepen students' enjoyment and improve the theoretical level PLC and the level of PLC experiments.

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Research on the Lack of EQ Education on Chinese Campus and the Teaching Countermeasures

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Abstract. This thesis takes the lack of the EQ education in the classroom of our universities into account. On the analysis, we found the cause to lead this predicament derives from society, university and family. In the light of this, we put forward some effective countermeasures such as renewing the teaching ideology and constructing good environment for the EQ education, setting up the EQ education curriculum, improving the ideological and political education teachers' EQ level, and labeling the EQ education into the process of ideological and political education, creating the classroom model that is full of emotion, and carrying out the EQ investigation and establishing scientific and multiple evaluation model for the EQ education.

Keywords: EQ education, Class Instructions, Teaching countermeasures.

1 The Current Predicament of the EQ Education on Chinese Campus

The book, *learn to be* pointed that, we should try to let individual and public sentiments occur, grow, develop roundly, and let each of their sentiments' level and nook has a chance to integrate into the spirit of the times. It is basically the aim of the EQ education. Nevertheless, in the view of the class instructions, there is no effective management system and the actual operation to launch the EQ education as well as the IQ education. It shows concretely as follows.

The EQ education is not labeled to the courses or corresponding curricula. In our country, few of university offer the course of the EQ education. What's worse, there is no teaching content is relevant to the EQ education in curriculums' implementation program. From the above mentioned, we could know that the phenomenon to neglect practice of the EQ education is striking considerably on Chinese campus currently. Limited to teachers' impercipient to the EQ education and the other actual difficulties, the resistance to label the EQ education into the curriculum plan is especially difficult to eliminate. Therefore, the importance of

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the EQ education can not be respected in the curriculum and teaching materials, including the value to promote mental development and study, the value to future success. Thus, the teacher has been lack of the concrete guidance of theoretical and operation of the concrete guidance in the teaching process. It is unavoidable that the EQ education is always submerged. Although the EQ education is a powerful guarantee to achieve quality education, it is a fundamental principle of school education that educational aim will be not realized if the content is not designed into the curriculum. [1] This seriously impedes college students' all-round development and the implementation of the EQ education.

The faculty to carry out the EQ education is ambiguous and their emotional intelligence is disproportionate. How can we trust that teachers who has weak feeling and will could teach well students? [2] Fortunately,there exists a batch of teachers with higher emotional intelligence, including the teachers who teach the ideological and political science in the college. Currently, under the situation that the EQ education can not be put into execution through subject teaching, this job suits these teachers down to the ground. However, limit of teachers' level of the emotional intelligence, the effect of this course is not very ideal. In a word, except for the subject teaching faculty, these teachers who teach the ideological and political science can not become teaching force of the EQ education. In this situation, some schools put the possibility to the instructors. However, it's not enough, because there is only one instructor per grade on campus with numerous students by comparison.

The EQ education is opposite to the IQ education. Lenin pointed out that there will be no the pursuit to truth without people's feelings. [3] Nevertheless, due to the deep-rooted affect of cybernetics and instrument rationality, there exists the phenomenon that IQ and EQ is opposite in our college education. In order to increase teaching efficiency and complete the school curriculum in the classroom, the IQ education become the whole content which is only exist with rationality and purpose for teachers. By comparison, the EQ education which could control and adjust the IQ education is in the oral and written. Obviously, the latter can not play the role to the former. So, with the rapid development and rat race, the appearance becomes worse and worse so that students are in bad mental shape and unstable psychological state, and full of panic and anxiety to the future. Therefore, it is no catch to set the IQ education against the EQ education.

The EQ education and ideological and political education is separate. The character of the ideological and political education in the process of socialist modernization decrees its' theory trait to keep pace with the times. The ideological and political class is the most reasonable vector of the EQ education, under the plight that EQ education is absent and can not integrate scientifically and organically with subject curriculum. Nevertheless, as a matter of fact, the dilemma is rather severe that the ideological and political education and the EQ education are separate among our university. Most of universities are unable to integrate the EQ education into the political and ideological education. Actually, scientific world

outlook and correct ideas could help students effectively adjust their moods, optimize the emotional quality, form positive relationship, and understand the meaning of life so as to fulfill the worth of a person and his perfect life. For this reason, the ideological and political education class without the EQ education involved will become boring, twisted, even up to the road of deformed development, and vice versa.

2 The Cause to Lead Predicament that the Lack of the EQ Education in the Classroom on Chinese Campus

From the quandary that the EQ education is absent in the classroom of our universities, we could know that Rome was not built in a day. The predicament is venerable tradition which originates from society, college, family.

Society leaves the EQ education behind. Education is a complex social phenomenon. We can't grasp its' overall content even have difficulty to make a rational value judgment depending on the only partial scientific method. Education is a kind of activity to make value choices and value pursue. Human is not only the target groups to educate but also the cause and result. Education will purely become a kind of physical activity and lose its' value for man's life and social effect if we consider it as a process without feeling involved or ignore the quality of students' character. Obviously, this is not the essence of education. [4] Nevertheless, since the last century, the scientific spirit has been providing the educational theory and practice a set of research standard. The general mood of society with instrument rationality orientated has broken the comprehensive education as a whole. The education within spirit of science provides the social progress and great power for technology development, in the meanwhile, it become alienation. It is well known that the scientific spirit and humanistic spirit are two kinds of ideas, methods and value systems used to explore the world and found mankind itself. Their conflict and the integration brought about human civilization and the culture vivid development and comprehensive promotion of human knowledge and proved to be the humans' spirit and props to meet world and organize cultural. Therefore, our society without humanistic spirits and considering the scientific spirit as the whole is the social roots of the deficiency of the EQ education and could not being the teaching content in the classroom of universities.

Higher education ignores the EQ education. The psychologist, Daniel Goleman holds that among all of successful factors, the IQ account for 20% and emotional intelligence account for 80% or above. However, as for the education goal, our higher education generally based on the basis of scientism considers developing high technology and high intelligent person as the ultimate goal. College students' emotional experience is ignored; As for the content of education, higher education lay stress on teaching the clear, logical and systematic knowledge of science, theories and interest;From pedagogical methods, the method to teach and even impart mere knowledge severely dampened students' learning initiative;with regard to the

organization, teaching pay more attention on the collective forms rather than individual personality; From teaching assessment, standardized test is the most principal evaluation way. This stylized and reductionism model stress on the IQ education. It peels off cognition from feeling and awareness and strip reality from goodness and beauty which stress the cognitive development without feeling and awareness. This teaching evaluation pay more attention on the teaching organizational knowledge and developing rational ability which ignore to accumulate the emotional experience and develop the emotional ability, so as to students only learn of some knowledge with absence of emotion such as beauty and responsibility. With the rapid development of modern society, the success of a person does not only rest on his IQ factors but also the EQ factors. Therefore, the EQ education has become increasingly important. [5]

Family education pays less attention on the EQ education. Family education is not only the "cradle of education" but the "life-long education". The scientific and reasonable family education means and methods is the hotbed of emotional intelligence growth and development for the college students. Nevertheless, for the most of college students, the problem of their family education is serious. Except for the family structure and level of economic, the family atmosphere is enough to be the biggest obstacle to carry out the EQ education. Parent of students attach great importance to their academic performance instead of the emotional intelligence. This kind of tough family training mode is lack of care and love, which is harmful in fostering healthy personality. If things go on like this, family has loss his role to EQ education, and even turn to be the adverse factor. It does not only bring on the traditional notion to manifest higher education in the intellectual education, but make college students themselves forget the EQ education.

3 The Teaching Countermeasures for the EQ Education on Chinese Campus

From the above analysis, in order to achieve the strategy that developing education with high priority, instructing human resources powerful country, the EQ education is imperative. At the same time, teaching reform places higher expectations to higher education that education should explore comprehensively students' quality. Therefore, it's necessary to get rid of the guidance of scientism in order to enhance the EQ education. As for the goals, higher education should attach importance on accumulating the feelings experience; In terms of the content, higher education should make the content of the EQ education clear, logical and systemic;On the part of teaching methodology, higher education should change the method to teach simply even impart knowledge;From the mode of organization, teachers should stress students individuals in the circumstances of group lessons;From teaching evaluation, multiple assessment is necessary. Of course, from the angle of class teaching, the EQ education could adopt the following countermeasures.

Updating the teaching concept and constructing good environment for the EQ education. To create a good environment for the EQ education, first of all, managers should remove the traditional intellectualism notion which attaches more importance on the IQ other than the EQ. In the 21st century, personnel should be provided with these qualities such as strong ability of self-learning, high innovative power and intellectual migration, healthy personality. But nowadays our colleges attach teaching knowledge and skills. The intellectual education notion is not suitable to the demand of new era which leads to many college students expertise insightful professional knowledge instead of fractional knowledge and understanding about mankind itself. In fact, the EQ education and the IQ education are the two sides of a question, and they should promote each other. The unity of these two kinds of education is whole education which belongs to person.

Offering the EQ education curriculum. Course is a blueprint and carrier of education that is the basis and core in educational activities. College should label consciously the EQ education into the teaching plan and set up subject curriculum, activity curriculum and potential curriculum, and even establish an independent EQ education course to enhance students' emotional intelligence for some universities which have excellent condition. This way could help higher education provide teachers effective and targeted guidance to practice the EQ education. In a word, to carry out the EQ education actually, higher education must arrange the class hour reasonably and systemically and organize the professional teachers to practice teaching. The teaching materials can be conducted according to the students from different grades. The professional teachers may launch situated instruction, biology teaching to train college students' ability of self-awareness, self-motivation, controlling emotions effectively,interpersonal skills,frustration tolerance.

Improving the ideological and political education teachers' EQ level and labeling the EQ education into the process of the ideological and political education. Although currently part of teachers has realized the importance of the EQ education in the classroom, it needs a long time to change completely the dilemma of the deficiency of EQ education in the classroom of universities. Thus, the best way to launch the EQ education is to label it into the ideological and political education. It needs the college improve the ideological and political teachers' EQ level. This may not only alleviate the situation that the faculty to promote the EQ education is not clear, in the long run, but also contribute to the effective and steady promotion of the EQ education and accumulating emotional experience in the sequence so as to prepare the staff for the EQ education.

Creating the classroom model that is full of emotion. In the classroom, the teacher should be renew teachers' culture and establish harmonious, democratic and equal relationship with students and launch the EQ education in the created, dialogued and cooperated circumstance. This way could help teachers support a good environment to carry out smoothly the EQ education in the classroom. At the same time, it is beneficial for teachers to understand students' EQ level so as to suit the remedy to the case such as the lack of ability to control and regulate their

mood, weak withstand to psychological problems and so on. In the teaching procedure, the teacher must understand and respect for college students' feelings, character, and talk about dreams, career, future and the pursuit to life and happiness and mobilize students' enthusiasm to participate the EQ education. In the situation that the EQ education is up for reforming and promoting, it is helpful for playing the leading role of teachers and students' self-choice behavior and improving the actual effect of the EQ education to establish the mode of emotional classroom.

Carrying out the EQ investigation and establishing scientific and multiple evaluation model of the EQ. Curriculum and teaching investigation is a kind of activity which based on collecting education system information to make a value judgment on the whole or local education system on the basis of certain criteria. In the classroom, the evaluation is an essential element and segment, which decide the result of the EQ education. As to what method of investigation to take, it depends on the specific content of the EQ education. At present, the more effective method is the questionnaire form. Teachers should observe students' embody during life and study for the purpose of finding out the situation of every student's EQ level, when investigation is necessary. Of course, dialoguing between teacher and student and panel interview form is also advisable. The evaluation could play the role of appraisal, guidance, encourage and supervision. It is beneficial for students to harmonize and control their mood willingly, strictly and strenuously and promote their emotional intelligence develop in the right direction to assess students' EQ fairly and objectively.

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The Exploration and Practice of Mechanical Applied Talents Training in Local Colleges in China

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Abstract. Training a large number of certain techniques and skills applied talents is the urgent need to adapt to the adjustment and upgrading of economic structure and industrial structure in China. According to the educational goals of local colleges and universities serving for local socio-economic, the training model of Mechanical Engineering and Automation, theoretical and practical teaching system building, off-campus internship employment bases construction and the overall quality of students training were explored and practiced. A distinctive, scientific and reasonable mechanical applied innovative talents training system was formed. A strong guarantee was provided to meet the mechanical applied innovative talents training quality in the new situation.

Keywords: Mechanical engineering and automation, Applied talents, Exploration and practice, Engineering education.

1 Introduction

In recent years, China's higher education has been developing rapidly, the whole society also made new demands on the quality of higher education.. At present, China is in the stage of traditional industrial transition to a new industrialization, is the period of rapid change for talents demand. Training a large number of certain techniques and skills applied talents is the urgent need to adapt to the adjustment and upgrading of economic structure and industrial structure in China[1]. Therefore, they are important for Undergraduate Mechanical Engineering to change training concepts, optimize curriculum structure, strengthen professional education reforms, improve the quality of teaching and research deep applied training model.

2 Mechanical Engineering Applied Innovative Training Objectives

Professor Pan Maoyuan Considered that our colleges and universities could be divided into three basic types while he investigated the classification and positioning

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of Chinese higher education [2]. The first is academic university, the second is applied institutions and the third is vocational and technical colleges.

Targetted front-line engineers, facing the needs for technological progress and socialist modernization construction in the 21st century, the mechanical engineering and automation applied training objectives of Weifang University as a applied institution is to develop the senior engineering technical talents with a solid natural sciences, humanities and social sciences and basic knowledge of mechanical and electrical engineering, with higher overall quality and stronger practical ability, having innovation quality and development potential, with the ability to solve practical engineering problems and engaged in the design and manufacture of electromechanical products, technology development, applied research, operational management and business marketing, etc. in the production front-line of machinery industry.

3 Mechanical Engineering Applied Innovative Training System

According to the needs of personnel training, Weifang University established the training principles of thick foundation, wide caliber, multi-directional, high capacity and heavy application and built personnel training system and the theory and practice teaching system.

3.1 Establishing a Reasonable Training Model, Taking Engineering and Innovation Education into the Training Program

At present, China is building an innovative country. General Secretary Hu Jintao in National Conference speech said: "cultivating innovative talents is a strategic initiative to build innovative country". As a Mechanical Engineering, engineering and innovative education should be taken to the top priority of personnel training. In the development of training programs, engineering practice and innovative ability should be particularly emphasized, establishing a reasonable innovative training model.

Strengthening engineering and innovative education is extremely important for improving the personnel training quality. In the development of engineering applied innovative talents training program, you must emphasis both practice teaching and theory, linke closely theory and practice teaching to practical engineering background and adhere to the principles of scientific education integrative humanistic education, in order to make the quality education, engineering education and innovation education always throughout the whole process of innovative personnel training.

3.2 Optimizing the Course Structure, Building the Theory Teaching System Facing to Students Capacity Cultivation

In order to build modular theory teaching system facing to students engineering and innovative ability training, curriculum set are characterized by follows. One, laying a solid foundation. Enhance basic knowledge and professional basic knowledge training through the Ideological and Political course, Mathematics basic courses, humanities courses and computer basic course. Two,broadening caliber. The professional foundation courses set knowledges of mechanical, electronic, information, materials and management in one, specialized modules according to their professional orientation set the curriculum, focusing on capacity building of professional applications. Three, clearing directions. The basic professional platform is equipped with three professional directions of Machinery Manufacturing Automation, Mechanical and Electrical Engineering and Mold Design and Manufacture for students to choose, so that students have clear directions and learn a director. Four, paying attention to application. Focus on students' overall quality training of communication skills, human quality, engineering consciousness, morality and so on, enhance professional foundation knowledge and expertise in the practical application and innovative ability. The allocation of courses hours and credits is in Table 1.

Table 1. The allocation of courses hours and credits

course categories		hours	credits	credits ratio
general education	required courses	514	29.5	17.2%
	optional courses	234	13	7.6%
discipline-based and professional courses	required courses	876	48.5	28.2%
	courses limited	284	16	9.3%
	optional courses	126	7	4.0%
theory total		2034	114	66.3%
experiments total		161	9	5.2%
extra-curricular courses of quality education		270	15	8.7%
practice courses		34 weeks	34	19.8%

3.3 Constructing Engineering Practice Teaching System, Strengthening the Engineering Practice and Innovative Ability Cultivation

Practice teaching is an important part to cultivate students innovative and practical ability and platform on which we link theory with practice, cultivate students to master scientific method and improve practical ability[3]. The main purpose of practice teaching in application-oriented education is to develop students ability of technology application, practical skills and technical innovation.Practical teaching system includes the following five modules. One, basic skills modules. Including

physical experiments, engineering drawing surveying, engineering mechanics experiment, tolerance and technology measurement experiment, metalworking, computer application and the application of foreign languages, develop students with basic literacy in science and engineering. Two, professional skills module. Including mechanical design curriculum design, machinery manufacturing base course design, electronic and electrical course design, mechanical, electrical and hydraulic design of integrated curriculum and so on, develop students with basic practical skills. Three, engineering practice module. Including numerical control technology, CAD/CAM/CAE and advanced manufacturing technology engineering training, develop students with strong engineering practice. Four, innovative design module. Including innovation and technology, mechanical and electrical products innovative design competition, 3D design competitions and graduate design, mainly develop students of engineering innovative thinking and technological innovation. Five, professional certification training modules. In accordance with national talent shortage demand conditions, carry out numerical control technology, Pro/E, ANSYS, UG, Solidworks, CATIA and other professional certification training to improve their professional skills of digital design and manufacturing.

3.4 Building off-Campus Internship Employment Base, Strengthening School-Enterprise Cooperation, Cultivating Students Engineering Awareness and Practice Ability

Established Weichai Power Co., Ltd., Beijing Foton Motor Co., Ltd., GoerTek Inc. etc. more than 10 stable off-campus internships employment base, with a high level of nursing teachers. Developed systematic and scientific training plans and programs to provide the conditions for students to develop technology application ability. Enhance students' production practices and knowledge application ability training by union to enterprise in cooperative education, research project cooperation, joint graduate design, production internships, summer internships and other educational links.

4 Conclusions

According to Mechanical Engineering applied Innovative training objectives, combined with the actual situation of Weifang University, the training model, theoretical and practical teaching system building, off-campus internship employment bases construction and the overall quality of students training were explored and practiced. A distinctive, scientific and reasonable mechanical applied innovative talents training system was formed. A strong guarantee was provided to meet the mechanical applied innovative talents training quality in the new situation. It has a very high promotional value and reference for other local undergraduate colleges talents training.

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Research Teaching Methods Used in Equipment Maintenance Programs

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Abstract. Learn modern methods of vocational education, combining characteristics of equipment maintenance programs, equipment maintenance programs to explore new ways of teaching. Teacher to design a reasonable maintenance tasks and teaching situations, the introduction of maintenance tasks naturally and guide students to engage in maintenance training. Students through the organization of discussions, the development of maintenance programs, repair works, the evaluation process of learning to improve learning. Throughout the process of teaching, focusing on student learning center, focusing on the role of the guidance of teachers, focusing on the continuity of the teaching process, a reasonable assessment of student learning, encourage timely participation of students and better equipment maintenance training, the total change in the past single teaching methods to improve maintenance of teaching effectiveness, to solve the traditional process of teaching students on the courses lack of purpose, lack of motivation, learning ability and poor, to better achieve the professional goal of training skilled personnel.

Keywords: Maintenance of teaching, teaching methods, maintenance tasks.

1 Introduction

N.C.O students training goal is to become in line with the needs of professional talent, which is different from the academic education of the most essential features, similar to the local vocational education.

Professional ability is the core of vocational education. [1~2] In N.C.O students training programs, equipment maintenance programs in the curriculum accounted for a large proportion, but the equipment maintenance programs is different from the traditional theory of course, if only to enable students to do what I do, there is no innovation, you can not achieve the training objectives, the competencies can not really form. It is necessary for the curriculum content, equipment maintenance programs to explore new ways of teaching. In the drawing task-driven approach, project teaching, case teaching, with characteristics of equipment maintenance programs, equipment maintenance programs to explore new ways of teaching, for this method of teaching.

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2 Equipment Maintenance Programs Organizational Processes

2.1 Design Maintenance Tasks, the Design of Teaching Situations[3]

Reasonable maintenance tasks is teaching. Students with career needs, combined with the real equipment failure, the teaching content implicit in one or several maintenance tasks, maintenance tasks to complete the process is the center of teaching, guide students from easy to difficult, from simple to complex through a series of task. In this process, the ability to analyze problems, problem-solving skills, and ultimately achieve "zero distance" posting.

At the same time, creating a similar post environment. Equipment on the battlefield, according to security in the form set equipment maintenance job site, students form groups according to group maintenance. This way to guide students into the learning environment so that students closer to the troops, close to the equipment, to achieve a positive sense-making.

2.2 Proposed Maintenance Tasks

The proposal is not straightforward maintenance tasks, but under the guidance of the teacher, thought-provoking questions, the teacher quoted without hair, in the mobilization of the operation of student's desire and curiosity. [3]

First, the theory is introduced. Students in the learning process theory with practice is not strong, the teachers need to use the preview time with the students to understand the physical equipment and printed circuit board, printed circuit board to enable students to draw the map, check the printed circuit board and circuit schematics for the completion of maintenance tasks to do theoretical reserve.

Second, lectures and demonstrations. Focus on curriculum content, a simple example of a typical failure, so that students perceive the process and methods of repair, the appropriate questions, the students and teachers to discuss, so that students and teachers thought the collision of thinking, to improve student interest in learning, build confidence in students to learn the course.

Third, the tasks assigned. Through lectures and demonstrations, students have a basic familiarity with the process of repair, then give each group assigned maintenance tasks. Is typical in the lectures and demonstrations around the fault, based on the set of maintenance tasks, the difficulty increased. Assigned tasks while on the battlefield in the form of equipment with protection methods used to issue commands in the form of maintenance tasks, highlighting the importance of equipment maintenance, improve their sense of responsibility.

2.3 Completion of Maintenance Tasks

First, discussions and exchange. Each group received maintenance tasks, equipment inspection by the head of the organization, the phenomenon of failure to find and clear, the organization within the group discussions. Discuss the contents of the main causes of failure analysis and troubleshooting methods, and ultimately determine the maintenance program. This is the maintenance of teaching a very important part, through discussion so that students are involved in each task to effectively develop students ability to observe, hands-on skills, analytical skills, collaboration skills, communication skills, etc.

Second, carry out repairs. The group organized in accordance with established maintenance programs and equipment maintenance, testing and maintenance of students through hands-on equipment, failure analysis testing the correctness of the final rule out equipment failure.

In this process, teachers must realize that their status and role is to guide the students is the main body. Teacher to keep track, inspection, maintenance of students to understand and master the progress of the task, while attention to mobilizing the enthusiasm of students, but for the maintenance problems of students is best not to directly answer the question, students can participate in the discussion of timely and guide students get answers.

2.4 Summary Evaluation

First, the team evaluated. [4] The team evaluated the main group to group assessment and peer assessment between the form of a combination. Evaluation group organized primarily by members of the maintenance team leader to complete the task to evaluate the situation, team members based on individual contribution of the group to conduct peer assessment, student's own self-evaluation. Inter-group peer assessment is mainly by the equipment inspection team, taking the form of cross, and acceptance of each group to complete the quality of maintenance tasks.

Second, teacher evaluation. Teacher evaluation, mainly from two aspects: First, the students organized and implemented the evaluation of the repair process; second is the evaluation of the evaluation process of the group.

Through student self-assessment, help to improve students' ability to summarize and self-learning ability; through peer assessment so that students share the learning outcomes from the perspective of our students identify problems and suggest improvements. The purpose of the evaluation in addition to assessment results, the more important is to give students encouragement. Teachers can Choice Awards (as Best Design, Best Quality Award, etc.) to stimulate students to greater enthusiasm for learning.

2.5 Summary Maintenance Experience

Accumulate experience for the students to better meet the future needs of job tenure is very important. Especially with the rapid development of equipment, maintenance and support equipment associated with a higher task demands, it is necessary to enable students to develop the habit of summary maintenance experience, and ultimately the ability to have good at summing up.

3 Equipment Maintenance Programs Continuity

Equipment maintenance programs in the organization must pay attention to continuity, the effective expansion of learning time and space, better teaching results. [5]

3.1 Pre-class Task-Driven, Laid the Foundation for the Self-study

Pre-class task is to guide students to preview the main driver. Students have a preliminary understanding of the teaching content, a clear knowledge of learning goals, to avoid the passive situation of lectures, independent study class for the foundation.

3.2 The Task-Driven Class, Students Analyze and Solve Problems

Classroom for students to obtain real knowledge of the temple. Teacher is teaching guide, guide, organizer, and students are the subjects. Exchange student organization to discuss the implementation of maintenance, summary evaluation, the teacher giving them appropriate guidance, students will be in discovering and solving problems continue to make comprehensive use of professional knowledge and basic knowledge, improve observation, hands-on, analysis, collaboration, communication and other capacity.

3.3 The Task-Driven After-School and Achieve the Expansion of Classroom Content

Maintenance tasks will be extended to after school, or even the next lesson will be pre-arranged maintenance tasks to students, allow students to explore their own after school, not only to expand the maintenance course of time and space, but also develop self-learning ability of students to explore independently.

4 Implementation Process Should Pay Attention to the Problem

4.1 Changes in the Teaching Center

New teaching methods and traditional teaching methods, has changed the traditional three centers, namely, changes in teacher-centered to student-centered, textbook for the center was changed to "maintenance task" as the center, classroom-centered transition to the maintenance team for the center. Throughout the process of teaching the teacher is no longer the traditional teaching of the central figure, but the organizers, instructors, guides.

Changes in the status of the teacher teaching, the teacher put a higher demand. Maintenance tasks in the design, ask the teacher must have a solid theoretical knowledge and a wealth of equipment maintenance experience. When student repairing the equipment, the teacher should always answer the various questions raised by the students; in the summary evaluation, to formulate evaluation criteria, organize and guide the students to complete self-assessment and peer assessment.

4.2 Learning Center Changes

Equipment maintenance programs is to promote the teaching of collaborative learning, and everyone involved. Maintenance tasks assigned by the teacher with specific requirements, students have a sense of urgency, but also to improve the student's active participation. Students complete the task in the process of learning and application of knowledge together to develop the students identify and solve practical problems. Also note that the measures taken to help each other, both to overcome the level difference, and students the spirit of collaboration, exchange and cooperation to create a good atmosphere. At the same time due to the different task groups, each group has a different maintenance program designed to improve students' learning ability and innovation.

5 Summary

Proved through practice to construct a reasonable method of teaching equipment maintenance, to take "maintenance tasks" in the form of a higher degree of student participation, the power of self-study more, more space, more intense interest in learning.

Through training, students of observation, analysis, collaboration, communication skills, practical ability and problem-solving skills have greatly improved. Therefore, let the N.C.O students truly become a professional skilled personnel, not only to "give him a fish", but also to emphasize "teach him to fish".

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Study on Task-Oriented Pilot Teaching Method

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Abstract. Task-oriented pilot teaching model was proposed in this paper. Based on the electrical and electronic technology course task-oriented pilot teaching thought was described from teaching content, teaching course and practice so on. At last, design and implement of the task-oriented pilot teaching mode was introduced, which laid a foundation for the use of the task-oriented pilot teaching method in the electrical and electronic technology course.

Keywords: task-oriented, pilot, teaching method.

1 Introduction

Nowadays, with science and technology highly development, skill training is more important for undergraduate compared to knowledge transmission. Learning based on task, based on investigation, based on research, based on question and based on resource are playing an important role during the course of teaching[1-2]. Suitable teaching model should be chosen according to the kind of course, level of students and training object.

Electrical and electronic technology course possessed practicality and practicality. How to away form the subject system and transmit technology and train ability is a big challenge for teacher. Task-oriented pilot teaching model was proposed in this paper.

2 Task-Oriented Pilot Teaching Thought

Task-oriented pilot teaching method was designing a series of experiment programs according to the content that is taught, the previous task was the base of the later task. The later task only could be accomplished under the condition of accomplishing the previous and mastering corresponding knowledge and technology. Especially noteworthiness the first task should based on the knowledge and technology students had mastered.

"Pilot" was that changing conditional teaching schedule of theory preceded practice [3-4]. After independently accomplishing a series of tasks, to nonrepresentational theory was obtained and new learning content was constructed by students. Task-oriented pilot teaching model was that practice before theory, rational

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cognition before perceptual cognition, idiographic learning before abstract learning and combining practice and theory. Students could obtain new knowledge before learning new teaching content through accomplishing a series of tasks, which would markedly improve the operation ability, self-learning ability, cooperation ability and solving question ability of the students [4-6].

3 Design and Implement of Task-Oriented Pilot Teaching Model

3.1 Design Process

(1) Choosing suitable teaching content according to teaching object. Based on practice, teacher should divide teaching content into different modules and set down goal for every teaching module, than choose suitable teaching content for the goal. Teaching content was the base of the task. The experiment task should base on teaching content, and the first task should base on the knowledge student had mastered.

(2) Teacher should set down experiment task and master the scale of design task. Task-oriented pilot teaching method whether or not succeeded depending on the rationality of the task. The experiment task should be interesting and relate to daily life of students. Therefore, there were some aspects should be considered when designing the tasks as following:

Orientation of the task: The experiment task should be interesting and relate to daily life of students.

Difficulty of the task: students had difficulty in accomplishing the task if the task was too much difficult, Comprehensive ability of students could not be improved if the task was too easier. Two situations would make student lose interest and lack of motivation to learn.

Relationship of the task: the former task should be easy, the later task should be more complex than the former, the connection among tasks should be consecutive, and each task should possess respective request and object.

Assessment method of the task: all tasks didn't have uniform or standard answer, and teacher should encourage student sufficiently state different opinions and establish the student diapason, loose-fitting study atmosphere and vivid and interesting teaching scenario, guide students to take part in active participating, active quest to develop the interactive function between teachers and students.

(3) According to progressive characteristic to design the number of experiment task. Series tasks should be accomplished during the teaching, so series tasks should be divided into subtask. The interface between subtasks should be natural and consecutive, and the request and object of each subtask should be explicit.

(4) Teacher drafted guiding question and forecasted the question may be occurred during the experiment. When student had difficulty in experiment, teacher should instruct them through question. These instruction and help would help

students to acquire knowledge and implement experiment, which could also help to train student. On the contrary, teacher told the answer immediately, the result was opposite.

(5) The implement and reflection of teaching experiment. During the course of experiment practice, teacher should encourage student summary basic principle form experiment result, avoiding alone operation. Student should solve question occurred during experiment and discuss the result, and bifurcation occurred during experiment could be solved by teacher.

At last, student accomplish experiment task orderly. Debugging, measuring, recording and analyzing experiment data should be done after each subtask. The main questions should be summarized at last.

3.2 Practical Case

Taking trigger teaching as an example, show the implement of task-oriented pilot teaching method. The teaching experiment was done after learning combinational logic circuit. The principle, application and conversion of trigger were the main task. Because relating to logic circuit principle, student had difficulty in mastering them. Five subtasks were designed in the teaching experiment as following.

Task one: actualizing full adder with gate circuit, shown as Fig.1.

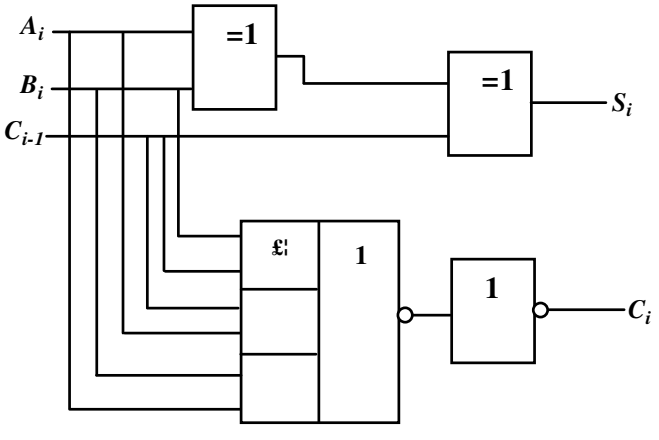

Fig. 1. The circuit of full adder

In Fig.1, Ai, Bi was the summand, Ci-1 was the lower carry bit, Si was the sum of full adder and Ci was the higher carry bit.

Task two: recording carry bit signal of full adder adapting D trigger and showing the carry signal with light emitting diode.

Task three: replacing D trigger with JK trigger to realize the function of task two, shown as Fig.2.

In Fig. 2, CP was the clock signal input and Q was the output of the trigger.

Task four: constructing a bistable trigger with D trigger.

Task five: using output of JK trigger as the clock input of D trigger.

The purpose of the series task: consolidating the design method and steps of combinational logic circuit, reviewing the circuit structure of full adder, comprehending structure of RS trigger, learning NAND gate integrated chip and training to joint integrated chip.

The above five tasks were consecutive. Task one, task two, task three were the base of the task four, task five was the integration of the frontier four task.

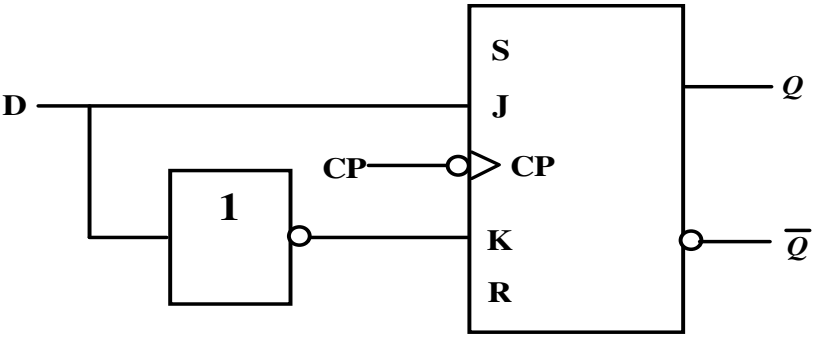

Fig. 2. The principle of transferring JK trigger into D trigger

4 Conclusions

In task-oriented pilot teaching, students were main body of study and teachers were dominant. Knowledge was acquired by student according to initiative exploration and acuminous observation, patient working attitude were trained. Students would acquire joys of successes after accomplishing series task, which would excite learning interest of students and enhance confidence of learning. Students could adapt different methods to solve problem, which would train creative ability of students. During the course of accomplishing tasks, students should collaborate with each other, which would train organizational coordination ability of students.

Acknowledgments. Acknowledgment is made to the donors of the program of design and innovation of course teaching method from Ningbo University of technology (Grant No. KTJX003), for partial support of this research.

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Fuzzy Clustering Segmentation Research for Commercial Bank Customers

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Abstract. In order to solve the problem of commercial banks to identify customers, from the reality of commercial banks, constructs a synthesis appraisal model of commercial bank customer value, proper attention to both practical and suitable. Proposes two-dimensional clustering segmentation method based on the customer current value and the increment value, provides support for the bank to evaluate the customer value objectively, subdivide the customer scientifically, realize the limited marketing and the difference service effectively. Empirical results show that this method can help managers identify high-quality customers, and according to their ability to formulate a quality customer training programs, use the limited marketing resources on the most valuable or most potential customers.

Keywords: commercial bank, customer value, customer segmentation, clustering analyses.

1 Introduction

Along with the development of the financial business, the competitive mode of bank "to the product as the center" has been gradually replaced by the new business model "to the customer as the center", Customers become the most important resource for the bank, and to pay attention to the customer management, mining the customer value be development of banking core power. At present, the bank to the value of the clients are limited to measure customer at present consumption bank products or services for Banks create profits, do not take into account the potential contribution to the customer value. Therefore, this article from the reality of China's commercial Banks, to build a practical consideration and apply the commercial bank customer value comprehensive evaluation model, and based on evaluation results combined with clustering analysis tools to customer resources for the bank an objective evaluation of the segment.

2 Commercial Bank Customer Comprehensive Evaluation Index Value

Existing customer-related indicators and evaluation models are the Market Share, RFM (Regency, Frequency, Monetary) customer net present value model and evaluation system [1]. In this paper, based on the theory of RFM, build customer

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value and comprehensive evaluation index system from the customer's current value and potential value of commercial banks. See table 1.

Table 1. Commercial bank customers comprehensive evaluation value

One class index	Level 2 index	Level 3 index
The current value P	Asset business value P_1	Loan total daily P_{11}
		Average interest rate received P_{12}
		Way of loan guarantees P_{13}
	Liability business value P_2	Deposit total daily P_{21}
		Average servicing rate P_{22}
		Deposit standard deviation P_{23}
	Intermediate business value P_3	P_{31} Intermediate business income
		Transaction number P_{32}
	transaction cost P_4	Weighted average expense ratioP_{41}
Potential valueQ	Development potential Q_1	Industry category Q_{11}
		Enterprise scale Q_{12}
		Credit ratingQ_{13}
	Cooperation potential Q_2	Already the species number of consumer bank products Q_{21}
		Need and the number of species have not purchased the productQ_{22}

2.1 The Current Value of the Target Customer

Customer's current value is the customer at present consumption bank products or services to create profit value for Banks [2]. According to the characteristics of the products and services, The major indexes by assets, liabilities business value business value, middle business value and transaction cost composition.

(1) Asset business value. The business assets including working capital loans and project loans, although bill discount is also a kind of loans to commercial Banks, but it has many differences form general loan in time limit, also in interest and liquidity. Bill discount income will be classified as intermediate business in this article. In the line of credit, the loans may be more than one , we use three indicators to measure, average daily total loans, average interest rates and loan closing period.

(2) Liability business value. Customer deposits are the main form of liability business, the business value of liabilities from the total average daily deposits, the average interest rate of deposits and deposit comprehensive standard deviation duration of four aspects to consider.

(3) Intermediate business value. Reflect that customers through the use of intermediate business products or services to create value, such as customer billing using the tools provided by the banks pay fees and discount income, but also consider the number of transactions of the customer in the investigated period.

(4) Transaction costs. Banks to obtain and retain customers is not without cost, and only takes into account the cost of the customer how much, in order to create the current value of the customer to get a comprehensive and objective evaluation. Banks in the course of business based on business characteristics and marketing costs and other factors determine the cost rate for each variety of businesses, combined with the structure of deposit and loan customers can calculate the weighted average cost of the customer's rate.

2.2 The Potential Value of the Client Indicators

The potential value of the clients is to point to the customer for any one of the same line of business within the territory of the enterprise may be the benefits. When enterprise and customer transaction, the enterprise through the efforts to put part of the customer potential value into real value [3]. Already transformed the potential value formed the current value of the customer; the other potential value is directly decided to the upper limit of appreciation potential in customer's future value. The potential value of the customer mainly by customers own attribute decision, mainly from the potential development and cooperation potential two aspects.

(1) Development potential. It measures the customer whether to conform to the bank policy guidance. Such as, at present, many banks to develop small business credit restrict real estate credit business. The index mainly from the sectors, firm size, credit rating and other aspects of evaluation.

(2) Cooperation potential. It is used to evaluate the possibility of additional customer consumption, specific indicators are the number of products which customer have spend and the number of product which customer need and have not buy.

3 Commercial Bank Customer Value Comprehensive Evaluation Model

Starting from the last level indicator, each index value multiplied by the weight of each draw on a comprehensive indicator of the value, and so on, calculates current value and potential value of the customer, and on this basis, calculated the total value of the customer. The total value of the customer set E, the current value of P, the potential value of Q, the weight of w, v, can get the combined value of commercial bank customers evaluation model is:

$$E=wP+vQ \tag{1}$$

$$P=\sum w_i(\sum w_{ij}P_{ij}) \tag{2}$$

$$Q=\sum v_i(\sum v_{ij}Q_{ij}) \tag{3}$$

The weight of each index said to the important degree of superior index, scientific and reasonable weight is extremely important factors in evaluation process, this paper in determining the weights of each index used the analytic hierarchy process, invited experts to discuss the comprehensive evaluation index system, obtains the weight of each layer of the index ,as shown in table 2.

Customers in the indicator of comprehensive score are subdivision the customer's final basis. For all kinds of index score can be additive, this paper uses classification rules to give the hierarchy of values for each indicator, to give each class to determine a score. The customer value fell on one level, the customer in the index for the corresponding are rated, according to this rule, the end all index values of all transformed into the form of are rated in order to comprehensive weighted evaluated.

Table 2. Comprehensive evaluation index weight distribution list

level 1 index	level 2 index	level 3 index
w=0.56	w_1=0.28	$\sum w_{1j}$=1(j=1/2/3) w_{11}=0.48 w_{12}=0.25 w_{13}=0.27
	w_2=0.34	$\sum w_{2j}$=1(j=1/2/3) w_{21}=0.50 w_{22}=0.21 w_{23}=0.29
	w_3=0.25	$\sum w_{3j}$=1(j=1/2/) w_{31}=0.54 w_{32}=0.46
	w_4=0.13	$\sum w_{4j}$=1(j=1) w_{41}=1
v=0.44	V_1=0.52	$\sum v_{1j}$=1(j=1/2/3) v_{11}=0.35 v_{12}=0.21 v_{13}=0.44
	V_2=0.48	$\sum v_{2j}$=1(j=1/2/) v_{21}=0.55 v_{22}=0.45

4 Commercial Bank Customers Cluster Subdivision

At present the main clustering algorithm has division method, level method, based on grid method, based on the model of the algorithm, based on the method of density, etc[4][5]. Level method relies on the given conditions, in the method based on grid depends on the threshold value of filter conditions set, based on model algorithm depends on the assumption of the model, a based on density of the algorithm relies on set the density of the threshold. For users, these conditions or the threshold sure is hard, and divided law depends on users want to ultimately divided the grouping of several K. For bank customer segmentation, K value for the determination of the breakdown of the particle size depends on customers hope, the operation is more easily. Therefore, the K-Means division method is employed to clustering analysis, segmentation procedure is as follows:

(1) Two-dimensional cross-clustering, resulting in an initial customer base. According to the previous description, the use of K-Means clustering method, the customer's current value and added value to do two-dimensional cross-clustering, clustering produces an initial customer base calculation, credited to the customer segmentation data mart.

(2) Customer base adjusted to produce the final customers. Customer base the adjustment process is a process to constantly adjust the value of K, a K value that is selected for clustering analysis, the need to judge the results of cluster analysis to determine the reasonableness of the classification of customers, whether it has achieved the desired segment size. If you need to adjust accordingly below the expected value of K, and then re-clustering, after repeatedly until a satisfactory segmentation results.

5 Application Examples

This article collected 100 corporate clients to conduct empirical research from a branch company of a city commercial bank, time limit for samples from January 1, 2010 through December 31, 2010, data from the public balance sheet and the credit inquiry system of the bank.

(1) The data collection. This paper collected deposit and loan data, transaction data and customer service date, used to calculate the value of customer segmentation. Deposit and loan data by sorting the table to obtain, customer's transaction history to get from the bank's settlement system, customer service data to inquires the bank credit management system, as well as consult relevant employees.

(2) The data arrangement. The basic data collected samples according to the principle of hierarchy dimensionless calculation.

(3) Build customer segmentation data mart. AHP to get the weight of the index system, and to look for each level 2 index values and the current value and potential value, build a simplified customer segmentation data mart.

(4) Clustering subdivision. Use SPSS11.5 statistical software, according to K-Means method to establish the data mining model. In customer dimension, doing two-dimensional cross-cluster to the customer's current value and potential value, plans to produce eight customer base(K=8). After the data mining, produced the preliminary customers division. From the clustering results look, can be summarized as roughly five types of customers, so K value adjustment for 5, to produce the new customer base cluster.

(5) Marketing strategy. Both current value and potential value of customer base Ⅰ are in the middle and lower reaches, the bank should give their more attention to have more understanding, but also the implement of the cross selling marketing strategy. Customer base Ⅱ has high current value and potential value, this kind of customer is of high value, is the most important customer, bank should put the main source into development and keep the customer relationship, fully understand the customers, to provide the high quality service one-on-one. Customer base Ⅲ has low current value and potential value, the customer doesn't have to again the investment of resources, finish each transaction step by step, it is necessary to consider whether it should be give up located in the area of customer. The current value of customer base Ⅳ is lower, but potential value is high, this kind of customer is the important development and cultivate object for bank, implements the effective marketing strategy to them, they will bring higher profit margin to

bank in the future. Customer base Ⅴ has high current value, but potential value is low, this kind of customer and bank current volume is larger, but it is unlikely to obtain greater profits due to the limited strength of the customer, the bank should try to maintain good relationship with the customer to avoid customer churn, but it is not necessary to invest too many resources.

6 Conclusions

This paper constructed the customer value comprehensive evaluation model based on commercial bank customers management features, and put forward two dimensional clustering subdivision methods based on current and potential value. Not only can help managers identify high-quality customers, and according to their ability to formulate a quality customer training program, put the limited marketing resources on the most valuable or most potential customers. Finally, in a city commercial bank as an example, the method described the practical application of proof, proved the feasibility of the proposed method.

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Research on the Three-Dimensional Teaching Resources

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Abstract. This paper summarizes the present situation of three-dimensional teaching resources, gives its characteristics and advantages. Based on comprehensive analysis, discusses a design of this three-dimensional teaching resources model. And an application of this model is shown. This model includes three subsystems, teaching resources, teaching process and teaching evaluation. It is a cover of the whole teaching process. In this three-dimensional space, teachers could carry on many kinds of teaching activities, including theory teaching, experimental teaching and learning, self-learning, team cooperation and workshop. Such three-dimensional teaching system based on network provides improving learning evaluation and efficient information feedback. All forms of teaching resources, which are supported by information technology and multimedia technology, are presented in different media. This teaching system can satisfy the interactive teaching and learning, the resource diversity and the optimization of teaching evaluation.

Keywords: teaching space, teaching resources, teaching evaluation.

1 Introduction

Teaching resources as a basic elements of teaching system is the main support of teaching content, is also the important guarantee of the achievement of teaching goals. The new model of college teaching resources should be a organic combination of written materials, digital teaching resources, website, and other open, practical, interactive features. It should be a three-dimensional teaching resources. Three-dimensional teaching resources construction and research is an important part of the reform and development of higher education.

2 Three-Dimensional Teaching Resources

With modern education technology development, the teaching resources changes its form from paper to digital, from single media to multimedia. To the modern

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education idea as the bases, to the modern education technology and information technology as the means, to media material as the foundation, according to the intended target, the three-dimensional teaching resources is all-round systematic integration of teaching information which apply to all kinds of teaching object, cover the whole teaching process. [1]

The traditional teaching resources regard the knowledge system as the main content, linear structure as the main structure. It only has a single knowledge transfer function in the process of teaching, only applies to those student group of relatively fixed type and level, and cannot meet the needs of the information age. In the contrast, the three-dimensional teaching resources regard the knowledge system, digital instructional resource, teaching activity design as the main content, namely, linear structure and nonlinear structure. It has capabilities of interaction knowledge transfer.

3 Definition and Application

Three-dimensional teaching resources is a systems engineering[3], which emphasizes teaching resources in multimedia forms at the same time. And it is a cover of whole teaching process and evaluation system. Teaching resources is no longer just simple present of the teaching content. This teaching resources, the teaching process and teaching evaluation together form a three-dimensional teaching space.

3.1 The Definiton of Three-Dimensional Teaching Resources System Model

χ:Three-dimensional teaching system
α: Teaching process
β: Teaching resources
γ: Teaching evaluation
α={αil theory teaching, experiment teaching, autonomous learning, group cooperation, topic discussion}
β={βil paper textbooks, teaching plan, teaching video, demo video, teaching BBS}
γ={γil self-assessment, class assignments, stage test, group evaluation, Internet tracking}

$$\chi=\alpha \times \beta \times \gamma \tag{1}$$

This three-dimensional teaching resources system model is shown in figure 1 below.

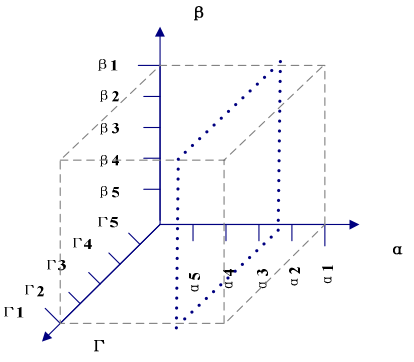

Fig. 1. The three-dimensional teaching resources system

3.2 The Application of This Three-Dimensional Teaching Resources System Model

In this model, αi is an element of α. And αis a set of teaching process, which includes theory teaching, experiment teaching, autonomous learning, group cooperation, topic discussion etc.

βi is an element of β. Andβis a set of teaching resources, which includes paper textbooks, teaching plan, teaching video, demo video, teaching BBS and so on.

γi is an element ofγ. And γis a set of teaching evaluation, which includes self-assessment, class assignments, stage test, group evaluation, Internet tracking and so on.

In this case, if there is a certain αi, βi and γi, one certain teaching system will be founded.

$$\chi i=\alpha i \times \beta i \times \gamma i \tag{2}$$

Take the α1 is one kind of teachingprocess, group cooperation, as an example. Theβandγare assumed as below.

α1= group cooperation
β={βil paper textbooks, teaching video, teaching BBS}
γ={γil self-assessment, stage test, group evaluation }

$$\chi 1=\alpha 1 \times \beta i \times \gamma i \tag{3}$$

In the expression (3), a teaching space is founded. In this teaching space, the group cooperation process will be supported by many kinds of teaching resources, such as textbooks, videos and BBS. Therefore, the group member could choose different way to accomplish their study goal in different stage. That is to say, they could choose one kind or Various combinations of teaching resources in the same time if they need.

Moreover, this process could be evaluated in different ways. One single study evaluation way can hardly meet the group study process. In this teaching space, each group member should gives a self-assessment to themselives and gives a group evaluation to the others. Additionally, the whole study process will be devided into many stages which are assessed by stage tests.

4 Advantages and Characteristics

This three-dimensional teaching resources system model reflects the interactivity of teaching process, the diversity of teaching resources, the optimization of learning evaluation.

4.1 The Interactivity of Teaching Process

In this three-dimensional space, teachers could carry on many kinds of teaching activities, including theory teaching, experimental teaching and learning, self-learning, team cooperation and workshops. The learning process also becomes flexible. In different teaching activities, students actively construct their own knowledge system. Such teaching process is no longer a simple teaching-taught process. And, in the network environment, i teaching process is also easy to control.

4.2 The Diversity of Teaching Resources

All forms of teaching resources, which are supported by information technology and multimedia technology, are presented in different media. These media resources can easily be realized, organized and queried. One knowledge point can be shown in character, video, audio and simulation demo forms. This diversity makes the process of teaching becomes interest and colorful.

4.3 The Optimization of Learning Evaluation

Such three-dimensional teaching system based on network provides improving learning evaluation and efficient information feedback. On one hand, this system could give immediate feedback to learners about their studey process record in order to make them learn on their own problems and adjust their study next stategies. On the other hand, according to the individual difference, teachers could establish new learning model, learning achievement, learning evaluation and give advice.

5 Conclusion

In this three-dimensional teaching resources system, the teacher can carry on all kinds of teaching activities, students can give full play to their autonomy. Additionally, Learners can fully control the learning process, choose study content and learning partners, evaluate the study result. The most important is that, in this 3D space, teachers could easily track learners' learning process, analysis of their learning habits, evaluate their learning activities all-round, as well as to further adjust the teaching process to better adapt to the learners' learning habits.

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Exploration of Independent College's '234 Practical Teaching Content System'

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Abstract. Practical teaching is one of the most important parts in the higher education process as well as the key part to create students' ability. Practical teaching is important and difficult in the teaching reform of an Independent College. The reform of practical teaching should continuously bring forth new ideas. In order to realize the talents training target, a new and human-oriented content system of practical teaching need to be built and practical teaching need to be more standardized, scientific and stylized. This article discusses two principles of content system of practical teaching reform, and analyses the three levels and four modules of practical teaching system, in addition analyses practical effects which based on Wenjing College, Yantai University.

Keywords: Practical teaching, content system of practical teaching, the reform of practical teaching, independent college.

Introduction

Practical teaching is one of the main teaching links as well as teaching methods and ways to understand, consolidate and deepen the theoretical knowledge .It is an effective way to develop students' skills, innovation, entrepreneurship, and creativity. Practical teaching reform should be on an ongoing and practical teaching method and approaches should be updated to improve teaching quality. In order to achieve the training objectives, a new and people-oriented practice of educational content need to be established. Teaching practice needs to be more standardized, scientific, and procedures [1], [2]. In this paper, we take Wenjing College, Yantai University for example to explore the practical teaching content to build an Independent College system in two principles, three levels and four modules.

1 Two Principles of Practical Teaching Content Reform

The built principles of practical teaching content system should adhere to the social demand, deepen teaching reform, and build the initiative personnel training system which adapts to economic and social development. A concept of modern

L. Zhang and C. Zhang (Eds.): Engineering Education and Management, LNEE 112, pp. 403–411.
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education should be set so that students can have ample opportunity and time to practice and perception of the acquired knowledge. It focuses on and strengthens the reconstruction of practical teaching system and students' practical skills and innovative training [3]. The reform of practical teaching system reform should follow the following two basic principles.

1.1 Strengthen the Practical Teaching and Refine the Theory of Teaching

Independent Colleges should take lifelong education as a guide. The design of the course structure and system should be conducive to professional development from the perspective of the target. The curriculum can be restructured and integrated to strengthen the organic link between curriculums to reduce unnecessary duplication and program. It should not emphasize too much on the integrity of the disciplinary system. It should achieve modular courses and series. According to the various courses of the training process in the role, status, course content and requirements to properly identify the credits (hours) and take full account of the convergence between courses, to reach the purpose of refining teaching. Every profession should coordinate planning practice session, and formulate practical teaching program and rationally build a systematic, standardized and scientific teaching system. The proportion of experimental courses should be reasonable arranged to strengthen the practice base of practical teaching and laboratory construction, Focus should be on improving curriculum design, graduate internships, graduate design(thesis), social practice, teaching quality and efficiency in addition, strengthen the combination of teaching, research and social practice.

1.2 The Content System Should Be Reasonable; All Elements Should Be Optimized

Content system of practical teaching is complementary with theoretical teaching system which focuses on training objectives of professional talents in the development of teaching plans, reasonable curriculum settings and reasonable allocations of each practice teaching (experiment, practice, training, curriculum design, graduate design, innovation production, social practices, etc). System is at a certain interrelated links among a relationship with the environment, the various components of the overall. Practical teaching system is a complete organic link system which needs to continuously improve every aspect, so as to create a good educational environment for the development of students. Equipment, management, teaching, teaching methods, teaching materials, evaluation, and so on should coordinate the development, and be neck and neck, so as to form interactive teaching and learning, as well as teacher-student rapport. Practical teaching system must be reasonable with the various elements, integrated to achieve optimal results.

2 Three Levels of Content System of the Practical Teaching

There are two main modes of the content of practical teaching system, one is the traditional content of the teaching system which is divided by subjects, and the other is divided by ability level 'hierarchical integration' of the practice of educational content. The training objective of Independent College is application-oriented which emphasizes on 'capacity-based' to organize the teaching and hierarchical culture. Students should be at different levels of training, progressive layers, gradually increase. Students should develop their ability of the integrated use of knowledge, innovative capacity and the ability to solve key technical problems [4]. Building a complete, scientific and rational practice of teaching system is the fundamental guarantee of achieving the training goals of talents. The establishment of practical teaching system needs to integrate the imparting knowledge, capacity-building with improving the quality. The teaching plan should focus on the overall quality of students, which starting point should be from academic characteristics and needs of social development. The practical teaching is divided into three levels (Fig1), which composition and theory of teaching not only interrelated, but also a complete system of relatively independent, thereby promoting theoretical knowledge, practical ability, thinking ability, and overall quality of the whole development.

2.1 Practical Teaching System on Campus

Practical teaching system on campus includes experimental teaching (basic experiments, specialized experiments and comprehensive experiments), military training, community service, curriculum design, computer application in practice, students technology training, language training, graduation project (thesis) and so on.

For the experimental teaching, firstly we must change the traditional concept of weigh theory and light practice. Teaching attached to theoretical teaching of the old teaching model should be changed. To break through the boundaries of disciplines and theories, we should make the experimental design of teaching as a whole and establish a theory of teaching both interrelated and independent experimental teaching system. It reforms the teaching content, methods and means and notes the introduction of new production technology, scientific and technological achievements, changing the validation into comprehensive and designing experiments. Experimental contents and experimental projects which emphasize the development of innovation capacity should be set up and introduce emulation, simulation tools, open laboratory, so that students can get more subjectivity into full play.

School construction and skills training should be made for students to get basic engineering skills and technique training and to develop good habits of labor disciplines and scientific, rigorous, high quality, efficient work styles such as engineering drawing, design, computer application in practice, literature search,

community service, metalworking, electronics technology practice, pump disassembly etc which are the basic training in engineering practice of engineering students—all of this must be completed at school. The link which is established according to evaluation criteria is based on advanced equipments, full types of work and stable teaching staff, to ensure the quality of engineering training at school.

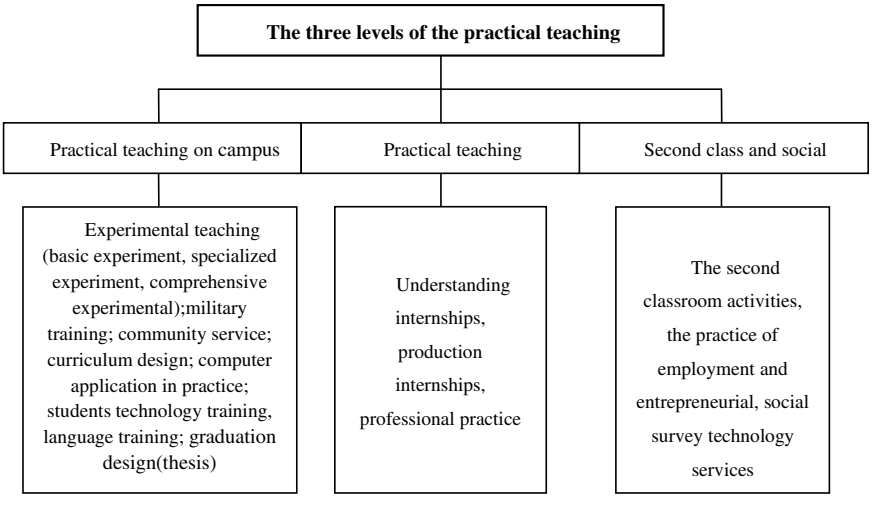

Fig. 1. The three levels of the practical teaching

The teaching process of graduation project (thesis) is important training stage in achieving training objectives and requirements as well as the important practical teaching links to develop the students' overall quality and the practical ability. The purpose of graduation project (thesis) is to train students in the integrated use of multi-disciplinary theories, knowledge and skills, and to train students to work independently, and to develop their independent thinking and analysis as well as to solve practical engineering and related problems. Theoretical knowledge should be deepened, knowledge be expanded, and professional skills be extended. In the graduation project (thesis) session, special attention should be paid to students' serious scientific attitude and rigorous and realistic work style, to set in line with national conditions and the actual production of the correct design ideas and perspectives to develop good engineering sense, economic sense, environmental awareness and social responsibility. In this session, we ensure the graduation project's (thesis) quality and abandon the old mechanism, in addition, we set up a new mechanism of a graduation project (thesis) topics and review. We adhere to a combination of research throughout the whole process of the graduation project (thesis) and to explore broad cross-disciplinary graduation project (thesis) and a series of new models of teaching reforms to be more conducive to application oriented talents.

2.2 Off-Campus Practice Teaching System

Off-campus practical teaching system is to enable students to recognize, understand and master the society, enterprises and institutions of modern production facilities, equipment, production process, scientific management, etc. through recognizing internships, production internships, professional internships, graduate internships and other practice teaching so that they can lay a solid foundation for their future. For this part, we have established a relatively stable high starting point, a unique off-campus practice base for the cultivation of an innovative spirit and practical ability of the compound talents, which provides a good teaching environment and conditions.

2.3 Second Class and Social Practice System

Through social practice, the students learn about the community, and increase knowledge and skills to develop hard-working spirit, which have played a positive role in the realization of training specifications, and develop a good campus culture to promote the improvement of students' intelligence and expertise. We strengthen the social practice teaching, and establish a long-term stability of the social practice base, and organize students to do social practice each year. In addition, we adopt flexible and diverse forms of the combination of on campus and off campus. Through a variety of teaching practices, students have achieved good results and expanded the education sides as well as achieved a better theory applied to practical purposes. At the same time, it mobilizes the students to join the initiative in social practice, and strengthens the overall quality of the training of students.

In the spring of early 2009, Wenjing College, by means of giving full play to the advantages of independent and flexible system as well as the advantages of the intellectual resources and depending on the favorable conditions of close connection with society and enterprises, developed the resources and market of the campus economy directly providing jobs and career guidance for graduates to solve the problems that they don't have conditions to start their own business, and founded 'Wenjing College, Yantai University Self-employment Test Garden'. The test garden, with the purpose of helping the students get employed, is a service and non-profit organization. It introduces the entrepreneurial operation mode with the ability of research, guidance, operation and management. The test garden, operated on the mode of 'governmental support, social involvement, college assistance, freewill participation, entrepreneurial operation and standardized management', has perfected the organization, system and management and it can provide assistance, supports and serve the students in consultation, approval process, loans, legal aid, management guidance, logistical support, etc. It is regarded as the buffer zone to reduce the employment pressure for society, the assistance station to help the poor graduates go to society, the training ground to improve the students' practical skills, the demonstration area to explore a new model of employment and self-employment, the experimental field to expand the educational function, and also the booster to achieve the successful self-employment of high-quality talents. The 'Self-employment Test Garden', relying on the resources and market of the

campus economy, is a new model of the practice teaching in colleges and universities, which offers students opportunities of social contact, helps them get trained, accumulate experience and increase abilities and finally provides experienced and qualified talents for the society.

3 Four Modules of Practice Teaching System

With reference to the practice teaching, its contents are the specified objectives and tasks. Specifically, every part of practice teaching including experiments, internships, trainings, curriculum designs, graduates designs, innovative makings and social practice, through the rational allocation, are oriented by the ability of applying technology in order to arrange the contents of practice teaching step by step according to the three dimensions including the basic skills, professional skills and the technical proficiency level, and put the objectives and tasks into practice, from which the students can learn the complete, systematic skills and technology application-oriented talents should have instead of fragmented knowledge[5]. Therefore, in addition to the above-mentioned three dimensions, the content system of the practice teaching should include the following four modules, namely, experiment module, internship module, design module and innovation module. The education of the three dimensions is penetrated into the teaching process of the four modules.

Experiment module, in which the students can have basic engineering practice training, aims to enable the students to complete the transformation from knowledge accumulation to ability generation, and to give the students a preliminary training about the awareness and quality of engineering. The organization of the teaching content in this module must achieve the extensive mutual penetration between courses and disciplines, so that the students can get the overall, subject-based engineering ability developed. The teaching process in this module must meet the training laws of the engineering ability and quality, that is, in the process of accumulating engineering knowledge, the training of engineering awareness, quality and ability takes shape step by step. Therefore, the teaching process can be divided into three parts: the first is to promote the students to deepen the theoretical knowledge and master the basic laboratory skills and methods with which the students can do some basic experiments mainly for demonstration, validation and basic operation; the second is to foster the students' abilities of using comprehensive knowledge which enables them to carry out some comprehensive experiments, fault-finding experiments, and application-oriented experiments with prominent engineering features; the third is to train the students to do design experiments which can improve their engineering design abilities and creative thinking.

Internship module is a module which provides the students a more comprehensive practical engineering training. Its aim is to help the students develop the practical engineering ability and quality. The teaching requirements of this module are achieved through the internal engineering practice base (Engineering Training Center) and external engineering base. 'Four Platforms' should be built in the internal engineering practice base (Engineering Training Center), namely, industrial systems cognition platform, basic engineering training platform, modern

engineering systems training platform and comprehensive and innovative training platform, which put the innovative training throughout the whole engineering training and finally the student-centered engineering training teaching system is formed possessing the characteristics of all-sided (market, environment, systems, management, quality, efficiency), comprehensiveness (design, manufacture, control, and management) and openness (the overall process of all-day training facing the whole society and all students, and the service provided for teaching, research, fruits incubation, talent training and lifelong education). Production (graduation) internship, a key part in engineering teaching, is done in the external engineering base. The steady construction of the external engineering base, being the important guarantee for the training of knowledge, ability and quality, allows the students to obtain relatively complete engineering practice. Therefore, the past site, craft-based production internship should be reformed and transformed into the production process internship during which the macro-thinking will be mainly developed and students are required to focus on getting to know the process of modern production, the organization and scheduling of personnel, capital and equipment and also the marketing strategies of products.

Design modules, in which the students will practice engineering design ability, mainly include curriculum design, extra-curricular interest design, graduation project, etc. The graduation project is the most important training part, demanding the students to fully grasp the basic skills and methods of engineering design in order to meet the basic requirements of engineering education. Therefore, in the guidance of graduation project, two issues should be placed emphasis on: one is the effectiveness of the engineering quality training (The students can fully grasp the basic engineering design skills and methods to achieve the proposed curriculum requirements.); the other is applicability of the engineering ability training (The acquired knowledge and ability in engineering design is tested in practice and prove applicable in future work.)

Innovation module enables the students to solve engineering problems and develop innovative ability. Being a new form of teaching, the teaching process of innovation module is student-centered, which means active participation and active practice are the basic characteristics in order to achieve students' comprehensive development in various abilities. The teaching of this module is in full process covering the entire college engineering education. In the first and second grade various types of experimental technique competition will be mainly carried out and in the third and fourth grade extra-curricular activities and works of science and technology competition will be mainly conducted, for instance, National Undergraduate Electronic Design Contest, Mathematical Modeling Contest, 'Challenge Cup' Competition, Business Design Competition, etc. Meanwhile, given the actual situation, innovation project and 'Students' Scientific Research Training' (SSRT) should be started timely. All of these can greatly improve the teaching quality of engineering education and develop a good atmosphere within the college favorable for students in creative thinking, creative skills and practical abilities at various stages of training.

The four modules penetrate and integrate each other, supporting the engineering practice teaching system in engineering colleges and building a teaching module for college engineering education, which, with distinctive features under new situation, is a integration of knowledge, quality and ability.

4 Practice of Practical Teaching Content System

In recent years, Wenjing College, based on the goal of 'Training the senior specialized application-oriented talents with innovative ability, practical ability and entrepreneurial spirit', determined the way of the practice teaching including both basic practice and professional practice, both basic skills training and innovative training in order to meet the requirements of cultivating and improving the students' knowledge, ability, quality and coordinated development, which is mainly reflected in the following aspects: bring the practice teaching into the education plan and set up independent practice teaching system; strengthen the basic practice and stress various types of internships especially the professional practice to ensure the mutual complementation and integration of the various parts of social practice; stick to the 'four continuous', that is, the continuous computer learning and application, English learning and application, practice teaching and innovative education; the continuous update of the contents in practice teaching; the continuous improvement of the system design; the continuous creation of conditions to enable students to quickly participate in technology and innovation activities. The specific methods are as follows:

Stick to the overall optimization and build the 'application-oriented' curriculum system. Centering on professional ability training, determine the training objectives of various majors in a scientific and rational way, seriously examine and approve the teaching contents, make reasonable adjustments to the curriculum structure, pay attention to the links between different curriculums, cut the number of curriculums as well as the repeated ones, improve the comprehensiveness of the curriculums, and build the main curriculums and professional direction module in different majors in order to achieve the overall optimization in curriculum structure and system.

Intensify the practice teaching and highlight the ability training. Build the practice teaching system which corresponds to the application-oriented training objectives and the practical ability training should run through the whole teaching process. Restructure the experimental courses by appropriately reducing validation experiments but increasing the ratio of complex and design experiments. Separate experiment courses from skills training courses, bring extra-curricular activities into training programs and increase the innovative trainings for academic competitions as well as for practical skills trainings. Effectively improve the quality of experiments, internship, curriculum designs, academic papers, social practice and graduation project (thesis) and put the training of strengthening innovative spirit and practical ability for the students into effect.

Add postgraduate exams training and skills training in order to respectively satisfy students' demands of further study and employment. Considering the demands of further study, do more research about the test subjects, provide additional counseling

sessions apart from curriculum teaching and provide guidance and training for the those students who sign up for the postgraduate exams with the purpose of improving the acceptance rate. Combining with major teaching, increase the professional qualification and skills training to further reinforce the students' competitiveness.

Place emphasis on quality education to promote overall development of students. Operating on the principle of all-round development in morality, intelligence, physique and art and considering the teaching demands of organically consolidating knowledge transfer, ability training and quality education, strengthen curriculum development in social science, humanity and art to form the training system with penetration of art and science, cross-disciplinary integration and the combination of morality, intelligence, physique and art. Improve the students' humanistic literacy and scientific literacy as well as their active learning ability, practical ability, innovation and social adaptability.

Overall planning the practice teaching, adhere to the practice teaching 'four years continuously' to form a systematic practice teaching system. When designing curriculum, fully consider the comprehensiveness and exploration of the practice teaching, actively introduce design experiments (practice) courses to strengthen the training of the innovative design ideas and methods and cultivate the students' ability of identifying and solving problems.

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Preliminary Study on the Cost Control in Medium and Large-Sized Construction Project

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Abstract. Medium and large-sized construction projects are affected by such factors as complex construction, long period and large investment etc. Conception of project management is described while the main points and basic principles on the project cost controlling management are analyzed. Furthermore the desirable goal of medium and large-sized construction projects in cost control is established. A model of cost controlling management has been set up. The main issues on the cost control are further studied and addressed through various respective measures. Advice on cost control is provided for similar engineering endeavors.

Keywords: Medium and large-sized construction project, Cost control, Process control.

1 Introduction

Cost control of medium and large-sized projects should be focused on characteristics such as complex technology, long duration, large investment, etc. The current major problems [1] in cost control are shown as follows. Firstly, objectives of the project cost control are usually developed in arbitrary way with a wide range of fluctuations, which makes the progress of cost control difficult to be fulfilled. Secondly, responsibility on cost control is not fully taken by project managers for lack of incentives. Thirdly, awareness on the cost control is relatively weak. Fourthly, negligence of contract management and weak awareness of cost claims exists, which can cause extra loss. Solutions to these problems have been studied and suggestions for engineering ends are given in this paper.

2 Principles of Cost Control

(1) Lowest cost. The target of the lowest possible cost is achieved through a variety of means to reduce project costs in cost management in medium and large-sized construction projects. In the implementation of the principle of lowest cost, attentions are paid to the possibility of reducing reasonable minimum costs.

L. Zhang and C. Zhang (Eds.): Engineering Education and Management, LNEE 112, pp. 413–418.
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(2) Overall control. The holistic cost control about all personnel and time is carried out. The contents of cost control are decomposed into various levels as single projects, unit projects, divisions and sub-projects. The costs of construction and installation, industrial equipment and acquisition as well as other aspects are controlled throughout all stages of construction progress continuously.

(3) Dynamic control. Project objectives and implementation process are tracked to find out the deviations between actual project costs and program objectives of the project. Program is modified to accomplish goal of cost control by way of limited cycles at various levels.

(4) Responsibility system. A suitable model of cost control for the specific project is analyzed to establish responsibility system of cost control while the binding targets are formulated to verify the personnel duties participating in the construction various levels.

3 Goal of Cost Control

The efficient organization of the construction project is set up with a project manager responsibility system in accordance with its inherent laws to effectively plan, organize, coordinate the process of construction in order to adapt to its internal and external environments. A model of cost control under the medium and large-sized project is set up in Fig.1.

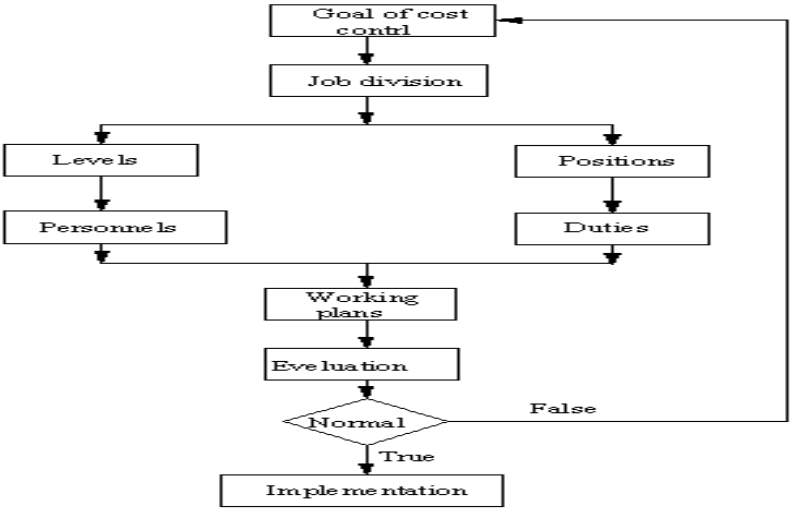

Fig. 1. A model of cost control

Balance and continuity of construction is insured through optimal combination and rational allocation of production factors. Cost control is fulfilled through correcting the deviation occurred at certain time with specific effective measures. The means of modern management techniques are employed to the medium and large project in order to fulfill its objectives of cost control [2]

It may be expressed as the following situations:

(1) The actual cost does not exceed the planned goals at each levels of the decomposition of cost objective. This is the most ideal and desired situation to pursue the highest goal of cost control.

(2) In the lower level at the decomposition of the cost goals, the actual cost in some cases might exceed the planned investment while in most cases it does not exceed the planned investment. Thus the higher level at the decomposition of the cost goals, the actual cost does not exceed the planned cost.

(3) The actual total cost does not exceed the total planned investment when there are cases of more cost than the actual investment at each level of decomposition goals, but in most cases, the actual investment does not exceed planned one.

Although in the latter two situations, there are cases that the actual cost overpasses actual investments, the overall actual cost of the total investment is under control, which still is a satisfactory result. Moreover, in addition to the investment control measures, there remain some problems to be improved and perfected. Irrational decomposition of investment objectives may happen and furthermore, for a medium and large-sized construction project it is not easy to decompose the cost goals to an absolutely reasonable level.

4 Main Points of Cost Control

There are many affecting factors that should be taken into consideration in the cost control of medium and large-sized construction projects. Most important factors and main controlling points are outlined and analyzed in the following lines.

4.1 Construction Contract

In medium and large-sized construction projects, the profiles of the project should be fully understood, including the qualification level of stakeholders, business class and qualifications, financial status, work performance, social prestige and other relative aspects before the assignment of construction contract. Meanwhile construction contractor should study carefully on the feasibility of the project according to their own situation and condition. Planning costs are based on construction plans which require project quality and progress indicators with the preparation of detailed construction plans. The preliminary items in tender documents or construction contracts and the sub-unit projects that need modifications are reported promptly and immediately to increase the project revenues and interests. Reasonable increase in revenue and interests is thus claimed under the rights

provided by the contract with strengthened sense of claims for unexpected losses to reduce the expense.

4.2 Technology

Construction program which is the soul of cost control should be analyzed carefully and then optimized. Construction program includes four aspects: methods of construction, choice of construction equipment, sequence of the arrangement and organization of construction flow. Construction program is developed according to the contract duration and the overall arrangement by the managements. The construction site is scientifically laid out according to its specific surroundings. The enthusiasms of the management staff for the reduction in cost are fully mobilized through reasonable suggestions they have provided to enlarge the scope and depth of cost control.

4.3 Quality and Safety

In medium and large-sized construction projects the cost control and quality control as well as safety control should be considered as a whole system. At the same time, it is the target for the entire construction of the control activities implemented by the system as an integral part in the implementation of cost control, while the progress required meeting predetermined goals and quality objectives. Therefore, the cost control process is supposed to coordinate the relationship of and quality control and safety control, so that the organic control and mutual balance of the three goals instead of just one-sided emphasis on cost control is implemented. As mentioned above, coordination and balance of target planning for cost, quality, and safety goals might be repeated periodically to strive to achieve the optimal target system.

The probable losses are supposed to be reduced to a minimum when construction codes and specifications as well as safety procedures are followed strictly so as to prevent failures in quality and safety.

4.4 Machinery Management

Machinery Management refers to the whole process of dealing with the management such as construction equipment business, machinery and equipment purchase, business production, use and maintenance, renovation and scrap etc, which includes physical movement and value movement of all management of the whole process. Management of construction machinery is an extremely important tool for construction enterprises to control cost [3].The machinery and equipment management departments are established and perfected, unifying planning, individual responsibility and comprehensive integrated management. Professional management and human recourses management on responsible duty in machinery at all levels are contrived to perform their respective functions.

Scientific and rational selection of machinery in light of engineering needs is critically vital to the utilization of its efficiency in medium and large-sized construction projects. Construction sections are severed appropriately to improve mechanical performance under regular maintenance by which the overall progress of the construction has been guaranteed.

4.5 Materials

The procured materials are measured correctly with careful inspection with the principle of "high quality, low price and short distance" to reduce the consumption in the whole procurement process in medium and large-sized construction projects. Downtime has been avoided strictly by sound and scientific organization and arrangements. The requisition of materials is in tight control and sound stock. Comparative data of the actual consumption and the planned one are in hand anytime in order to gather information for the engineering use [4].

4.6 Finance

Approved fees and expenses in medium and large-sized construction projects are checked tightly with the balance of capital and the subsidiary records of various departments. Inspection and supervision of the cash flow is implemented by the financial departments. The results are fed back to decision-makers timely so that the deviation or errors can be corrected to the normal track with detailed and specific measures [5].

5 Conclusions

In summary, the cost control of medium and large-sized project can be followed as the below aspects.

(1) Targets of specific project cost control should be set and further decomposed to the practicable extents.

(2) A high efficient management system at the core of project manager must be established.

(3) Cost management responsibility should be developed and improved and duties should be implemented to individuals and posts at different levels.

(4) The means of all-round and dynamic cost control should be implemented.

(5) The approach of all-stages cost control should be adopted.

For a medium and large-sized project, Cost control is a comparatively complex systematic engineering. The purposes of cost control can be achieved only by way of comprehensive measures throughout the entire process at different stages. Experiences should be summarized constantly during the engineering endeavors with specific project scales and characteristics.

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The Application of ANSYS on the Teaching of Structural Mechanics

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Abstract. The introduction of ANSYS into the practice teaching of Structural Mechanics not only can broaden the students' scope of knowledge, but also, with its powerful functions in the modeling and analyzing as well as features of clear graph demonstration, it can arouse their interests and deepen their understandings of the concepts and theories, with the result of improving teaching quality. This paper describes specifically the changes which computer has brought for the teaching and the contents and effect of the computer course.

Keywords: Structural Mechanics, practice teaching, ANSYS, computer course.

1 Course Introduction and Difficulties in Teaching

Structural Mechanics is a professional and basic course of great importance in the curriculum of students majoring in Mechanics, Civil Engineering, Harbor and Waterway Engineering and so forth. Its prerequisite courses are Theoretical Mechanics and Mechanics of Materials, and its follow-up course is Elasticity Mechanics. Students can master the basic knowledge of engineering structure calculation through the study of the course; meanwhile, it will prepare them for further study of Metal Structure and Steel Structure.

However, students tend to feel bored and then lose the momentum to study, as a result of the numerous concepts and theories in the course, as well as the abstract content in which some chapters are slightly abstruse. On the other hand, total class hours are sharply cut based on the needs of professional construction, while the syllabus almost remains unchanged, which makes the teachers feel hard to balance between top students whose potentials are supposed to be further developed and some other students who fall behind and need more time and help to keep up with the progress. Moreover, due to the paucity of related majors and related students in proportion to the total, the experiment condition is lagging behind which results in the decrease and even cancellation of experiment courses.

2 Computer Drives the Development of Structural Mechanics

The traditional structural mechanics was drastically changed in form with the advent of the computer and the combination of multimedia technology and CASE

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(Computer Aided Software Engineering) propels the educational reform in Structural Mechanics into action.

2.1 Teaching with the Aid of Multimedia Technology

The utilization of multimedia such as PPT can display the pictures and videos of the engineering structure, equipments and construction sites in front of the students vividly. It offers the students an intuitive approach to the abstract and simplified concepts so as to help them better assimilate and digest the knowledge. Teachers save their time from writing on the blackboard endlessly, and students feel relieved to ask questions in class and review them after class. Consequently, the teaching quality can be enhanced effectively.

2.2 Teaching with the Help of CASE

In the late 1950s, computer was officially introduced into the field of SM (Structural Mechanics). At that time, the slide rule was the computing tool. After it was replaced by computers, structural matrix analysis had developed and it standardized the solutions to all kinds of large-scale structure analysis problems. The method laid the foundation for FEM (the Finite Element method) and was the most effective analysis method to solve various engineering structure problems.

In the early 1980s, many universities developed their own SM solvers through this method and Fortran Language etc. With most problems in Structural Static Mechanics being solved, however, when it comes to Dynamic Mechanics, it can only solve the problem of the dynamic performance of the elastic material structure [1].

Then, at the end of 80's, mathematical software such as MathCAD and Matlab sprung up like mushrooms. Computing speed was picked up and the whole matrix analysis procedure was in a clear and lucid style after the internal programming was simplified. Specifically, a toolbox named Simulink in Matlab can simulate the dynamic change process of different systems.

Since the nineties, the computer boom is bringing about the wide application and rapid development of FEM. A lot of Finite Element software emerged, for example, ANSYS, ABAQUS, PATRAN, SAP, Maple [2,3]. Through the discretization and combination of simulative continuum, the outcome was more accurate and the cloud maps and animations were even more vivid, which offers an effective approach to those complicated structural problems.

3 Computer Practice of Structural Mechanics Based on ANSYS

The concept of FEM was first put forward on structure of bar system in the field of Structural Mechanics. And what's learned on the syllabus of Structural Mechanics is the bar and beam element. The example of ANSYS, present below, will

introduce the application of Finite Element software in the teaching of Structural Mechanics.

3.1 Introduction of the Computer Course and ANSYS Software

ANSYS is a large-scale general finite element software which involves the analysis of structure, fluid, electric field, magnetic field and sound field. The interface between ANSYS and most CAD software make the share and exchange of data possible.

Computer course is a key element on the whole syllabus of Structural Mechanics. And 8-12 hours are set for it depending on different teaching plans. The goal is to assist students in understanding and digesting what they have learned from the textbooks, and at the same time, to help them get a general idea of the cutting-edge application software, and eventually, to improve the practice training.

3.2 Contents of the Computer Course

The computer course starts with 2 examples, i.e. I-1, I-2, which can be found in the chapter "Plane static frame analysis program" of Structural Mechanics Vol.1, Appendix [4]. When students have comprehended the function and algorithm of the FORTRAN 77 presented in the textbook, they are asked to use ANSYS as the alternative to solve the problem.

In static analysis of the structures (ex. beam, truss, mix, arch), students can learn the characteristic and usage of beam element like beam3 and beam189, bar unit like link1 and link8, the method of direct modeling, meshing and coupling, the conversion of coordinate system, the exertion of constraint and load, setting ETABLE, showing deformation figure, drawing the diagram of internal force, listing model information, and the modeling skills of different element types, materials and real constants etc. For each problem, GUI operations and APDL command flow are both given.

Through solving the influence line of multispan static beam, students learn about the problem of complex command flow, involving the data transfer, cycle judge statement, the array definition, internal information access, curve label setting, load step solving, output control etc.

Elastic stability analysis of structure belongs to the first kind of stability problems (branch point instability), the purpose of which is the solution of the critical load value, and the corresponding analysis type in ANSYS is the characteristic value analysis (buckling analysis). Students can be familiar with the extraction method of the characteristic value, the order definition, and how to check the buckling modal information, buckling load coefficient and buckling shape.

The whole process response of structure with load will be obtained in the elastic-plastic analysis of the Ansys, likewise, the plastic limit load and the plastic hinge position can be gained. Students can know how to define elastic-plastic material, draw load-displacement curve using time history post-processor, and display the moment diagram and failure mode when reaching the plastic limit [5].

3.3 Effect on the Computer Course

In computer practice, students with high enthusiasm are good at questioning and catching the wrongs of the calculation process, not only trained the ability of quantitative analysis, but also cultivated the habit of qualitative thinking [6]. Homework includes the problems about solving moment diagram in displacement method chapter of the textbook and strength checking of lifting tower in real project. The students' test scores reflect that the effect of students' acceptance is fine and they can mainly master the basic analysis method of ANSYS in class. The students with spare capacity are able to continue borrowing the relevant reference book for further study after class under the guidance of teacher.

4 The Conclusion

This paper introduces the great changes of structural mechanics teaching brought by the advent of the computer, especially the CAE software enriches teaching practice, opens up another channel between theory study and engineering practice for students of Mechanics, Civil Engineering, Harbor and Waterway Engineering and other engineering specialties and lays the foundation to make them become social necessary talents. The ANSYS software as an example, our experience of structure mechanics computer practice and the study effect feedback of students' are introduced. In short, CAE software provides an effective assistance method for traditional teaching, is one of the effective complement for traditional teaching of the mechanics, and make the theory and practice a better combination.

Acknowledgment. This paper is based on work being performed under the research subject endowed by Shanghai Higher Education Institute (2011). Moreover, this work is being partly supported by the core course construction of structural mechanics funded by Shanghai Municipal Education Commission (2009). Therefore, both supports and funds are gratefully acknowledged here.

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Tourism Facilities Management: A New Course Design and Optimization Based on Survey

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Abstract. Tourism and facilities management are both considered the sunrise industries in China. The application of professional facilities management and services in tourism industry is a new trend and has a collaborative effect. Thus a new course, Tourism facilities management, is designed to meet the future needs. Through three years' teaching practices and survey, we identified the current problems on the course teaching, and further analyzed the results and effects. Finally, suggestions are given: increase the awareness of facilities management in tourism professionals; enrich the teaching content of tourism facilities management; conduct Service Learning and connect theories to hands-on practices; improve the textbook and teaching materials to enhance professional training.

Keywords: Tourism Property, Facilities Management, Property Services, Service Learning, Teaching Content, Teaching Practice.

1 Introduction

Property facilities management was originated in the United Kingdom in 1860s, introduced to China in early 1980s and has become an important industry in China lately. Traditionally, it mainly focuses on residential, commercial and industrial properties. But it has been greatly expanded to a much wider range in recent years, such as stadium, exhibition center, television tower, port, cruise, and airport and so on. Big international events like Beijing 2008 Olympic Game and Shanghai 2010 World Expo, highlighted the importance of smooth facilities and property operations and services. Ms. Jiajin Xie, the vice minister of China Construction Ministry and the president of China Property Management Association says that facilities management will enter a new stage and play a more important role in national economy within the next decade (Yang, 2010).

However the present management and service level is still very low. José A Ferrero, a consultant from the World Tourism Organization consultant, said after his visits to a hundred hotels in China around 1987 that "The lack of repair and

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maintenance is a serious problem which will largely shorten the hotels' lifecycle in China". Surveys also show that hotels in China need to be renovated in every 4 years, whereas it is only 8 to 10 years in western society, which is a huge difference (Shen, 2000).

The bottleneck is the lack of professionals who understand both tourism services and facilities management. Tourism managers are mostly trained to provide hospitality services, but lack of knowledge on "hardware" in terms of the building and its environment; whereas a facilities manager or engineering staff may not understand tourism industry. Universities and colleges are responsible for the incubation of professionals. The key is to design a good curriculum in the first place. The School of Hotel Administration in Cornell University who set Hospitality Facilities Operations as core courses and approaches were been made in many institutions (Cornell University, 2011).

2 Course Design on Tourism Facilities Management

Changsha University is one of the few universities that offer four-year property and facilities management program in China. With this background of facilities management together with its tourism management programs, a new featured course, Tourism Facilities Management, was created in 2006 and details are listed as follow:

2.1 Course Name and Nature

Tourism Facilities Management is an elective course.

2.2 Teaching Hours

The course has 32 hours and is taught in the fourth academic year.

2.3 Teaching Purpose

This course emphasizes on study and research of real world practices and new trends to tourism facilities management on the basis of fundamental theories of Tourism Facilities Management. It adapts the basics of facilities management to modern tourism management.

2.4 Teaching Contents

It includes the basics of facilities management, commercial facilities management, leasing management of tourism property, repair and maintenance, of housing, environmental management, property security management, club management and operations of different types of tourism property.

2.5 Teaching Methods

Teaching methods include lectures, group discussions, case studies, on-site visits, surveys and lab class.

2.6 Textbook Selection

There are no textbooks for tourism facilities management in China right now, only two textbooks on commercial facilities management. A new textbook is needed.

3 Teaching Practices and Survey on Students

Lectures on tourism facilities management course have been given to senior students in tourism major since 2008. The teachers actively participate in course design and revision with the help of faculty and students. Surveys had been done from 2008 to 2010 with 359 students' feedbacks.

3.1 Positive Feedbacks

Most students found Tourism Facilities Management Course very useful. Before the course started, most of them were very unfamiliar with it and thought it might be "unnecessary", "not closely related to their major", or "not interested". However, after study, 93% of the students gave positive feedbacks saying the creation of this course is "necessary", many students consider themselves "more rewarding", "opened up their horizon", and "understand better about the other aspects in tourism management". Only 2% of the students felt no need to take this course, and another 5% gave "it does not matter" comment. Details are shown in Table 1.

First, the teaching contents were designed closely related to tourism and hotel practices in depth. The textbook was about commercial facilities management with referring to hotel property. We narrowed down commercial facilities management to tourism property, and extended it from hotel to various kinds of tourism property, such as scenic spots, business hotels, resorts, convention properties, senior dwellings and so on. Besides the management of the "completed" properties, we also set foot on the early involvement of a property, including investment, design, sales, leasing and handover.

Second, simulation teaching was done with the full use of multimedia, such as showing videos of fire alarm system, fire fighting equipments, fire shutters, and water curtain and so on to leave the students a deep impression. Finally, on-site visiting was best welcomed. We did an on-site visit to hotel and a research on leasing and operation in tourism sites. Students met with property professionals, did surveys, group discussions and gave presentations, which was said to be the most impressive experience by them.

Table 1. Positive Feedbacks from Students

No.	Positive Feedbacks	Percentage
1	On-site visit to a facilities management company	34%
2	Survey on leasing management of commercial property in starred hotels	16%
3	Content are new and creative, not limit to the textbook	14%
4	Good communication between teacher and students	12%
5	Good arrangement of multi-media materials	12%
6	Frequent and innovative use of videos in teaching	7%
7	Others	5%

3.2 Aspects Need to Improve

Survey also shows weaknesses of the course from the students' perspective. Students gave a lot of comments and suggestions. First, new textbook is needed. The current textbook is not closely related to tourism property and dull to students. Second, teaching contents. Students felt there were a lot of information, new terms and theories, and want more case studies easy to understand and closely related. Third, teaching hours. There were not enough hours for further study. More hours could be added and better put this course in the second or the third year before intern. Fourth, teaching methods. Students generally want the class to have more interaction, more hands-on practice, group discussion and surveys, to allow more students analyze problems and express their own views. Please see Table 2.

Table 2. Weaknesses and Suggestions from Students

No.	Weaknesses	Percentage
1	The textbook is dull, not closely related to our major	26%
2	More case study on tourism properties	20%
3	There is not enough hours to study in depth	15%
4	Contents are too theoretical and hard to understand	14%
5	More off campus visit and survey	12%
6	Teaching should be more related to tourism industry	8%
7	Others	5%

4 Suggestions to Improve This New Course

4.1 Improve Tourism Students' Understanding and Awareness

Tourism facilities management is rather a new concept and tourism majors are not aware of the importance. More information should be introduced: Facilities Management is a sunrise industry and Tourism Property professionals are needed in tourism sectors especially in large starred hotels. Students with professional knowledge on tourism facilities management may have strength on hotel management.

4.2 Research on Teaching Contents to Enrich the Course Teaching

First, narrow down commercial facilities management to tourism property, and omit the content of non-tourism property. Second, expand the narrow sense of tourism facilities management to the broad sense, from completed buildings to the "whole process" of investment and operation, covering investment, feasibility studies, design, construction, supervision, acceptance, sales and leasing, handover and maintenance. Third, fully integrate facilities management to tourism industry, study on special areas such as the land ownership and development right for tourist attractions, and its impact on tourism projects. Fourth, emphasis on both hardware (engineering and maintenance) and software (services), such as the handover of hotel property, cultural differences, cultural conflict, globalization and localization and so on.

4.3 Conduct Service Learning and Hands-On Practices

It is not the teacher's lectures but the hands-on practices that gave students the deepest impression according to our survey. In some foreign universities, classroom study and practice are combined and has reached the ratio of 1:1.

Service Learning is now regarded as one of the key effective strategies to improve education in the U.S. since the two legislation related in 1990. Teacher can guide students to more field studies in the early period of the semester (say the second week), make a visit to a tourism property. Then do practice and research in mid-term. Group students and choose a subject for further research on tourism management. For example, a survey on leasing management of shopping properties in five-star hotels in a city. Students need to construct their research, investigate, identify problems, make conclusion and suggestions, write reports and give presentations.

Build and make full use of professional labs and multimedia classrooms, such as electricity systems, building intelligence system, fire control system and so on. Service learning should be introduced. Teachers add service hours to traditional teaching which allows students understand better about the society's needs and serve the community.

4.4 Publish Textbook Closely Related to Tourism Facilities Management

Due to the lack of tourism facilities management textbooks, currently we have no choice but to choose textbook on commercial facilities management. However, only hotel property is introduced as one chapter. Students complain that there is not enough information in detail and in depth with a close relationship with facilities management. Professional teaching materials are much needed.

Teaching materials on tourism facilities management should combine the basics of facilities management with tourism management. Textbook should include the real estate investment, evaluation, budget, architectural design, handover, acceptance, promotion and sales, publicity, maintenance, renovation, as well as the comparison of different types of tourism facilities management, introduce latest and most advanced tourism facilities management experiences.

4.5 Make a Good Plan for Course Schedule and Teaching Hours

We find that it is not good to teach the course in the fourth year because of its conflict with the internship and graduation thesis. It will be very difficult for students to concentrate. This course also needs more teaching hours to cover. Therefore, we recommend that the tourism facilities management course can be taught in the fifth semester with 48 hours, in which 16 hours are assigned to practice so that students will have enough time to visit different facilities management companies, hotel properties, and convention properties and so on and get familiar with all aspects of facilities management.

5 Conclusions

Tourism Facilities Management is a relatively new concept. It is not only an application of facilities management in the tourism industry, but also an important segment in facilities management market. It is so new that there are a lot of issues needs to be discussed and teaching can be greatly improved. Through three years of teaching, surveys were conducted. Most students gave positive feedbacks and showed their strengths in employment with related knowledge. Still, there are a lot needs to be done in terms of teaching, research and practices in this area.

Suggestions are given as: improve tourism students' understanding and awareness; research on teaching contents to enrich the course teaching; teaching content should be practical and closely related to tourism industry; narrow down commercial facilities management to tourism property, and omit the content of non-tourism property, Conduct service learning and hands-on practices; publish textbook closely related to tourism facilities management, and make a good plan for course schedule and teaching hours. We strongly believe that under the social and economic growth, tourism professionals with knowledge on both tourism and facilities management will no doubt have greater competitiveness in the future.

Acknowledgments. This work is supported by Grants from China National Social Science Foundation Committee (Project 10BJY043: Study on Local Government's Promotion to Affordable Housing), Hunan Social Science Federation (Project 1011240B: Study on Modular Industrial Organization and the upgrading of Hunan's manufacturing industry) and Hunan Educational Bureau (Project 09C136: Research on Tourism Facilities management Market Incubation).

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A Brief Study on the Application of Modern Teaching Devices in Higher Mathematics Teaching

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Abstract. The paper combining the teaching practice analyzed the role of modern teaching devices in higher mathematics teaching from multiple perspectives, and pointed out that the use of modern teaching devices in higher mathematics teaching must be noted a number of issues, Finally concluded that if we properly applied the modern teaching devices to the higher mathematics teaching, it can not only promote the classroom teaching efficiency, but also can stimulate the students' enthusiasm.

Keywords: Modernization, Teaching Devices, Higher Mathematics, Application.

1 Introduction

Higher mathematics occupies more teaching period than other subjects in science and technology universities, and it is a basic course that relates to almost all students. This course's teaching effect can directly indicate the quality of the college's talent cultivation. The ministry of education had published a document *Some Suggestions on Reinforcing the Teaching Task of Undergraduates and Promoting Teaching Quality,* in this document it pointed out that: "In teaching activities, the application of modern information technology is an important measure to promote the undergraduate teaching quality. The talent cultivation in universities, teaching methods and approach must adapt to the needs of information technology development." Hence, as a college mathematics teacher, we should try to reform the traditional teaching form and organize the higher mathematics teaching by actively using modern teaching devices in order to promote the teaching quality of this course.

2 The Functions of Modern Teaching Devices in Teaching Higher Mathematics

With the spread of using computers, multi-media teaching and online teaching quickly prevailed among universities. As an advanced teaching method, computer

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assistant teaching has the advantage of intuitiveness, flexibility, immediacy and stereotype comparing with traditional teaching method. It has become more and more popular among university teachers and students. Modern teaching methods is beneficial for students' learning higher mathematics which other methods are not comparable. It includes the following aspects:

Activating Students' Enthusiasm of Learning Higher Mathematics. The most obvious feature of higher mathematics is the abstract knowledge, so how to make the abstract knowledge to become more concrete is the questions which should be frequently considered by the teacher during teaching process. And modern teaching devices has solved this problem wonderfully. By utilizing the multi-media technology from the computers and through the comprehensive process of the text, sound, picture and video, we can demonstrate the picturesque, vivid and sound fantastic colorful world to the students. It has created a soothing teaching environment and vivid expressing tools for the classroom teaching, and basically transformed the traditional tedious teaching mode. It makes the students to study under a happy mood and activates the students' interest in learning higher mathematics.

Promoting the Students' Ability of Thinking. Higher mathematics is a discipline which involves conscientiousness, logicality and accuracy, one of the teaching aim is to cultivate the students' logical and abstract thinking ability. Multi-media education can make students thinking actively under the teaching activities or environment set by the teachers and then positively participating in the learning of mathematics knowledge, acquisition of the learning methods, revelation of the thinking process in order to promote the study efficiency. In the teaching process, the teacher can properly use the animation or voice to adjust the learning atmosphere to promote the students' EQ and IQ through the students' appreciation to them. This is more beneficial to the students' cultivation and development of comprehensive ability.

Making the Static Mathematics Knowledge Dynamic. In higher mathematics, many concepts' definition, calculation of regulation and derivation of conclusion's emphasis always rely on its explanation of the process. The multi-media courseware of higher mathematics can help the students to form a clear dynamic image, it is helpful for students' mathematic thinking development. For example when teaching the concept of the limit, the teacher can resort to the animation image to express the infinite close concept which is helpful for students to understand the meaning of convergence. Another example, when explaining the geometrical meaning of the derivative, the teacher can adopt the animation to display the tangent is the limit position of the secant to deepen the students' understanding of concept of derivative and its geometrical meaning.

Making the Abstract Mathematics Knowledge More Concrete. With the technology supplied by the multi-media, the teacher can express the abstract mathematics knowledge in a materialized way, making the abstract knowledge more concrete and easier for the students to acquire. For instance when teaching applying definite integration to calculate the dimension of the planar graph, the teacher

can use the animation to show interval division by infinity and the process of approximation substitution, making the students have a direct knowledge of definite integration infinitesimal method.

Making the Teachers Introduce the Popular Science of Mathematics More Convenient. Multi-media's huge information storage provides the teachers a convenient way to introduce the students the history of mathematics, mathematicians, mathematic thinking method and some famous mathematic problems. Realizing the aim of penetrating humanistic spirit and mathematical thinking into higher mathematics teaching. For instance before teaching calculus, the teacher can introduce Newton, Leibnitz and the founding process of calculus, in this way, the students can have a brief knowledge of calculus and the teachers can cultivate them having a sacrifice spirit for science and create a correct outlook of life. In this way we can realize the aim of quality education.

Making It Easier for Students to Study After Class. In recent years, many universities has introduced a lot of online teaching platforms or independently developed higher mathematics online ask and answer systems. They are a combination of mathematics' systematicness, pervasiveness and the demonstration of main concept definition, vividly displayed the higher mathematics' core of knowledge and logical system and provided an ideal platform for the students' study and the teachers' tutorship. Resorting to these platforms, the teachers can provide the students abundant teaching resources such as course video, electronic teaching plan, teaching outline and assignments. Putting the teachers' teaching plan online, the students can conveniently preview and revise their courses which can lessen their burden of note taking and make them concentrate on the course listening. Online tutoring system is as a handy teacher, answering any questions the students may come across and bridge the gap between students and teachers.

3 Some Problems When Using Modern Teaching Devices

In the above we have talked about the functions of modern teaching devices in teaching higher mathematics, it has an advantage that traditional teaching methods can not compare with. It is an important way of promoting higher mathematics reform, but there are some questions which should be considered and perfected.

The Traditional Teaching Method can not be Ignored. The classroom teaching effect depends on the mutual relations of the element of teachers, students, teaching content and teaching devices. The teachers should choose and devise the various teaching methods according to the teaching contents and aims and adopt modern teaching methods properly. We must avoid only emphasize on modern teaching devices but ignore the traditional approach. In fact, every teaching method has its features and disadvantages. When using modern teaching methods if the teachers only drag the mouse and hit the keyboard, it equals to transforming the inefficient artificial instill to the accelerated machine instill. In higher mathematics teaching, any improper exaggerated function of the modern teaching

method can lead the reform of higher mathematics teaching to the negative aspect. This not only requires the emphasis on modern teaching devices in teaching, but also the emphasis on traditional teaching methods, the two methods should be combined.

The Teacher's Dominant Role in Class Room Teaching Should not be Ignored. Although the modern teaching devices can help promoting the students' attention and stimulating the students' interest to a large extent, it can also conceal the dominant role of the teachers easily. Any of the teaching devices in classroom teaching only plays an assistant role, the teachers should be the leader and organizer of the classroom teaching. So only if the modern teaching methods are combined with the leading role of the teachers can we lead the students thinking actively to a large degree and achieve the anticipated higher mathematics teaching aims.

Tackle the Relations Between Imaginably Thinking and Abstract Thinking. The most important feature of modern teaching method is making the abstract mathematics knowledge become concrete and vivid. It does a great help for the students to understand the mathematics concept and theory deeply, but it can not replace the abstract thinking. Cultivating the students' abstract thinking is the main task of higher mathematics course. If we can not tackle the relations between the imaginably thinking and abstract thinking when using modern teaching method, undoubtedly it is not beneficial for cultivating students' abstract thinking. When visualizing abstract thinking through using modern teaching devices, the teachers should lead students to reorganize the imaginably thinking and restore it into abstract thinking, making them complementing each other's advantage.

Making Courseware Elaborate. Higher mathematics is an abstract and an extensively used basic course, the courseware should try to display the abstract mathematics theory and principle with intuitive images and beautiful animations. It is helpful for students to understand its connotations and key points. Moreover, the courseware should reflect the teaching thread sufficiently and make the courseware display, explanation and students' thinking synchronously. In this way it can give full play to the interaction between teaching and learning, and can remain and carry on the merits of the traditional teaching.

Pay Attention to Adjust Teaching Schedule. Compared with traditional teaching devices, modern teaching devices make the classroom teaching progress and time faster because of saving the blackboard-writing time. In classroom teaching the teachers should avoid only concentrating on manipulating and displaying courseware, furthermore, the teacher should consider the time difference between students' response speed of the brain and the transmission speed of the media. In the classroom we should leave the students some time to think and pay attention to the feedback of the teaching information from the students. Adjusting the teaching schedule according to the feedback to avoid the negative effects that the students can not catch up with the teachers' teaching schedule.

Student-centered should be in the Process of Teaching. In the process of teachings, no matter what kind of teaching methods are using, it is the basic point of education that students are the principal, and teachers are the lead. With multimedia courseware for teaching higher mathematic, if teachers is careless, although one class has everything, students are passive most of the time and decrease the opportunity to actively participate in teaching activity, so the actual harvest is less. Teachers should clearly understand: computers and courseware is only a tool and the carrier, multimedia is only a supplementary means, teachers should always improve the quality and effectiveness of teaching as a starting point. Students are the main, all teaching activities should be centered around on student and as far as possible to provide opportunities to think, say, train through designing teaching process and flexible operation. In the teaching process, teachers should encourage students to ask questions, give answers to the collective or individual, guide students to think, talk, debate, innovate, and encourage students to express their opinions and questions, and then the media play the best of the teaching function under the teacher's control.

The First Traditional Teaching, then Multimedia Teaching. Higher mathematics generally is set up in the first semester, has a long teaching hours and 4 to 6 hours a week. Higher mathematics, which is a high degree of general subjects, and contents are enough, broad and deep, is very different from secondary mathematics. The new teachers should use traditional teaching method with chalk in the first three times. Only when teachers mastered the traditional teaching method, used skillfully, are fully familiar with higher mathematics knowledge, and combined with multi-media teaching, then better grasp the combination of varieties of teaching methods and received good teaching.

Creating a Good Condition for Implementing Modern Teaching Devices. In order to exert the proper function of modern teaching devices in higher mathematics teaching, the universities should invest largely in the hardware and guarantee the number and quality of multimedia classrooms to make sure to let the students to see and hear clearly in the classroom. Because the punctuation of concepts, the analysis of thinking thread and confirming the process of calculation in higher mathematics need to be displayed one step by one step, this requires the multimedia classroom should be equipped with electronic pens which can help teachers to write easily on the screen at any time. In addition, the universities should introduce the online teaching platforms and keep it going to provide the students the electronic courseware, assignments and exercises and after class tutoring.

4 Conclusion

After years of practical teaching, we realized that if we properly applied the modern teaching devices to the higher mathematics teaching, it can not only promote the classroom teaching efficiency, but also can stimulate the students' enthusiasm.

With the increasing number and the improved quality of multimedia classrooms in universities and the development of computer science and network, we can

expect that the application of modern teaching devices in teaching higher mathematics will be more popularized. Only if the higher mathematics teachers actively participate and practice the modern teaching device's reform, can we promote the higher mathematics teaching quality.

Acknowledgments. The paper is supported by the foundation of "Educational Research and Reform Project of Shan Dong Jiao Tong University(JG2011007)".

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The Research of the Relationship between University Mathematics Learning and Quality Education and Enforce of Human's Ability

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Abstract. This paper analyzed the position and role of the university mathematics in higher education, described the research of the relationship between university mathematics learning and quality education and enforce of human's ability, concluded that the university mathematics fits the age's development and the enforce of human's ability, it is not only a platform for high schools make their dreams come true and a carrier fostering students' application ability and innovative ability, but also it can promote the development of the specialized course and the improving of student's professional quality.

Keywords: University Mathematics, Quality Education, Enforce of Human's Ability, Relationship.

1 The Learning of University Mathematics Fits the Age's Development and the Enforce of Human's Ability

With the development of science and technology, the society has stepped into the Knowledge Economy Era. In the time the economic activities mainly depend on the burn, development, application and the Innovation of the knowledge will be a great challenge to cultural and idea of human, as well as producing great influence to the development of subjects and university's development. With the burn and development of computer, the amount of all subjects became more and more, this causes the math max with other subjects. In this situation, math shows the unity not only on the sub-sciences, but also on the aspects of the continuous and discrete, linear and nonlinear, quantitative and qualitative, deterministic and stochastic. The development of the unity makes math puts forward more requirement from Sciences and Technology to economic management even Human Sciences. Also makes the relation between math and human more closes. Just as if the math is everywhere and is been used everywhere. Recently, people even know that math not only a tool but also thinking method-------"math thinking method". Not only knowledge but also quality-------"math quality". Math has played an important role in natural science, project technology, economic management, human and society and so on. It can't be lock of and a basic tool in our daily life [1]. Also it has

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showed its powerful life. So in order to fit the development of society and the requirement of talent, many university not only Sciences Technology and economic management department but also Human Sciences department learn math.

2 The Math Course in University Is a Platform for High Schools Make Their Dreams Come True

The math education in high school is basic education for both science and cultural, also an important fact in quality education. Today math is play an important part in many subjects, it is used in many subjects directly, needn't be used indirectly through other subjects. Though Friedrich Von Engels has point out "math is a subject that is used for researching the relation of the number and the space shapes", but now the development of math has beyond the "number" and "shape". The math in high school has a high require in people's logical thinking and exactly reasoning which often are considered as "gymnastics of thinking". The math in high school is also considered as the important tools which can be used to master the nature, society and ourselves, also the people's math level is considered an important fact of a people's quality [2].

The science and technology's continues developing make the new subjects appear continually, any subject can't teach the students all or most of the knowledge in their field. After graduating they also need to continue studying. One reason is that some graduators don't do the same work what they have learned in high school; another reason is that the society need the graduators have higher level, the graduators can choose the jobs more freely. In order to improve the students' adaption, we must translate the "school education" into the "continue education or all life education" in order to make the graduators are fit for the need of the job and their own interesting. From the "professional education" to "quality education" [3]. Though many students have no chance to the mathematic knowledge that they have learned in the school, but no matter what they do the spirit and the thinking method form math learning influence them greatly. They are great benefit to them. The high school education must insist the unity of "humanistic spirit, scientific literacy and Creative ability". Trying their best to make the students have the ability of " basic, ability quality and their own characteristics". This requires the high school must change their traditional education ideas, they must put the math cultural, math level, math thinking and the ability of using it in the important position, which can make the students have the ability of new knowledge and new technology.

The educationist Thomas Henry Huxley thinking that:" the importance of the science is not teaching people how to use the science and technology, but teaching people how to use the scientific ideas and methods" [4], the words is especially for the engineering university. The aim of high school is how to make people master the usage skills of the knowledge, and how to keep the life of the knowledge and how to improve their intelligence when their knowledge grows. Through the high school's math learning not only rich the students' math knowledge and improve the students' math level, but also improve their professional courses' learning, so

this can give them a basic for their "continue education" and "life education". So I think the high schools' math education is a platform for the quality education.

3 The High Schools' Mathematical Course Is a Carrier for Fostering Students' Application Ability and Innovative Ability

Nowadays the science and technology has developed great, math has been on the stage from backstage and play a role in construction, economic and management and so on. Even we can say that the advanced construction, economic and management skills are mathematical skills. Math has the basis of the bottom layer stones of material civilization and spiritual civilization.

Though math is a subject only research the shapes and relations without manners. But the objects of study content all the shapes and relations. With the population and development of computer, they expend the relation between math and society; expand the field of using math knowledge to solve the practical problems. The university math's learning as a basis course in project technology, economy and management has some special own characters. It can also connect project's examples, economic background with management skills in knowledge's teaching and ability's training. As we know, math science aims to frost students' feeling ability, logic thinking ability, creative ability and strict working spirit. But the usage of math aims to practice students' ability of using knowledge freely, which can make students use the thinking and methods of math in their own field and master the mathematic thinking methods. So the aim of university mathematic education not only makes students master basis theory when they learn their professional knowledge, but also frosts their mathematic thinking methods and the ability of logic thinking and imagine thinking. So they can be good at analyzing and solving all kinds of complicated practical problems. In the teaching progress, if we can manage the teaching in math's practical application, we can frost students exact thinking methods. We can also improve the ability of solving and analyzing problems. With students ability's improving of solving and analyzing problems, students' ability of practice, creative thinking and creation can be frosted well. What we said above, we can say the university mathematics education is the best carrier of frosting students' practical ability and innovating ability.

4 The High Schools' Mathematical Course Is Beneficial to the Development of the Specialized Course and the Improving of Students' Professional Quality

According to its functions and significance, university mathematics can be classified to three types including pure mathematics, applied mathematics and cultural mathematics which have different definition and use for different people. Some people who devote himself to the mathematics theory pay attention to theoretical derivation, induction and deduction and the innovation of the mathematical idea

and method. Some engineers and managements pay attention to the application and computation relying on applied mathematics. Some one who is engaged in the humanities pay attention to the correlation between mathematics and other subjects, the use of mathematics in human civilizations and the application of mathematics in students' knowledge structure.

For the engineering or management major which is used to train advanced applied talents, college mathematics plays an increasingly important role in the development of the specialized course and some aspects such as students' study of the specialized course, the improvement of professional standards and the form of the professional quality. Everyone has been generally recognized this, because on the one hand mathematics curriculum for students in professional courses of study to provide the necessary mathematical theory and mathematical methods, on the other hand, professional courses for the mathematical theory and applications of mathematical methods the best platform for an experimental practice.

In the mathematics teaching, we should deal with accurately the above correlation between mathematics and the specialized course. To help students practice their mathematical knowledge and method, we should not only strengthen the teaching of mathematical application but also lay stress on the training of the mathematics application ability in the teaching of the subsequent specialized course. All of these measures can make students master the mathematical knowledge and its application and play good facilitation to the further study of the specialized course. Therefore, college mathematics is well correlated with the course of the engineering or management major and facilitated each other. The neglect of any one of these two aspects is unfavorable to the training of students' practical ability, creative thinking and innovative ability and the development of the specialized course.

For the human and culture major which is to train advanced talents of social sciences, the main purpose of the teaching of college mathematics is to train students' mathematical thinking, develop students' intellect and improve students' wisdom. In recent years, the profound relation between mathematics and subjects of the human and culture major has been detected gradually. For example, the use of mathematical method has ushered a new field for history research which was not emphasized in the past time and greatly influenced the collection, arrangement and analysis of the documental history. And its applications have solved the hard problem which is considered as insolvable ones with traditional historical approaches. Modem mathematics is also an indispensable tool for linguistics research. For example, the probability way can be used to comparative study of the grammar, the vocabulary and the history of a language. Machine translation is a combination of mathematics, linguistics and computer. Mathematical linguistics even raised the application of mathematics to a new level, whose three main branches including statistical linguistics, algebraic linguistics and linguistically algorithm are all applied sciences of modem mathematics. All of the above indicate that mathematics has an enormous promotion for the development of the human and culture major. The teaching of mathematics not only promotes students of the human and culture major to form the mathematics quality but also provides more chances and immense space of students' further development.

Acknowledgments. The paper is supported by the foundation of "Educational Research and Reform Project of Shan Dong Jiao Tong University (JG2011007) ".

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Application of Delphi Software in the Teaching of Basics of Mechanical Design

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Abstract. The course of "Basics of Mechanical Design" is a basic course of the major of non-mechanical and nearly-mechanical. And the course has an important position in the whole professional teaching. In order to promote teaching effect and enhance the teaching quality, the software of Delphi is introduced to the course in the following parts: the movement analysis and map design of link mechanism, the outline design of cam and size calculation of the gear. Through the software introducing these parts will help students strengthen the understanding and memory of these knowledge points. The study in this article is a kind of teaching thinking to the course of Basics of Mechanical Design, which has important significance and value of innovation.

Keywords: Basics of Mechanical Design, Course teaching, Delphi software.

1 Introduction

The course of "Basics of Mechanical Design" which is generally arranged in the second year of college is a required course of the following major: non-Mechanical Engineering(such as:electrical engineering and automation, metal forming and biological engineering, etc.)and nearly Mechanical Engineering(such as: industrial design, industrial engineering, etc.). To enable students to understand the content of the curriculum well and enhance the memory of each chapter, we introduce the software of Delphi in the teaching process, combine it with the corresponding chapters and use a visual interface to express the abstract contents and the formulas by programming to help students master these difficult contents[1].

2 The Application of Delphi in the Plane Linkage Mechanism

2.1 The Motion Analysis of Linkage Mechanism

Plane linkage mechanism is a kind of plane mechanism which is connected by a number of rigid components with a low pair (revolute or prismatic pair) and it is also

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known as plane low-pair mechanism. In the following, we will introduce the application of the software of Delphi by using the most basic four-bar linkage as an example.

Fig.1 is a hinged four-bar mechanism. The velocity and acceleration of link 1 are already known. And we can calculate the angular displacement, velocity and acceleration by using analytical method. The specific formulas are listed as follows[2-3]:

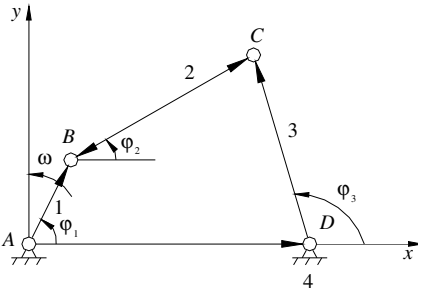

Fig. 1. A hinged four-bar mechanism

$$\omega_2 = -\omega_1 \frac{l_1 \sin(\varphi_1 - \varphi_3)}{l_2 \sin(\varphi_2 - \varphi_3)} \qquad \omega_3 = \omega_1 \cdot \frac{l_1 \sin(\varphi_1 - \varphi_2)}{l_3 \sin(\varphi_3 - \varphi_2)} \tag{1}$$

$$a_2 = \frac{l_3 \omega_3^{\,2} - l_1 \omega_1^{\,2} \cos(\varphi_1 - \varphi_3) - l_2 \omega_2^{\,2} \cos(\varphi_2 - \varphi_3)}{l_2 \sin(\varphi_2 - \varphi_3)} \tag{2}$$

$$a_3 = \frac{l_2 \omega_2^{\,2} + l_1 \omega_1^{\,2} \cos(\varphi_1 - \varphi_2) - l_3 \omega_3^{\,2} \cos(\varphi_3 - \varphi_2)}{l_3 \sin(\varphi_3 - \varphi_2)} \tag{3}$$

The above formulas are complex, difficult to solve and not convenient in practical application. So we can get the speed and acceleration calculation results of different four-bar mechanism easily by using Delphi to make the following interface[4].

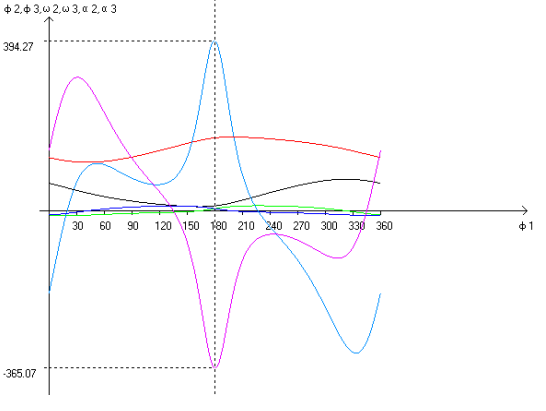

Fig. 2. The solution interface of Delphi in the four-bar mechanism kinematic analysis

2.2 The Calculation of Link Mechanism's Trajectory

When using link mechanism, we need to identify a known point's trajectory. But its formula is complex and inconvenient to remember and use. So we can use Delphi to make common computer program and complete the calculation of any point's trajectory. Fig.3 shows the program interface.

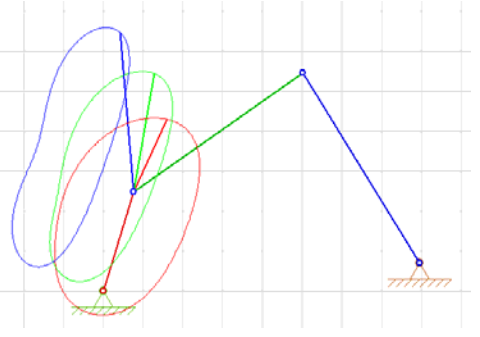

Fig. 3. Trajectory calculation by Delphi

3 The Application of Delphi in the Gear Mechanism

3.1 Size Calculation

When designing gear, we must calculate the geometry of gear. Since this part contains many formulas, it will take much time to calculate the geometry of different gears. Thus we introduce the visual computer programming software Delphi. We only need to input the basic parameters of gear (such as number of teeth *Z*, modulus m, the pressure angle α, addendum coefficient *ha* *, headspace coefficient

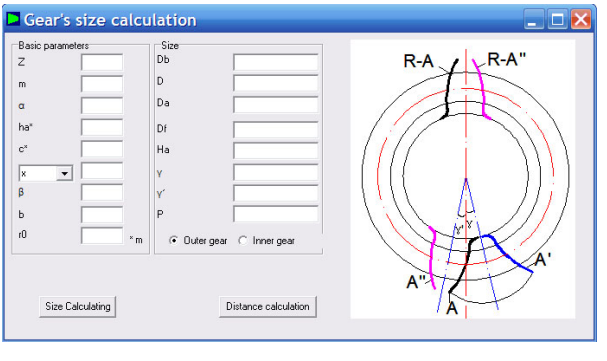

Fig. 4. The application of Delphi in the geometry calculation of gear

c *, the helix angle β, change coefficient x, etc.) and then get all the geometry of gear. Because there are many equations in this part, it could have been boring. But students will have a greater interest in learning this part by introducing and making geometry calculation program of gear[5]. Fig.4 shows the geometry calculation program of gear by using Delphi.

3.2 Expansion Processing Simulation

The methods of gear processing include profiling method and expansion method which is most commonly used. In order to enable students to master the principle of expansion processing and understand the phenomenon of root cutting, we can make gear process simulation program by Delphi. The software can dynamically displays the gear processing and the occurrence of root cutting process so that students can observe and grasp the gear processing and the phenomenon of root-cutting easily. Fig.5 shows the program interface map[6-7].

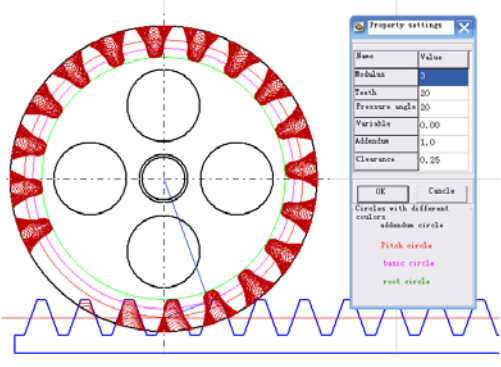

Fig. 5. The gear expansion processing simulation by Delphi

4 Conclusions

With the popularization of computer applications, students not only need to require a good grasp of professional knowledge, but also have to be familiar with the operation and use of computer software. In the basic teaching process of mechanical design, we intersperse with the introduction of the software of Delphi and combine the software operation with teaching, so that students can not only understand and master the course knowledge better, but also the use of the software have a knowledge of enlightenment role for their future use and laying a foundation to learn this software. In a word, the measure that introduces computer software into the basic teaching of mechanical design is an exploration of the teaching innovation and reform. Viewing from the educational achievements and students' reflect, we know that this teaching method is better.

Acknowledgments. Here, we will thanks a lot to Education Department of Anhui Province and Hefei University of Technology, because the progress of the research is constantly supported by the Excellent Younger's Program Project of Anhui province (No. 2011SQRL010), the Science and Technology Program Project of Hefei University of Technology(No. 2010HGXJ0137), Doctor's special fund of Hefei University of Technology(No. 2011HGBZ0928) and 2009's Anhui provincial excellent course "Basics of Mechanical Design"(NO.9).

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Training Mode of Media Management Talents – A Comparative Study between Mainland China and Taiwan

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Abstract. In China, with the development and convergence of traditional media and continuous emergence of new media, the demand for professional media managers is becoming more and more urgent. However, since media management is an interdisciplinary profession, needing the combination of multi-subject knowledge, skills and practical experience, it's never easy to train an effective media manager. It might be easy to train common journalists, but it is quite difficult to train media talents of high quality proficient in management. This article is going to mainly compare modes of media talent training between Taiwan and Mainland China, emphasizing especially on the training mechanism of media talents in colleges and universities in Taiwan, hoping to offer some references and suggestions for media talent training in Mainland China.

Keywords: Media management talents, Media management, Dissemination of talent training.

1 Introduction

At present, journalism and communication education in China is at a period of high-speed development. According to data by High Education Department of Ministry of Education of PRC, there were only 66 journalism and communication professional stations in 1994, while in 2006, 661 journalism and communication professional stations were set up in over 460 colleges and universities, with approximately 130,000 enrolled students. The number of graduates from Journalism and Communication each year increased from several hundred in 1980 to over 30,000 at present [1]. With unfolding tide of expansion in colleges, scale of education of Journalism and Communication also exhibits an unprecedented development condition.

At the same time, development of talents in Journalism and Communication in China presents a nonuniform condition. Huang Chunping pointed out that Chinese media industry is lacking in versatile management talents, professional talents in emerging industry, talents of content originality and is insufficient in practical training of cultural talents who are disparately developed in different regions [2]. Especially in terms of administrative and managerial talents in media, Zhang

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Youchen mentioned four problems. Firstly, small number of managerial and administrative talents, irrational structure and low degree of specialization; secondly, shortage of extraverted managerial talents who are familiar with international common practice and rules, expert in media market operation, and strategic thinking; thirdly, insufficient marketability, innovative spirit and capacity among managerial and administrative talents; fourthly, insufficient reserve management talents and weak vitality. Statistically, the total number of practitioners in Chinese media industry has reached 600,000, but those who are proficient in media management account for less than 1%. [3]

As a matter of fact, the famous Management scholar Mintzberg [4] has made an outright statement that, it is difficult for management education at present, including MBA, to train effective management talents. Thus, it is difficult to train managerial talents not only in media, but also in common enterprises.

Of course, although there doesn't exist the optimal training mode for managerial and administrative talents, we still can utilize training mode in other advanced countries and in Hong Kong and Taiwan, which can be regarded as reference for improvement of talents training in Mainland China. Especially, Taiwan has similar language and social customs with Mainland China, and talents training in Taiwan has started earlier, so a large part of its mode can be referred to by Mainland China.

2 Summary of Development of Management Education in Taiwan Media

Journalism and communication education started in the middle of the 20th century in Taiwan. As early as 1935, Kuomintang Central Political School---predecessor of National Chengchi University set up Journalism Department. After resuming classes in Taiwan, National Chengchi University also resumed Journalism Department in 1955, which became the originator of journalism and communication education in Taiwan. In vocational education, the well-known jornalista Cheng Shewo established "Vocational School of World News" (predecessor of Shih Hsin University) in Muzha, Tapei in 1956, which was the threshold of journalism and communication education in technical and vocational education system. Afterwards, within several decades, media in Taiwan became relatively stable, and appeared "two newspapers and three television stations" (United Daily News and China Times, TTV, CTV and CTS). Under such a circumstance, way out for journalism and communication personnel was fixed, and their employment space was limited. Thus, the number of universities to set up Journalism and Communication Department didn't increase rapidly. For example, among public universities, only National Chengchi University set up Journalism and Communication Department, whereas among private universities, Chinese Culture University and Fu Jen Catholic University headed the list, and among technical and vocational schools, the following three universities set up Journalism and Communication Department in succession: Shih Hsin University (the former "Vocational School of World

News"), Ming Chuan University (the former "Ming Chuan Woman Business College") and National Taiwan University of the Arts (the former "National Technical College of Arts").

The situation of steady development lasted until 1990s. Weng Xiuqi [5] pointed out, the year 1991 was a critical year for development of communication education in Taiwan. Within this year, altogether seven communication-related departments were set up. From 1991 to 2000, at least one communication-related department was set up each year. In 1994, seven communication-related departments were established, whereas in 1997, up to eight such departments were established. Communication-related departments established within this period accounted for 70% of all communication-related departments and institutes in Taiwan, so it was called "A Golden Decade".

So far, altogether 23 universities have set up communication-related departments among the 68 comprehensive universities in Taiwan, accounting for 33.8%, establishing 51 communication-related departments and 40 research institutes (master stations). Among the 72 scientific universities and technical colleges in the technical and vocational education system, altogether 16 universities and colleges have set up communication-related departments, accounting f or 22.2%, with 20 departments and 5 institutes.

Reasons for vigorous development of communication education in Taiwan recent years can be summarized into the two aspects of supply and demand:

1) Supply: Taiwan conducted reform of educational system called "educational reform of ten years" in 1994, with focus on broadening limitations to newly established universities and departments, enhancing acceptance rate of universities, and transforming technical and vocational education system into ordinary universities, etc. Within the ten years, the total number of Taiwan universities expanded by five times, and most were transformed from original technical colleges or junior colleges, etc. According to the system, vocational school graduates or junior college graduates could be reformed as "university of science and technology", and could be awarded bachelor degree and master degree. Likewise, graduates from ordinary universities could enter themselves for examination into institutes in the technical and vocational education system. However, at the same time, fertility rate in Taiwan declined continuously, so the number of students enrolled each year hit a new low time and again. By this year, the acceptance rate in Taiwan universities has been up to over 97%. In such as situation, in order to attract students in the vehement competition of "winning for students", each university has to wrack their brains to set up departments and institutes to attract students. Communication-related departments have the characteristics of wide range of knowledge, being innovative and interesting, easy for employment, together with low establishment cost, so they have become the primary choice for newly established departments in universities.

2). Demand: Since 1980s, great changes have taken place in media in Taiwan, including release from "restriction on newspaper licensing" in 1988, publicly setting up of cable TV stations in 1992, and vogue of internet media at the end of the 20th century. All these changes increased demand on talents in communication, which stimulated universities to continuously set up journalism and communication

departments. In addition, with development of media per se, what is required is not limited to traditional editors and interviewers, but diversified talents. For instance, liberalization and marketization of media calls for comprehensive talents proficient both in communication and management, while transition of marketing concept requires integration of marketing and communication of talents.

Among Journalism and Communication Departments springing up like mushrooms, there are two bachelor degree programs and four master stations that focus on training talents in media management, respectively Graduate School of Communications Management in Ming Chuan University, Graduate School of Communications Management in Sun Yat-Sen University, Department of Communications Management in Shih Hsin University, Department of Communications Management in Nanhua University, Graduate School of Communications Management in Nanhua University and Graduate Institute of Sound and Image Studies in Management in Tainan National University of Arts, accounting for 8.6% of all Journalism and Communication Departments. [5]

Although there haven't been a large majority of specially established media management departments and institutes, most of them in Taiwan regard as one of their targets training "media managers" or "media management talents". For example, the PhD program in Journalism Department of National Chengchi University set up two targets: (1) training of talents in teaching and research; (2) training of media managers. Its Department of Radio & Television also set up "course of telecommunication and media management" for all students in College of Communication to take courses. Furthermore, it is aimed at training media operation and management, especially talents in electronic media operation and management.

Besides, a large majority of journalism and communication majors in Taiwan set up some relevant media management courses, such as "Media Management", "Media Operation and Management" and "Media Economics". Weng Xiuqi [5] has summarized 30 interrelated required courses, including "Management" and "Media Management". If other relevant courses were added, such as Media Economics, Statistics, and Media Marketing, then the proportion of media operation and management courses would be increased further. During the period of master degree, it is media talents with high quality that are trained, so more emphasis is laid upon media operation and management education. It is reported, among all 23 types of courses in journalism and communication master programs in Taiwan, the 5 types belong to media operation and management, respectively Management (or Media Management), Monographic Study on Communication Career, Media Operation and Management, Statistics and Communication Research Method, accounting for 22% of all courses. [5]

It can be seen that, various reforms in journalism and communication industry in Taiwan since the end of 1980s have caused proliferated demand upon diversified talents in communication, especially media management talents proficient in "both communication and management". Therefore, training on such a type of talents receives more attention.

In the following, the authors are going to introduce the three major media operation and management departments and institutes in Taiwan, and to summarize experiences in training media management talents in Taiwan.

3 Introduction to Media Operation and Management Majors in Principal Universities in Taiwan

Graduate School of Communications Management in Ming Chuan University. Graduate School of Communications Management of Ming Chuan University was established in 1995, which is the first graduate institute named by "communications management". The primary target of this institute is to integrate the two disciplines of communications and management to train management talents in communications. Since its establishment, the institute has held relevant seminar each year, and has pushed forward academic exchange in communications between Taiwan and Mainland China. Journal of Communications Management sponsored by this institute is the only professional scholarly journal about communications management in Taiwan.

There are four development focuses for Graduate School of Communications Management of Ming Chuan University

1). Media organization and management research: research on organizational features, cultural characteristics and management style etc, of different media.

2). Media human resource management research: discussion on human resource management policy and leading style etc, of media industry.

3). Media financial management research: financial and capital structure etc, of media, advertisements and public relations, etc.

4). Digital media research: research on changes of communications industry under influence of information technology, including internet media workers, communications products, communications structure and social structure.

5). Mainland media market research: research on media development trend and media environment in Mainland China.

Graduate Institute of Communications Management of Ming Chuan University stands alone in media education in Taiwan, with the following characteristics:

1). Equal stress on communications and management: different from other communications departments which mostly discuss the topic of media management with a special subject, Graduate Institute of Communications Management of Ming Chuan University exactly integrates the two major disciplines of communications and management. It is only on the premise when students possess fundamental knowledge about communications and management that they can further take courses they are interested in.

2). Large intensity in taking a course: Graduate Credit Hours are up to 62 in Graduate Institute of Communications Management of Ming Chuan University, more than 1.5 to 2 times common institutes. This is mainly to ensure that students experience complete education in communications and management. In addition to graduate credit hours, students have to meet the requirement of AP courses, that is, advanced placement of some fundamental management subjects before entrance to the university, such as Economics and Accounting, etc.

3). Equal stress on academicality and practicality: Graduate Institute of Communications Management of Ming Chuan University highlights equilibrium between academicality and practicality. In academic aspect, the institute holds relevant academic seminar each year to encourage graduate students to publish papers. In practical aspect, the institute sets up several seminar courses of special subject and invites people from industrial, official and academic communication fields to give a speech in the hope to bowse in distance between theory and practice. Besides, the institute also requires all postgraduates to get internship for <<Medianews Online>> sponsored by College of Communication to guarantee their ability of practice in media. In addition, Ming Chuan University set up "digital multimedia platform" (Medianews Online, MOL) in 2002, integrated four major research centers (Information Communication Research Center, IMCC, Research Center of Taiwan and Mainland Communication and Research Center for Industrial Academia Cooperation) and all internship media, and realized informationization and integralization of production flow of all media, which has provided a superexcellent practical platform for students of Graduate School of Communications Management.

Graduate School of Communications Management in Sun Yat-sen University. Graduate School of Communications Management of Sun Yat-sen University was established in 1997, which is the only graduate institute that focuses on media operation and management among all public universities in Taiwan. This institute is affiliated with School of Business, and its graduates are awarded MBA degree.

The goal of this institute is to train “management talents with both interdisciplinary integration capacity and humanistic spirit and originality”. Its enrollment constitutes communications group and management group, respectively enrolling students with background of journalism and communication and with background of management.

Students in this institute may select either of Economics and Statistics as their AP course and any two of Mass Communication Theory, Communication Policy and Regulation, Ecological Research and Business Strategy Analysis in Media Industry. In addition to AP courses, “Special Lecture about Communications Management” and courses about research methods (either of “qualitative research method and “research method on communications management) are required, and other courses are selective. Students may select from the two major modular courses of “marketing communications” and “digital integration”. So long as they take over three courses in a modular, they can be awarded relevant certificates. Graduate Credit Hours in this institute are 42, including 27 credit hours required to be taken in this institute, and other credit hours either in this institute or in other institutes.

Characteristics of training of talents in Graduate School of Communications Management of Sun Yat-sen University can be generalized as follows:

1) Integrity: Graduate School of Communications Management belongs to an integrated research institute of communications and management, and many courses are taught by teachers from School of Business and other departments and schools, including marketing management, financial management and e-business.

2) Informationization: Focus of journalism and communication in Taiwan is in the north and large-scale newspaper offices or electronic media are lacking in Kao-hsiung area where Sun Yat-sen University is located, so the development focus of this research institute is on Internet media. Besides, this institute establishes an Internet newspaper "EC Times", and students take charge of interviewing and writing in journalism and distribution of electronic newspaper, etc.

3) Openness: Graduate Credit Hours of this research institute are 42, including only 27 required in this institute, and others either finished in other departments or in this institute. Students are encouraged to take courses in other departments as their elective courses to enrich their knowledge system.

4) Practicality: Students are encouraged to practice in media and the combine internship experience and thesis writing together.

5) Internationalization: School of Business in Sun Yat-sen University attaches great importance to internationalized development, has signed exchange plans with several universities in USA, Australia, Sweden, Japan and South Korea, etc, and has carried out plans of "international exchange courses" and "Joint Master's Degree", etc. At present, Graduate School of Communications Management sends three to five students for exchange overseas each year.

Department of Communications Management in Shih Hsin University. Shih Hsin University was set up by the well-known Chinese jornalista Cheng Shewo in 1956, formerly "Vocational School of World News", with the goal of training talents in journalism and communication. Then, in 1997, it was renamed "Shih Hsin University", which has great influence in journalism and communication industry in Taiwan, especially in radio and television industry.

Established in 2001, Department of Communications Management of Shih Hsin University is the first university in Taiwan to set up bachelor's program in media operation and management. "Operation and management of communications media" and "operation and management of communications flow" are the two cores of this department. The former regards media as one type of corporate organization, and students master operation essence of communications media by learning specialized management knowledge. The latter focuses on management of flow of media content, such as production of originality, delivery of communication content, propaganda of image, and marketing of content, etc.

Courses of this department can be said integration of traditional journalism and communication major and business management major, and all students have to take required fundamental commercial courses, such as Economics, Accounting and Statistics. Other courses contain overall management courses, such as introduction to organization and management, human resource management in media, financial management in media, marketing management in media and information management in media. Students in this department have to select one from the three course modules of "communications", "media digitized production and project management" and "media marketing management", credit hours of each module ranking between 13 and 16.

Characteristics of training of talents in Department of Communications Management of Shih Hsin University can be generalized as follows:

1) Comprehensiveness: Undergraduates have more freedom than postgraduates both in terms of time for learning and in terms of the number of courses to take, so have access to take comprehensive courses about communications and management in the four years, and come to complete contact with the two primary majors. It can be said, graduates from Department of Communications Management of Shih Hsin University are not only students of "communications management", but also double talents in both "journalism and communication" and "business management".

2) Practicality: For courses about "Special Lecture of Communications Management" set up for senior students, senior personnel from media industry are invited to give lectures in the hope of strengthening students' understanding in practicality of operation and management in media. Furthermore, "special subject for graduation" and "internship in media" also bowse in distance between the university and the industry.

3) Perspectiveness: Modern media operation and management is not constrained to management of traditional media, such as newspapers and periodicals, and TV stations, etc. With the revolution of Internet, digital media and digital content have gradually evolved into high-light of media operation and management. Keeping pace with the times, Department of Communications Management of Shih Hsin University not only sets up course modules of "media digitized production and project management", but also has courses interrelated with new media forms, such as Internet medium and mobile phone medium, etc.

4 Summary of Characteristics of Training of Talents in Media Operation and Management in Taiwan

Generally speaking, characteristics of training of talents in media operation and management in Taiwan can be generalized as follows:

1) Combination of theory and practice: Master of Management Drucker has said [6], nature of management is implementing, not just knowing the theory; management knowledge originates from management practice, and only practice makes vitality possible. Journalism and Communication is a discipline particularly stressing on practice. Hence, media operation and management majors in colleges and universities in Taiwan attach great importance to training with equilibrium of theory and practice.

2) Integrated education: Journalism & communications and management are two profound disciplines, so it is not simply to take one or two general selected courses to get comprehensive hold of knowledge in both disciplines. Therefore, education of media operation and management in Taiwan attaches great importance to learning of management disciplines, such as, more than 62 credit hours of double courses in communications and management in Graduate School of Communications Management in Ming Chuan University, required courses in economics, accounting and statistics in Graduate School of Communications Management in Sun Yat-sen University, and even interdisciplinary learning of courses in

communications and management in Department of Communications Management in Shih Hsin University, which are all designed to enable students to get overall hold of fundamental knowledge in communications and management, and to become "double elites" in communications and management of journalism.

3) Diversification and informationization: With development of media industry, those proficient only in traditional media cannot satisfy demands of the industry. New technology has changed the environment, which, in turn, enhances demand on diversified capacity of people. In order to adapt to this demand, media operation and management education in Taiwan also gradually steps towards digitization and integralization, focusing on combination of traditional operation and management knowledge and new media technology. For example, "digital multimedia platform" in Ming Chuan University and "EC Times" in Graduate School of Communications Management in Sun Yat-sen University are both internship platforms of overall digitization and informationization. Courses of "special subjects about communications management" keep close pace with development of the media industry,, aiming at training the ability of students to survive in an era of digitized media.

4) Internationalization: As for the media industry, advanced countries are still the targets of learning by Chinese, including Europe, America and Japan, etc. Therefore, quite a large number of communications departments in Taiwan are seeking for international cooperation for internationalization. Especially, Graduate School of Communications Management of Sun Yat-sen University offers the most exchange opportunities, including exchange of students, and also application for joint degree and international exchange courses, etc. A great many universities have also opened classes of English teaching, held international symposium and have encouraged students to publish papers about English, etc, in the hope to be geared to international standards, and to get hold of the latest situation of media industry. In addition, so far, Communications Departments in lots of universities in Taiwan have established cooperation and communication relationship with Chinese Mainland.

In conclusion, since the release from "restriction on newspaper licensing", training of talents in media operation and management in Taiwan has evolved gradually from the earlier state of fumbling to a complete set of system. Meanwhile, students can master diversified knowledge and skills in communications, management and information technology, and practicalized and internationalized learning environment, able to be trained for media managers in the future. Such a set of systems is referable in Chinese Mainland colleges and universities.

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The Conception of the Construction of Land Consolidation Program and the Building of Industry-University-Research Mode in Land Resources Management Specialty

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Abstract. In China, land consolidation represents different features and contents in various social system, and land consolidation with modern sense began in the 90's of 20th century. In the meantime, land consolidation program is set up in the land resources management specialty in universities. The teaching and practice of land consolidation program has become the key point of land resources management research and reform. Combining with the features and contents of land consolidation during the present period, this thesis illustrates the construction of teaching system, the layout of teaching content and the design of teaching approach of land consolidation program, including the basic theory of teaching, land consolidation project, land consolidation design, item budgetary estimation, practical teaching, the design of teaching methods of land consolidation program etc.. Meanwhile, in order to intensify the learning effect of land consolidation program, this thesis also discusses the significance of constructing Industry-University-Research cooperation mode and propounds the IUR mode of university, government and industry.

Keywords: Land resources, Land consolidation, Industry-University-Research, Mode.

1 Introduction

Land consolidation is a systematical project, which involves many things such as policies and technology. The land planning in China is still in its elementary stage. Therefore, it's important for us to study the theory and practice in land planning, to train the staff in order to promote its standardized and scientific development[1]. The Law of Chinese Land Management in 1998 claimed that the state encourages land consolidation. In 2005, it is also emphasized in "The Advice on the Eleventh Five-year Plan" revised by the CPC. In 2010, "The Advice on the Twelfth Five-year Plan" proposed that land planning should be quickly finished in rural areas. Now the employees in land planning have reached to 2.6 million people, but there is no specialized land planning agencies in state administration. So, it cannot fit the development of the situation in land planning[2]. In our

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school, the subject of land planning was designed as a selective course in 2002 and as a required course in 2009. The subject involves not only the basic theory of land planning, land ecology, the land law, and land use planning, farm irrigation, the road bridge project design, the measuring learning, but also the application of MAPGIS, CAD and other aspects on building project budget etc. Therefore, how to do good land development and talent training courses is a complex and systematical construction, in the mean time, it can also meet the needs of the development of the professional staff in society.

2 The Construction of the Teaching System of Land Consolidation Program

Land consolidation programs require students to master the methods, techniques and methods of relevant basic theory, planning and design of land consolidation, and to be able to combine the professional knowledge they learned with the practice of land consolidation project planning and design, and can correctly and scientifically guide the practice of land consolidation, to provide scientific theory and technical support for the smooth development of land remediation work of our country. Therefore, land consolidation is a highly comprehensive and practical course.

2.1 The Construction of Relevant Curriculum System on the Basis of This Course

Land consolidation course covers the political, economic, legal, engineering, management and other disciplines of knowledge. Therefore, while designing related professional courses, we need try to be both comprehensive and complementary. According to the research of the land consolidation project of recent years and the features of the curriculum itself, and this course should be set around the following major-related courses: land economics, land law, CAD drawings, cadastral, land ecology, land use planning, irrigation, soil science, land survey and evaluation, geographic information systems, project management and project budget. As the students in the junior internship will participate in production practice in the sixth semester, the curriculum should start then.

2.2 The Presentation of Teaching Content

According to the nature and characteristics of the course, curriculum content is divided into: basic theory of teaching; planning study of land consolidation and land consolidation project planning and design; land consolidation project design; land consolidation project budget estimate and construction design; practice teaching.

The basic theory of teaching. It contains the basic theory of land consolidation, the content of land consolidation, the development of domestic and international

overview of land consolidation, experience and models, the background of land consolidation in China, the premise and motivation and other aspects of teaching.

The planning study of land consolidation and land consolidation project design. It is mainly required that the students should master the study report of the feasibility of land consolidation project, the compilation procedure of land consolidation project feasibility study report and the compilation content. Important parts of teaching include: the connotation, the survey and evaluation methods of land development and reclamation potential; water balance analysis; the survey and evaluation methods of land development and reclamation potential; the determination of land development and reclamation program etc..

Land consolidation engineering. Land consolidation project design is the focus and difficult points of teaching. Land development projects mainly include land formation, water conservancy projects, roads and other works (such as power engineering, water and soil conservation projects, etc.). Each project has its own relevant national technical standards. Thus, while determining the engineering design standards we must be familiar with the relevant national technical specifications in order to establish a scientific and rational design and avoid the situation from the actual design.

Land consolidation project budget estimate and construction design. The accuracy of project budget estimate determines whether or not there is reliable funding, and the key of smooth implementation of the project. Organizational design for construction projects is of great significance to the smooth running, completion and the final acceptance of the projects. This part mainly teaches the students how to prepare the project budget estimate book, master the quota and charge standards of land consolidation, and design reasonable construction organization on the basis of different natural environmental conditions.

Practice teaching. The composition of the content of land consolidation curriculum determines the importance and necessity of practice teaching. Practice teaching can help the students to apply the knowledge to practical work, and value the students' mastery of land consolidation knowledge in order to adjust the students' learning approaches and teachers' teaching methods.

2.3 The Design of Teaching Methods

According to my teaching experience in the land consolidation curriculum, the teaching methods are: First, scene teaching, teaching cases, discussion teaching [3] and system training. Scene teaching means to apply multimedia teaching methods to the teaching of fundamental knowledge, use pictures to make the students understand the status of land consolidation better; case study means to teach with the examples of related completed research projects, such as evaluation and potential survey of land consolidation; discussion teaching is to organize seminars, such as the securitization of the issue of land consolidation, land ownership adjustment; system training is to divide the students into several groups, offer them with the basic data of completed land consolidation projects, and require the students to compile a complete land development research report or project planning and design report.

3 Meaning of a Study in Land Management Production Mode Framework

3.1 Correct Guidance in Land Management Engineering Construction

With the help of schools, related teachers and students can go to engineering construction scene to give technical and constructive directions by combining current land utilization with land natural properties in the process of land management engineering.

More considerations made by project construction organization are how to finish the production task with quality and quantity guaranteed based on the general requirements of land exploitation and management and on the project blueprints. It is easy to make man-made eubiosis problems if there is inadequate consideration on ecological problems in the process of construction. For example, must the channel adopt seepage control techniques and seepage control methods in case of not destroying ecological environment? How should fertile topsoil be protected in the process of land leveling? How the groundwater is made full use of is a weakness to the builder construction organization. Although some considerations have been given in the stages of project discussion and design, scientific and reasonable suggestions are necessary after the entering of teaching and researching organization owing to the changes of some uncontrollable variables in the real working areas.

3.2 Training High-Level Applied Talent in Land Management

Land management rose in 1990's in China when more attention has been given to the daily intense of affordable land sources. Land management is not only a necessity for land sustainable development but also an important industry to drive the development of other industry, such as supplying job chances for college students. One of the problems limiting the smooth implementation of land management is the relatively lag behind training of professional land management talents. Production-learning-researching all-in-one gives the students majoring in land sources management in Jilin University chances of practicing after learning in classrooms. It meets the need of land management talents required in the modern society if the students go to work directly after they finish school.

3.3 A Scientific Plan and Design Made Again Based on the Possible Changes of Real Situations

One of the principles of land exploitation management is to take into account local conditions and give detailed guidance. Project design may need to readjust because of changes in Local topography, so teaching and researching organizations need to raise a more scientific design plan based on different design criterion of

different projects in land exploitation management in order to increase efficiency in management, organization and construction.

3.4 Encouraging Local Citizens to Throw Themselves into the Construction of Land Exploitation and Management

Local citizens feel unenthusiastic in the land construction owing to the changes and adjustment of land property right which has been a big problem in the process of land management construction. Besides, people in construction organizations cannot master the essence of certain laws, rules and policies related to land source management, which leads to ineffective guidance of farmers into land management construction actively. Sometimes, local citizens are unclear about the positive significance of land management which may mean negative effect to land management construction, so with the help of knowledge learned in classrooms, it is his responsibility for being a college student majoring in land source management to explain the benefits of land exploitation and arrangement to local farmers from the perspective of public policy and public laws, helping farmers analyze the social, economic, and ecological benefits after land exploitation for better arousing their interest in land exploitation.

3.5 Raising Scientific Utilization Plans after Land Arrangement

Every teaching and researching organization can raise beneficial water-saving planting plans and soil improvement plans based on the local agricultural planting systems and planting modes. It is also possible to advance scientific and reasonable land exploitation and planting plans with the help of researching advantages of every teaching and researching organization.

4 The Industry-University-Research of Land Consolidation

For the university, the core of Industry-University-Research is "University", that is to improve the quality of teaching to serve for the local economy, meanwhile, focus on developing the students' comprehensive abilities. During the process of theory course teaching, the teacher can communicate with students and share their research results and experiences, make the students understand their knowledge better, stimulate their studying interests. During the internship, combine the fieldwork with the local government and enterprise' project naturally, fulfill the projects of the enterprise' mandate through the students' internship[4].

At present the main modes of Industry-University-Research in universities of our country are the following: school-enterprise cooperation; Industry-University-Research based on the practice base inside and outside of university; Industry-University-Research driven by scientific researches[5,6]. Land consolidation course construction in the combination model can rely on land and resources administrative departments and the construction unit to build up Industry-University-Research mode of university, government and industry.

Mode Construction. The main participants are the local land,resources management departments and land consolidation center, production and construction units, teaching and scientific research units.

4.1 Land and Resources Administrative Departments and Consolidation and Rehabilitation Center

China land administration law provisions "nation encourages land consolidation", but during the actual operation, the administrative departments of the government still dominated land consolidation area, including the choice of land management funds collecting and raising , etc. Therefore, the administrative department of land management plays a linking role in coordination with construction unit and teaching and scientific research units.

4.2 Construction Unit

The construction unit is the main body of the land consolidation project construction, responsible for all the construction projects. It can provide land consolidation activity places for the students that major in land management and have professional production practice, at the same time it can provide scientific research platform for the teachers and students. The senior technical staff of the construction unit can deliver detail explanation to the students according to their practical work experience.

4.3 The Teaching and Scientific Research Units

During the process of the production practice, the teaching and scientific research units can guide the students to apply professional knowledge into practice, at the same time put forth scientific and reasonable measures for questions which arise in the process of the construction, carry out scientific demonstration and research for the new problems. Simultaneously we can obtain first-hand scientific research material, build up the solid basis for later scientific research and teaching.

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Commercial Bank Branch Efficiencies Based on Three-Stage DEA Model

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Abstract. In order to solve the problem for evaluating the efficiency of branches of commercial banks, constructs an assessment model of operating efficiency by applying the Three-stage DEA Model. For illustration, gives an empirical study on the efficiency of a city commercial bank's 20 branches, providing more effective basis for the head office to do performance assessment, revision management strategy, add or cut the branches. The empirical results show that the evaluation model overcomes the traditional shortcomings of the DEA method, the performance evaluation of the results to be more reasonable.

Keywords: Commercial Bank, Three-stage DEA Model, Efficiency Evaluation.

1 Introduction

Operating branches to enhance the efficiency of commercial bank is the key to improve the overall efficiency of commercial bank branch, study the efficiency of commercial bank branches, and analyze ways and means to improve efficiency, which is of great theoretical and practical significance. At present, the study of efficiency to commercial Banks are mainly used in the forefront of the traditional efficiency analysis, no dissection of the environmental factors and random error for the efficiency of the values of the influence, lack of bank branches of quantitative analysis meticulous efficiency[1]. This article from the reality of commercial Banks in China, using Fried proposed three-stage DEA method, builds commercial bank branches operating efficiency evaluation model, gives an empirical study on the efficiency of a city commercial bank's 20 branches, providing more effective basis for the head office to do performance assessment, revision management strategy, add or cut the branches.

2 Commercial Bank Branches Efficiency Evaluation Model Construction

2.1 Evaluation Thought

Data envelopment analysis (DEA) is for decision unit relative effectiveness analysis of a kind of non-parametric methods, is using conjugate curves technology

L. Zhang and C. Zhang (Eds.): Engineering Education and Management, LNEE 112, pp. 465–470.
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instead of general individual in economics, will all be production function evaluation Decision Making units DMU the input and output corresponding to the geometry of space, looking for the most efficient units[2,3]. Fried proposed a new efficiency evaluation model, Three-stage DEA methods, and the method of the biggest characteristic is to be able to make the business operation of the factors (external environment and random errors to the influence of the efficiency) remove, made the efficiency of the calculated value more truly reflect the enterprise internal management level.

The basic idea is: the first stage use input and output data of bank branches to estimate the original efficiency value. The second stage interpret slacks as explanatory variable, separate factors affecting the value of banking efficiency using SFA regression model, and adjust the input variable value according to the results. The third stage is to input variables into the first stage of the DEA model, to calculate the efficiency value of the bank which has deduct environmental impact variables and random error influence[4,5].

2.2 Evaluation Model

(1) The first stage-the traditional DEA model. A n Decision Making Units unit (Decision, DMU, This paper refers to the commercial bank branches) $DMU_j(1 \le j \le n)$, DMU_j x_j, y_j ($x_j \ge 0, y_j \ge 0$) respectively for the input vector. The BCC model can have any DMU_j efficiency value is as follows:

$$\max h_j = \sum_{r=1}^{s} u_r y_{rj} - c_j \tag{1}$$

$$s.t. \quad \sum_{i=1}^{m} v_i x_{ij} = 1$$

$$\sum_{r=1}^{s} u_r y_{rj} - \sum_{i=1}^{m} v_i x_{ij} - c_j \le 0$$

$$u_r, v_i \ge 0; i = 1,2,\cdots,m; r = 1,2,\cdots,s; \ j = 1,2,\cdots,n$$

Where, x_{ij} says that the j-th DMU inputs of the i-th item; y_{rj} says that the j-th DMU outputs of the r-th item; v_i and u_r respectively say that the i-th item input and output of the r-th weighted coefficient; c_j says scale index, through the c_j pay the size of the values can judge the DMU is in scale payment increase or decrease state; h_j says the j-th DMU efficiency value between 0 and 1, the close to 1 said the higher efficiency.

Using dual planning theory, and introducing relaxation variables s_{rj}^{+}, s_{ij}^{-} and the infinite small ε, converts pattern (1) into the dual problem, through this conversion can get more information, the pattern is as follows:

$$\min h_j = \theta_j - \omega\left(\sum_{r=1}^{s} s_{rj}^{+} + \sum_{i=1}^{m} s_{ij}^{-}\right) \tag{2}$$

$$s.t. \quad \sum_{j=1}^{n} \lambda_j x_{ij} + s_{ij}^{-} = \theta_j x_{ij}$$

$$\sum_{j=1}^{n} \lambda_j y_{rj} - s_{rj}^{+} = y_{rj}$$

$$\sum_{j=1}^{n} \lambda_j = 1$$

$$\lambda_j, s_{rj}^{+}, s_{ij}^{-} \geq 0; \ r = 1,2,\cdots,s; \ i = 1,2,\cdots,m; \ j = 1,2,\cdots,n$$

Where, s_{rj}^{+}, s_{ij}^{-} represent the difference between the real value and the efficiency value, from this variable can be used to understand the input and output items for improvement. And cause of the difference between the input reason, attributable to management without efficiency, environment without efficiency and random error factors, DEA model can't will these factors on the efficiency of the values of the separate effects, so we enter the second phase of the analysis.

(2) The second stage-SFA model. Using the first stage SFA model decomposition of the income difference value, with p input can be viewed on an environment variable value difference effect, a regression equation for:

$$s_{ij}^{-} = z_j \beta^i + \varepsilon_{ij} + \theta_{ij} \tag{3}$$
$$i = 1,2,\cdots,m; \qquad j = 1,2,\cdots,n$$

Using maximum likelihood estimation type (3), first for the unknown parameters such as $\hat{\beta}^i, \hat{\mu}^i, \hat{\sigma}_{i\varepsilon}, \hat{\sigma}_{i\theta}$, and then use this method for the $\hat{E}\left[\theta_{ij} \middle| \varepsilon_{ij} + \theta_{ij}\right]$, can estimators ε_{ij} are as follows:

$$\hat{E}\left[\varepsilon_{ij} \middle| \varepsilon_{ij} + \theta_{ij}\right] = s_{ij}^{-} - z_j \hat{\beta}^i - \hat{E}\left[\theta_{ij} \middle| \varepsilon_{ij} + \theta_{ij}\right] \tag{4}$$

Because in some extreme cases, for the environment is very poor decision making units to reduce its investment may lead to after the adjustment of investment is negative, the paper for those in the environment is good decision unit increase its investment, will the adjusting methods of the estimated value of the input into the adjustment mean:

$$x_{ij}^{*} = x_{ij} + \left[\max_j \left(z_j \hat{\beta}^i\right) - z_j \hat{\beta}^i\right] + \left[\max_j \left(\hat{\varepsilon}_{ij}\right) - \hat{\varepsilon}_{ij}\right] \tag{5}$$
$$i = 1,2,\cdots,m; \quad j = 1,2,\cdots,n$$

The first brackets represent all the decision making units in the same environment, the second adjust the parentheses representatives will all decisions of the unit for the same random error adjusting situation.

(3) The third stage-the adjustment DEA model. Put each variable value x_{ij}^{*} which is adjusted in the second stage into the BCC model of the first stage, recalculated to obtain bank efficiency value which has deducted the environmental variables and the effect of random error term

2.3 The Evaluation Index and the Selection of Environment Variables

(1) Input and output index selection. Select net value of fixed assets, on-the-job number of employees, operating expenses as input index, business income, savings and loan total daily average daily as output index.

(2) The environment variable. The second stage to eliminate the environment factors also known as exterior factors, they both the region where the macroeconomic environment, the government's control policy, industry structure, the overall market environment and also includes property, scale, such as a fixed number of year. We introduced four variables to separate the external environment factors on the influence of the bank efficiency, they are: the real GDP growth rate, the one-year loan interest spread, and set up the total number of customers.

3 Commercial Bank Branches Efficiency Evaluation of Empirical Analysis

From a city commercial bank 20 home city branch selection as the research object, the time limit for sample on January 1, 2009 to June 30, 2010, using DEAP V2.1 software the calculation of efficiency value respectively from the efficiency, reference set and difference variables of the three aspects analysis.

(1) Efficiency analysis. Three phase by DEA model measure to the branches of efficiency value, as is shown in table 1. In the first stage without considering the environment of variables, In the second stage model to estimate the influence SFA effect, and by using the estimated value adjustment coefficient, and after adjustment in input variables into the DEA model to estimate the value of efficiency, which is the third stage of the efficiency of the sample value. Compared with the third stage, the first stage underestimates the influence of the waste of resources caused by the efficiency of the whole technical efficiency value, the third stage income efficiency score more representative of the bank's internal management efficiency, also indicates that in the second stage of the environment has its necessity adjustment.

Table 1. Sample enterprise first stage and the third stage the efficiency value

Branch	TE		PE		SE		Scale pay	
	first	third	first	third	first	third	first	third
DMU1	0.921	1	0.989	1	0.931	1	irs	crs
DMU 2	0.61	0.653	0.736	0.707	0.829	0.924	irs	irs
DMU 3	0.997	0.906	1	0.907	0.997	1	irs	crs
DMU 4	0.51	0.786	0.581	1	0.878	0.786	irs	drs
DMU 5	0.693	1	0.856	1	0.811	1	irs	crs
…	…	…	v	…	…	…	…	…
DMU 20	0.732	1	0.811	1	0.903	1	irs	crs
mean	0.770	0.808	0.902	0.914	0.849	0.880		

(2) Reference set analysis. To find out the difference between the actual value and the projected value must first understand the reference collection of inefficient DMU, the results in table 2. In addition, through the analysis of the collection reference number of statistics, the efficiency of the value is 1 efficient enterprise further distinguished the relative efficiency, be reference, the more represents the enterprise is a really effective.

Table 2. Sample enterprise reference list set

Branch	Co-reference set	Reference number
DMU1	1(1)	4
DMU 2	15(0.245) 17(0.004) 13(0.272) 1(0.123) 20(0.356)	0
DMU 3	5(0.005) 17(0.019) 15(0.139) 13(0.584) 1(0.253)	0
DMU 4	4(1)	1
DMU 5	5(1)	4
…	…	…
DMU 20	20(1)	7

Note: Figures in brackets the value of λ.

(3) Slack variable analysis. After understanding of the reference collection of each DMU, we can do slack variable analysis. For a branch which pure technical efficiency is 1, its target value is equal to the actual value, shows that Its input and output variables are doing the most effective use of, do not need to improve. For other branch which pure technical efficiency is not 1, and its target value is not equal to the actual value, and the difference between the actual value and the projection value, also is the relatively inefficient enterprise resources can improve space.

4 Conclusions

This paper uses Three-stage DEA Model to analysis 20 branches operating efficiency of a city commercial banks, and verifies the Three-stage DEA method is more effective than the traditional method, which can more accurately measure the efficiency of management of the bank to provide effective management decisions and daily reference for banks in production practices. The ideas and methods for the research of our bank efficiency has the certain enlightenment and reference meaning, as a new method, how to DEA model to be perfect constantly three stages to better adapt to the actual conditions of our country will be the focus of future research direction. Three-stage model of how the DEA continue to be improved to better fit the actual situation of our country will be the focus of future research directions.

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A Study on Practical Teaching System of the Education of Creation and Innovation of Independent Colleges

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Abstract. The innovation and entrepreneurship education emphasizes the cultivation of innovation and entrepreneurship spirit, paying attention to improve the overall quality of innovation and entrepreneurship. Based on the features of Independent college students, this essay tries to start from the training objectives, top-level design, and what's more in virtue of various types innovative practice carrier within and outside class, through the effective quality assurance system, it is possible to build innovative entrepreneurship education that suit for the Independent college's practical teaching system.

Keywords: Independent College, Teaching Students in Accordance to Their Aptitude, Innovative Entrepreneurship Education; Practical Teaching System.

1 Introduction

The education of creation and innovation not only emphasizes the cultivation of enterprise consciousness and creative spirit, but also attaches importance to improve the overall quality of innovation and entrepreneurship, especially to expanding the capacity of innovative operation. Instead of relying only on theoretical teaching, it needs to combine theoretical teaching with practice to train high-quality talents with innovative ability, who can use creative thinking to discover problems, solve them, put forward new thoughts, concepts and create something valuable. Therefore, the talents should possess many characteristics, such as initiative, adventure, professional technique knowledge, social skills, management skills and the ability to work independently. Through exerting students' consciousness and independence, their creative spirit can be developed. By creative practical activities, the pioneering quality of students can be cultivated. Using the method of theory integrating with practice, the creativity of students can be enhanced. Generally, these methods can change the passive learning modes of students into the active ones and improve their social skills in practice. Furthermore, through long-term accumulation of practical experiences, students will have the sustainable development capacity on the workplace.

Independents colleges have been built relying on parent universities and the practical teaching systems of independent colleges almost copy their parent

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universities'. But in fact, student source from the two kinds of colleges are significantly different. Although students from independent college are not so good as those from public universities in study skills, but they have distinct individuality, active thinking and creative spirit. Moreover, because of their advantages such as the ability of organizing and planning, various hobbies, they deserve to contribute all contributing their shares to various activities. Integrating the practical teaching system into the first classroom and the second classroom can effectively enhance the effect of the education of creation and innovation for independent college.

2 First Classroom

Optimizing and integrating the practical teaching resource, combining with the social demands and students' characteristics of independent college, the training of students' engineering application ability is emphasized in process of making specific plans. Increasing the practical class hours, the students' practical ability and engineering quality are developed in each educational steps, such as teaching experiments, curse design, production practice, practice-training curriculums and graduation design, etc. These steps possess their own characteristics and are all linked to each other. The experimental courses focus on practical teaching which is developed from curriculum content, and the students' engineering quality will be enhanced by adding comprehensive design experiment. The curse design focuses on comprehensive training of knowledge points, adopts the teaching methods of engineering project driving and chooses multi-disciplinary engineering projects. The production practice focuses on learning the whole technical process, and pays attention to master the manufacturing and testing processes. The practice-training curriculums chiefly apply to the big engineering ideas, and combine with the specialized characteristics to accomplish the multi-disciplinary comprehensive practice training, even the ability of engineering comprehensive practice and the consciousness of system integration innovation of students will be strengthened through scientific practice training combined with typical engineering cases. The graduation design attaches importance to connecting students' comprehensive practice with theoretical study, developing the students' ability of comprehensive application of professional knowledge. Therefore, through abovementioned steps, a qualified probationary engineer who possesses professional quality and engineering application ability will be matured.

3 Second Classroom

The activities of creation and innovation, such as academic competitions, social practice activities, entrepreneurship, making scientific works, training enterprise talents, play important roles in second classroom. The second classroom provides all students with the opportunities to show their talents and communicate with each other, which can strengthen students' ability to accumulate funds and develop by themselves.

3.1 The Cooperation between College and Enterprise

In many companies of Hangzhou Xiasha economic and technical development zone, according to the actual demand of business, the students will be assigned to the specific posts to practice during summer and winter vacations. At first, through enterprise introduction, lecture and visitation, the students will get a thorough understanding of the enterprise. Then they will accept post training and omni directional guidance by the skilled workers and professional teachers. Finally, the college will invite some entrepreneurs and experts as visiting professors to host special lectures in order to help students acquire the latest development in business, understand the actual situation of the forefront of production, make full use of educational resources of schools and companies and build individual knowledge structure and capacity system.

During the process of doing graduation design, the college and companies will arrange for a teacher respectively to guide the students to solve the actual problems in production and to develop the students' ability of solving problems comprehensively. Through the practice, the application value of subjects will be increased, and a good engineering environment will be provided for students, where they can acquire a lot of knowledge and experience which can not be mastered from classroom.

3.2 A Variety of Extracurricular Activities

The students of independent colleges have distinct individuality, active thinking and creative spirit. The teachers should bring their advantages and special abilities into full play. A variety of colorful activities, such as electronic commerce simulation negotiation competition, marketing case analysis competition, entrepreneurship plan competition, robot games and advertising design competition, have became the important carriers for the events of creation and innovation.

School-level innovative elective courses such as patent and invention, mechanical engineering innovative training and basis of electronic design, lay the theoretic foundation for students with lots of hobbies to train their basic skills and arouse their creative desire.

According to students' learning situation of these elective courses, excellent students will be selected to related innovative corporations by means of signing up, written test, interviewing and other procedures. The main contents of innovative corporations include subject contest, research assistant, science and technology service, patent and invention, academic exchange, entrepreneurship training, scientific paper writing and so on. After a period of innovative project training, major guidance of teachers, learning and communication among students, the selected students will become outstanding players of related innovative projects.

3.3 The Entrepreneurship Instruction Center

Supported by Hangzhou entrepreneurship instruction center, the policies of employment and entrepreneurship are published through websites, propaganda

columns, exhibition boards, brochures and other channels. Regularly updating the propaganda contents make sure that the students can acquire timely the latest employment information and policies. In addition, experts and scholars are invited to explain the policies of employment and entrepreneurship in details in college students' vocational guidance course. A variety of valuable and excellent entrepreneurship projects and cases are exhibited for students in the entrepreneurship instruction center.

Meanwhile, the teachers who have attended various training courses of entrepreneurship and career planning and own rich experience in venture are selected to join the ranks of entrepreneurship teaching team and establish the entrepreneurship workshop. The workshop offers a platform for students who have entrepreneurship desire to cooperate and communicate with the entrepreneurship teachers.

4 Marked Success

The college has brought subject contest, research assistant, science and technology service, patent and invention, academic exchange, entrepreneurship training, scientific paper writing and other programs into the practical innovative training plans and organized diversified innovative programs. In 2010, the college has achieved marked success. For example, the college has won one national golden prize, one national second prize, one national third prize, one province-level outstanding award, four province-level first prizes, nine province-level second prizes, and twenty-one province-level third prizes in A subject contest. Besides, the college also won one province-level outstanding award, three province-level first prizes, four province-level second prizes and three province-level third prizes in B subject contest. During this time, six student groups have succeeded in entrepreneurship. The students have applied for 25 patents and published 21 papers.

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The REITs Applied Research of Indemnificatory Apartments Financing

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Abstract. In 2011, the Ministry of Hosing and Urban-Rural Development issued a notice on Submitted to the task of urban affordable housing projects which proposed clearly planned task of urban affordable housing was 10 million units in 2011. But the feedback shows that financing is the biggest challenges placed in front of the construction of indemnificatory apartments. This paper analyzed the external environment and internal environment by learning from the experience of the foreign indemnificatory apartments financing model and proposed that Real Estate Investment Trust financing model should be introduced in the country.

Keywords: Real estate investment trusts, Indemnificatory apartments, Finance.

1 Introduction

In 2011, the Ministry of Hosing and Urban-Rural Development issued a notice on Submitted to the task of urban affordable housing projects which proposed clearly planned task of urban affordable housing was10 million units in 2011. But the feedback shows that local governments said the power is insufficient to complete this plan and full implementation is difficult. Financing is the biggest challenges placed in front of the construction of indemnificatory apartments. The funds needed are about 1300 to 1400 billion yuan to build 10 million units of indemnificatory apartments. Although the central government's financial subsidy of 103 billion yuan for the indemnificatory apartments construction will be allocated one after another, the funding gap of the indemnificatory apartments is still huge. For the large funding gap of indemnificatory apartments, Experts believe that it can be made up by social capital when they consider that government efforts to promote the indemnificatory apartments construction is a huge investment market which has reliable profits and stable income for social capital. This paper argues that the real estate investment trust financing model is more suitable for long-term development of Chinese indemnificatory apartments. Not only can this model solve the large funding gap of the indemnificatory apartments at the present stage but also can provide investment channels for the majority of investors and it will be conducive to the long-term steady development of the market[1].

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2 Real Estate Investment Trust

Real Estate Investment Trusts is a trust Fund which collects funds of a qualified majority of by issuing revenue certificate, the specialized investment institutions does the real estate investment management and distributes the investment comprehensive income to investors in proportion. REITs represents the most advanced productive forces in the current real estate areas around the world.

2.1 Production and development of real estate investment trust. In 1960, the world's first REITs was born in the United States. As the U.S. government allowed officially REITs which meets certain conditions can be exempt from the income tax and the capital gains tax, REITs became the most important financial mode of America. The underlying assets of Link REITs which has been on the market in Hong are commercial property under the Hong Kong Housing Authority public sector, 68.3% of them is the rental income from retail business and 25.4% of them is the parking and other revenues account for 6.3%. Distribution of the rent region is that Hong Kong Island accounts for 7.2%[2].

2.2 Action mode of Real Estate Investment Trust .

REITs is a way of assets-securitization in essence and it operates typically in two ways:

(1) Special purpose vehicle company (SPV) issues the beneficiary certification to investors and investments the funds raised intensively in office buildings, bazaars and other commercial real estate, cash produced by commercial property flows investors to returns capital and balance interests at the same time.

(2) The original property developers will package some or all of its commercial property assets to establish a professional REITs, they will treat the income of REITs such as its annual rental, mortgage interest, etc., as the objects and divide the income equally into a number of copies and sold to investors, and then they will issue the dividend regularly. Actually what they provided to investors is an investment similar to bonds.

2.3 The advantages of real estate investment trust

(1) REIT has high liquidity and it reflects the real estate value by the way of securitization. In the market, investors can trade securities at any time to help the flow of funds and reduce effects of low-rent housing difficult to liquidate.

(2) REIT can increase the financing rate of low-rent housing. REIT raises fund in the capital market by beneficiary certification and investments the fund directly in the real estate market and this can solve the problem that huge amounts of fund is demanded in short time.

(3) REIT can disperse investments risk. Investment of low-rent housing needs huge capital injection, Only individual investor investment low-rent housing is not easy to solve the problem of financing and even can easily lead to excessive concentration of financial risk. However, REIT issues sets of beneficiary certification, which can disperse investments risk of investors and is also in line with relevant government policies.

(4) Tax savings. REIT financing can reduce the tax, which is one of the reasons of the rapid development of foreign REIT.

(5) Internalized management cost of REIT. In real estate management, REIT will implement internalization of property management usually, This can save part of the cost of property management, the pressure of Government departments for low-rent housing management is reduced and human and financial resources invested in the low-rent housing management activities by Government departments are saved at the same time[3].

3 Financing Mode of Foreign Indemnificatory Apartments

Indemnificatory apartments is policy-based house invested and built by the country to improve housing conditions of medium and low-income households and it is subsidized according to the law by the government. In view of the Public Goods nature of indemnificatory apartments, developed countries all have adopted basically government-led approach in indemnificatory apartments construction, with rent and Placing. Most of the participation of Private sector is limited. Led by the government, funds of indemnificatory apartments construction in most countries rely mainly on financial allocation. The policy of U.S. low-rent housing construction is that the government encourages the private sector, that is developer, to enter the field of low-rent housing construction, and then government prepares the plan about construction funds financing guarantee and rent compensation. Nearly 60% of the population in Germany rent to live. The country adopts the mode that Government plus cooperation what mainly is cooperation of government and social Investors and encourages low-income households to join cooperatives and housing savings. Indemnificatory apartments coverage of Singapore is up to 85% and is highest in the world. The country adopts housing funds system, that is every Singapore in-service citizen puts 40% -50% of the personal income into the housing funds pool which is managed and operated by the central housing funds situation and nearly 80% of funds is used for the construction and consumption of indemnificatory apartments.

4 Application of REITs in the Domestic Indemnificatory Apartments Construction

In the context of continued macro-control policy of the real estate industry, pilot program of REITs changed its direction quietly. Following Tianjin is expected to win the first in the field of low-rent housing, Shanghai also invested REITs pilot to indemnificatory apartments.

4.1 Feasibility Analysis of the Indemnificatory Apartments Project REIT Financing

4.1.1 The Feasibility of the External Environment

(1) Experience in international capital. Public housing construction projects of U.S., Hong Kong, Singapore and other places just use the way of asset securitization for the project financing and have succeeded in it. These experiences provide useful lessons for our indemnificatory apartments project financing.

(2) Co-ordination of national policies. Building low-rent housing is a livelihood project which is to solve the housing difficulties issue in the city. The relevant government departments will fully cooperate with it. December 2008, the "Finance 30" proposed clearly that develop the pilot in real estate investment trusts and expand financing channels of real estate companies[4].

(3) similar projects in China have has Preliminary experience. Some similar projects have done the attempt of securitization and have succeeded to admiration. For example, Highway asset securitization of Zhuhai. These domestic projects also accumulated relevant experience for our country to carry out the low-rent housing REIT.

(4) The maturity of investors and investment banks. With the continuous development of China's securities market and in-depth understanding of the REIT of investors, there will be more and more investors choose to buy REIT.

4.1.2 The Feasibility of Internal Conditions

The connotation of Indemnificatory apartments rate of return, return on assets, return on equity analysis, etc., wo argue the low-rent housing from the management point of view.

(1) Content rate of return method is the most important investment decision one way. Content refers to investment returns in its life cycle, according to an annual discount rate of investment project discounted net cash flows, the total present value of future benefits is exactly equal to the amount of original investment of the project, this time the discount rate is the rate of return content It is up to the real investment rate of return. Content Pay Act amended the formula is:

$$\sum_{t=0}^{n} \frac{COF_t}{(1+k)^t} = \frac{\sum_{t=0}^{n} CIF_t (1+k)^{n-t}}{(1+MIRR)^n}$$

MIRR is the content of return; COF is cash outflow;t is year; CIF is cash inflow;k is Bank interest rates; n is an investment life.

(2) ROE return on equity Is the net profit percentage of average equity is profit after tax divided by net assets of the company by the percentage rate:

$$ROE = \frac{CIF * B - S * B - F}{NA}$$

ROE is return on net assets; NA is net assets; B is Real estate construction area; Monthly income is CIF * B; Various cost is S *B; F is Apportionment of depreciation.

This indicator reflects the level of income equity, equity capital used to measure the efficiency of the company. The higher the index value, the higher the benefits of that investment.

4.2 The Necessity of Indemnificatory Apartment Construction

(1) The need of Real estate in China. Commercialization of developed countries and regions are the basic realization of housing shelter for all cases, Gradually embarked on the road of commercialization of housing. In China, the commodification of housing in this area leave large gaps, increase construction of affordable housing currently is covering the gap[5].

(2) the need for Alleviate the housing pressurevand building a harmonious society. Land resources are relatively tight, the housing market, the commercialization of today, the Government must further strengthen the construction of the housing security system in order to protect the basic housing problem of low-income people to improve the living conditions of low-income families is to build a socialist harmonious society, An important aspect of ensuring social stability.

(3) Inhibition of the needs of fast rising housing prices. In recent years, prices in some cities in China rising at a high stage, house prices rose faster, more prominent contradictions of housing security, housing security needs of the more urgent. Protection of housing prices to income of local residents to adapt.

4.3 The Design of REIT

The operation of REIT, as shown in Figure 1,

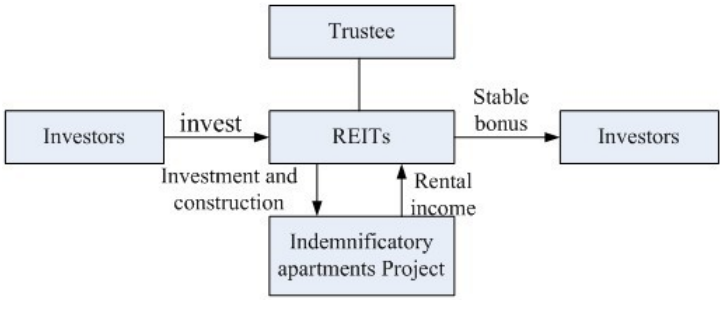

Fig. 1. Indemnificatory apartments REITs structure

(1) Investors to invest REIT, its access to funds for construction of low-rent housing; In addition, the existing real estate securitization financing to meet the re-building needs[6].

(2) By the custodian bank to raise capital fund management, fund companies and investment and financing management committee, and hire professional consultants to provide related services.

(3) charge for low-rent housing rental housing REIT Monthly, and to the trustees for review.

(4) At the end of the required low-rent housing REIT dividends on investment beneficiaries. Compared to the general investment trust, REIT way to raise capital either low-rent housing construction, real estate and can absorb the entity joined the low-rent housing system.

4.4 Empirical Study

Tianjin Notes version of REITs REITs program is the first concept of a product, has caused local governments, real estate and financial trust industry, and many other concerns. Tianjin REITs programs based on the protection of housing assets to the municipal real estate development and management Group Limited (Tawaf Group) owns and manages 4 million low-rent housing, construction area of more than 200 million square meters. The operation mode is as follows,

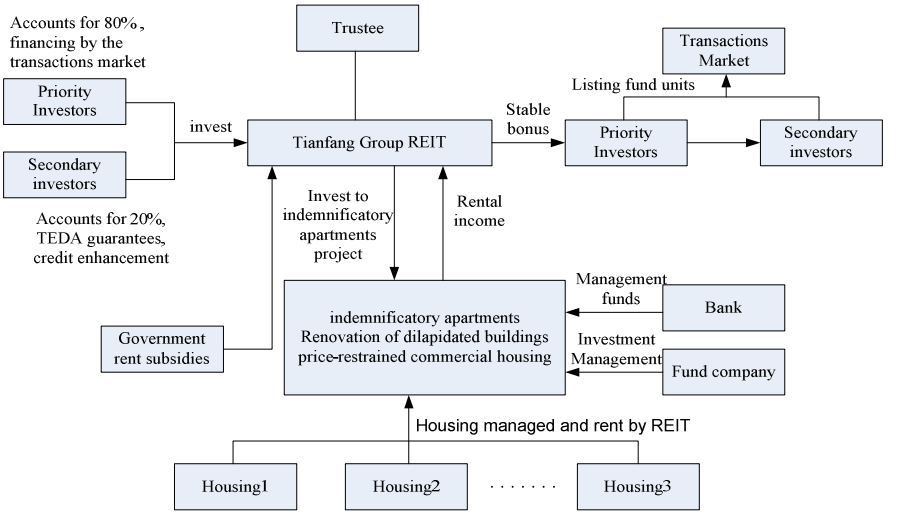

Fig. 2. Tianfang Group Indemnificatory apartments REITs structure

Tian fang Representative the Government meet the conditions of housing for low-income families. In accordance with the revenue model, the actual monthly rental charge about 1.85 yuan per square meter, 25.15 yuan government subsidy to meet the rental market around the average is about 27 yuan per square meter.Tianfang Group will set up low-cost housing, real estate entrusted to REITs,

the Trustee will be beneficial to the priority issue of the inter-bank bond market to benefit certificates, transfer to the institutional investors. Scale up to the trust beneficiary certificates issued 80% of total assets, about 38 million.

The REITs yield of Tianjin R:

$$R = \frac{x + x(1+r) + \cdots x(1+r)^{11} + G}{GA}$$

$$R > R1 > R2$$

R is the rate of return;X is Monthly rent;r is Bank deposit interest rates;G is Government subsidies; R1 Is Industry return on investment; R2 Is Bank loan interest rates.GA is Total assets.

Tianjin REITs yield R = 13.8%, and R1 = 8%, R2 = 5.94%, of which investment income was significantly higher than the industry rate of return and bank lending rates, the fund has such a high rate of return, so there TEDA Enterprises as collateral to provide credit enhancement support, the program in the market has a high degree of acceptance.

Under the program, raise funds to benefit certificates was closed operated by Tianfang Group, five-year total build about 230 million square meters of low-rent housing, public rental and the price of commercial housing. In the asset protection package of Tianfang Group, the sale price of housing will return for the protection of housing to provide rental subsidies for REITs. That is, low-cost rental housing and public subsidies and losses on, we must make it back through the price of commercial housing. Public information, renovation of dilapidated buildings in Tianjin and the protection of housing construction, the Tianfang Group undertakes more than 60% of the project.

5 Suggestions for Development Indemnificatory Apartments REIT

(1) We should establish and improve the legislative system, Establish a special law for REITs, In the context of the legal system has set up a special law, to ensure rapid and healthy REITs development.

(2) Protection of housing construction projects with the construction of the characteristics of mass, The use of new technologies such as residential construction industry, Protection of housing construction to further reduce installation costs, Enhance the Indemnificatory apartments rate of REITs in the market to attract[7].

(3) by optimizing the Indemnificatory apartments structure,Can be divided into priority and secondary revenue beneficial right, ordinary retail investors gain the right to priority, Subscription revenue the government the right to sub, This will not only improve the Indemnificatory apartments REIT's credit rating, And enhanced protection of the market competitiveness of the Housing REIT.

(4) It need to train a number of positive features of both the master real estate field, And financial knowledge to understand the compound talents. At the same time the practice of using the work of protection of housing REIT, To fully carry out the business to provide personnel reserve REIT.

(5) At present, China in the property transfer tax, rental business tax, income tax and other revenue to carry Indemnificatory apartments and there are still some contradictions in REITs, Therefore, the government departments should improve the speed of the Housing REIT to promote stable of China's protection, in order to protect our Indemnificatory apartments construction work carried out smoothly.

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On the Opening of Excellent Course Online Teaching Resources

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Abstract. Construction of online resources is an important content of excellent courses. This article analyzes the present situation and existing problems of the opening of online education resources, and basing on the features of online education resources, it also put forward the basic measures and channels of the opening of online education resources. Enhancing excellent course teaching, net-site creating skill as well as teaching staffs developing, reforming curriculum system as well as teaching contents, applying the advanced teaching methods and means and establishing an effective encouraging and evaluating mechanism are the guarantee of the opening of excellent course online education. By integrating the practicing of our school's construction of the province-level excellent courses of Automatic Control Principles, the papers introduces some measures that our school takes in the construction of special excellent courses. Introducing online resources construction experience and practices of school excellent course. Including the website construction and development, network resources construction, science research promotes the teaching contents etc.

Keywords: excellent course, online resources, opening.

1 Introduction

The modern university is different from the traditional university, yet this division is not obvious at present. Modern university under the information technology environment has a feature of opening up and internationalizing. The project of excellent course constructing implemented by the China Ministry of Education is symbolized by its opening of course teaching resource, realizing the sharing of resources and aiming at improving teaching quality. At present, in other countries, American Massachusetts Institute of Technology is most typical on opening up its course resources to the whole world; the second one is England's "opening learning project". Massachusetts Institute of Technology began to open all its undergraduate and postgraduate course material since 2001, offering all the learners all over the world a free applying, that is "Opening Course Web" (MIT OCW), which aroused a great reaction of the world.

The course materials opened by MIT includes: teaching outline, teaching plan, homework, exams, reference books, classroom handouts, learning material, lecture course kinescope and so on. At present, there are more than 700 online courses, including MIT's 33 subjects as well as that institute's 5 colleges' resources [1].

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Our nation's online education is at a state of rapid development, and many universities have their own online education resources. At present, our country has already had 7 state-level excellent courses of Principles of Automatic Control. And among them, Northwest Polytechnical University's state-level excellent courses of Principles of Automatic Control have the richest resources. It has realized the whole course online education and provides a large amount of extension material.

2 The Characteristic of Online Education

As the opening up of global online education resources, the traditional higher education is under deep reforming in the environment of information technology. The development of modern science technology and the global environment of huge information resource, formed by internet communication and multi-media skills, change teachers' status of the sole information source. Students have channels to receive knowledge broader and quicker, they can take in new knowledge in the same-phase as the teachers do, thus provide a good condition for the opening of excellent course resource. The establishment of excellent course is mainly embodied in the construction of online resources. These include a certain teaching contents and online teaching assistance environment that are formed on some teaching objects and online teaching strategies, the distance that teachers and students are separated on the space. They have the following features:

2.1 Information Transferred from Afar

Internet is a huge net that connect with every corner of the world. It breaks the restrict of time and space, and learners can acquire teaching information from the internet.

2.2 The Interaction of Teaching

Through the internet, teachers and learners can exchange information timely. This for one hand benefits learners' studying, for another hand, it is good for teachers' teaching, making the mutual promotion of teaching and learning, arriving a good teaching effect.

2.3 The Sharing of Information and Freedom

The sharing of internet resources makes students to take up teaching resource to the utmost and broaden their horizon. Learners are not limited by the course time and teaching schedule, they can autonomously decide their learning content and learning plan according to their own situations. Learners share all kinds of information knowledge resources with the teachers, the teaching concept of time and space have changed in the nature and learners can solve problems from the internet.

2.4 The Time-Effectiveness of Teaching

In the online education resource, the teaching information that learners receive from the internet could be both real-time and non-real-time. For one part, it benefits learners to accept learning knowledge timely; for another part, it allow learner to repeat information which assure the learning effect, so it has very strong time-effectiveness.

3 The Existing Problems of the Constructing of Excellent Course Online Resource

The final users of excellent courses should be university students. At present, most of the school excellent courses are the declared courses, students can not obtain enough learning materials from it, and further more, some courses have poor quality, and thus, there are still some questions of the opening of excellent online education courses as well as their classroom teaching effect that need to have further discussion [2]:

3.1 Resource Construction Lacking the Direction and Teaching Theories

The construction of resource lacking the direction of advanced teaching theories. Teachers do not escape from the traditional education concept of "teacher-center". Online resource is the republication of book and the extension of traditional face-to-face teaching, the resource construction becoming the moving of classroom, lacking the organization of media and the related knowledge points as well as lacking of the concept of course design.

3.2 Strengthening Skills While Neglecting Course Content

Because there are more representation forms of online teaching resource, when developing online courses, some teachers spend too much time on the making of tools and web pages, while they just neglect the strengthening of the real important course contents, the teaching contents and internet technologies do not become rally mutual optimizing.

3.3 Courses Contents Lacking Mutuality

In long time, students has been used to the traditional teaching model of "teacher instructing while students listening", when they come to face the online education resource with huge completed information, their ability to distinguish, acquire, process and conform information are relatively inadequate. This not only affect

the learning effect, but also make student lack of cognition ability and operation ability for teachers and students are separated in space and most of the time students face only the fictitious online learning environment.

3.4 Lacking the Monitoring and Evaluating Mechanism

Lacking the monitoring and evaluating mechanism of the construction of teaching resource. At present, the construction of online education resource is at a state of out of order, when organizing the construction of resource; people only pay attention to the quantity yet neglect the quality. Quality is the key factor that decides whether the opening courses resources can be generalized and persistently developed. The popular fault of online education is that it lacks of the contents monitoring. So an effective education resource evaluation mechanism should be created, so as to enhance the science and authority of evaluation result, and to formalize resource construction behaviors.

3.5 Available Resource

On the aspect of "available resource", 10% of the courses websites provided by some national excellent course websites could not be browsed, in some visible websites, they need user name and pass words that provided by the authority to have further browse, and some resource only can be available within school's IP, these bring a lot of inconvenient to the users, and lower the availability of open resource as well as its usability. By comparison, the usability of America and England's resource is high, except some personal blogs that provided by teachers can not be entered; they almost have no any situation of "out of service" [4].

4 The Construction of Opening Excellent Courses Online Education Resource

4.1 The Excellent Courses Websites

The excellent courses websites must be the dynamic form, thus convenient for the consistent construction of the courses. To create good quality excellent courses online education courses and resource, we have to, according to the features of online education resource, strengthen courses team construction, pay high attention to the reform of teaching content and curriculum system, pay special attention to the use of advanced teaching methods and means, the use of solid teaching book and the construction of digitizing learning resource, provide excellent learning supportive service, create effective encouraging and evaluating mechanism and so on.

4.2 Implementing Open Resource Center Construction Project

Teachers and students can work together to create resource center, making more ways to enrich the education center, enlarging education facets and really making the education resource open and mutual shared.

4.3 Provide a Powerful Exchanging Platform

To open the excellent courses resource, courses websites must provide a powerful exchanging platform. Excellent courses online teaching aims at the end to provide students excellent teaching content and implement teaching activities under the internet environment, so in the construction of excellent courses websites, we have to consider constructing a better mutual exchanging platform, to realize the mutual learning exchanging function by creating the modules of online communication, problems-solving et al.

4.4 Websites Must Be on Good Conditions

The websites of excellent courses must be always on good conditions. The websites of excellent courses are mainly for students' study and the communication between different universities, so excellent courses websites will not change their importance in different stages, if the internet is not workable, the excellent courses will just loss its significance of existence.

4.5 Developing Solid Teaching Book and Digitize Learning Resource

Combining the construction of excellent courses websites, we can learn from other universities' experiences of developing solid teaching books, creating solid teaching books of integrity design with harmonious multi-media combination. At the same time, we should provide digitize learning resource that correlate with teaching contents, and be richness, multi-forms and adjust to the standard form. Courses websites should open the digitize learning resource of excellent teaching syllabus, online courseware, teaching plan, exercises, applying teaching instruction, reference books and so on, so as to realize the conformity and sharing of excellent education resource [5].

When we are constructing the province-level Principles of Automatic Control excellent courses resource, we adopt the double measures of developing and bringing in. The core body of courses websites are designed by teachers, thus the websites have their own features. But if all the contents are developed by ourselves, they will not reach a relatively high level. Besides, teachers' power is limited, thus we may, by the ways of learning and bringing in, applying other universities' existed results and courses resource, such as multi-media course ware, Flash and so on. For example, when we are constructing Principles of Automatic

Control excellent course, by deliberation, we brought in Wuhan Polytechnical University's automatic Specialty Conspectus' multi-media course wares to enrich course websites resource. We consider we are making creation on the overall use of the open external online resource. The benefits of making website by ourselves is are that when we need to make reform to the teaching contents or to make some revision, it is very natural and adaptable. The Principles of Automatic Control excellent courses websites developed by us opens a part as postgraduate exam direction content. By the direction of taking part in postgraduate exams, students' interest is aroused, at the same time, it deepen the teaching contents. The websites provide teaching direction, the knowledge points of all chapters, the difficult points and key points, example exercises solving, MATLAB simulating experiment platform, exams centers and so on. The websites apply a lot of excellent pictures, making it rich in both pictures and letters and to form a friendly operation system. The open resource on the websites provide a lot of tests and exercises, and ensure that every exercise (including the exercises for postgraduate enrollment) be offered reference answers, thus to enhance students interest and activity of using internet for learning.

5 Conclusion

The construction of excellent courses change the teaching concepts, education models, teaching methods, and excellent courses websites can directly, really reflect the dynamic changes of teaching process. The making of excellent courses websites can make many excellent education resource and teaching experiment be transferred to teachers and students through internet, thus realizing the sharing of excellent education resource and become the power of promoting higher education development.

Acknowledgment. The authors thank to the reviewers of this paper for their reviewing works and support from Research Funds of North China Institute of Science and Technology and Educational Commission Foundation of Hebei Province of China (Z2006439).

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Concerning the Normal Curriculum Settings and Training Mode Innovation

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Abstract. A qualified teacher need specialized training for teachers' professional skills, teacher training should focus on "normal characteristics". Our school has to strengthen the professional skills of teachers to innovate the teacher training mode, by enhancing practice in the curriculum, strengthen the ethical culture and teaching ability training, Increase the proportion of teacher education courses, outstanding teachers "professional"; strengthening teachers' professional skills, outstanding teaching "practicality"; make full use of modern educational technology features, outstanding service a "technical"; provides students with a comprehensive range of technical services, outstanding training "autonomy" and other means to have achieved remarkable results. Students' teacher professional identity noticeably enhanced professionalism and ability to teach has improved significantly. Graduates of our school were welcomed by primary and secondary schools.

Keywords: normal colleges, curriculum setting, cultivating mode, professional skills, normal characteristics.

1 Introduction

Our school was established in 1931, it has been engaged in the in-service teachers' training for 80 years. Since 2000, it began to assume the primary and secondary school teachers in pre-service training tasks. In more than 10 years of primary and secondary school teachers in pre-service training model in practice, our school to give a "normal characteristics" with a focus on innovative talents training model. We develop professional skills of teachers as a value-oriented. Increase the proportion of teacher education curriculum, and strengthen the professional skills of teachers, and make full use of modern educational technology services; student learning offers a full range of technical services and other means to have achieved significant results, enhances students ' sense of professional identity, improve literacy and educational ability in students. The curriculum and training model reformation has achieved the desired effect.

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2 On "Normal Characteristics" Oriented Innovative Teachers' Training Mode of Necessity

Since the 1950's to establish independent teacher education system completely, our teacher education has existed "normal characteristics" and "academic characteristics" controversy. In my view, a teacher-training college for primary and secondary school services, we must highlight normal.

2.1 Highlight the "Normal Characteristics" of Teacher Education Reform Is the Policy Regulation

Teacher education reform must be based on teacher education policy in China, running patterns of teacher education and professional requirements for teachers. Thus, as undertaken tasks of primary and secondary school teachers training, the normal colleges must clear the outline of national medium and long term educational reform and development plan (2010-2020)[1] (hereinafter referred to as "the outline") on the reform of teacher education: "Strengthening of teacher education, deepen the reform of teacher education, innovation in training mode, enhanced practice, strengthen the ethical culture and teaching ability training, improving the quality of teacher training." The outline requirement is actually a normal College curriculum and training mode to highlight the "normal characteristics" policies and regulations.

2.2 Highlight "Normal Characteristics" Is Normal Colleges' Goal Request

The normal colleges are the specialized agency to cultivate primary and secondary school teachers. "A qualified teacher needs a professional training, for normal colleges students it is necessary to further strengthen education specialized training."[2] We must reform teacher professional training mode, according to "the outline" requirements based on teachers' professional ability training as a breakthrough, highlights of university curriculum and training mode.

The normal colleges are teaching to foster practical, primary and secondary school teachers, it should also focus on "normal characteristics". "The 'normal characteristics' is main solution the 'how to teach' problem, it is teachers' professional thought, and ethics, and behavior specification, and professional literacy and professional skills, aspects in school education science and various activities in the concentrated reflect, it is the teachers education difference other professional education of nature property and particularity is located. ”[3]

2.3 Highlight the "Normal Characteristics" is the Teacher's Professional Needs

Professionalization is the "teachers are fulfilling responsibilities of professionals in education and teaching" laws and regulations with Teacher Law. Teachers should have received specialized training, and have a high professional quality of education professionals. Training with a professional level of teachers has become the goal of the reform of teacher education. "For a long time in China Normal Colleges because of the emphasis on academic, overlook the characteristic of teacher education, the normal college graduates does not want to be teachers, also a lack of vocational training in operational capacity. Therefore, the new mode should be used to train teachers in the future. "[4] As teachers training as the main task of the normal colleges, must be based on teachers' professional needs of innovation model.

3 Reform of Normal College Curricula and Model Practices

Normal College's main task is to train qualified teachers in primary and secondary schools. Our reforms highlight the training mode "normal", "practical", "technically", "autonomy". To comply with the quality of primary and secondary school teachers on curriculum based on the needs.

3.1 Increase the Proportion of Teacher Education Courses, Stressing the "Professional"

Highlight the "professional" share of the main approach is to strengthen teacher education courses for students lay a good foundation of teacher quality. Teacher education courses from theoretical courses (20 credits) and practical courses (30 credits) two modules. The teacher education practice curriculum is divided into practice teaching, autonomous practice and guiding practice in three parts.

3.2 Strengthening Teacher's Professional Skill Training, Highlight the "Practice Characteristics"

Students only in the recurrent practical training can be familiar with professional skills. Therefore, the training of students must be strengthened "practical". Training doctors like "clinical experience" training teachers of "classroom experience". We have a substantial increase in the proportion of teacher education courses. Opening of practice teaching (11 credits), independent practice (5 credits), guiding practice (14 credits) three practice courses, aims to develop students' ability to practice skills.

3.3 Make Full Use of Modern Educational Technologies Feature, Highlight "Technical Characteristics"

We make use of modern educational technologies to build online teaching resources and management platform. Course of lectures will be more than 100 video placed on the platform. Students can choose courses through the network, and arrange learning time and learning processes independently. Student learning problems can be posted online in the discussion. In order to ensure the learning experience, each course is building an online question bank. Student exam can apply for online examination in the exam room within an exam week. Through the use of modern educational technologies that not only facilitates student learning, has also been a significant reduction in the teaching management and the workload of teachers.

3.4 Provides a Full Range of Technical Services, Highlight the "Autonomous Characteristics"

In order to better serve students ' self training services, we make full use of modern educational technologies automation services, and provide "round-the-clock and self-service" for the students. The so-called "round-the-clock services" refers to laboratory equipment is open all the day; students would be free to laboratory training. The so-called "self-service" contains the following three areas: One is the pilot project initiative. Students according to their own needs independently selected pilot projects. Second, they can autonomous control experiment. Third, the students' can independent improve training effect. Experimental procedure can instant video recording, replay, continuous improvement, until they feel satisfied.

4 Epilogue

Last 10 years, our school has been committed to the primary and secondary school teacher training model, to strengthen the professional skills of teachers as a breakthrough, by enhanced curriculum internship practice, strengthen the ethical culture and teaching training innovation in teacher training model. Take increased teachers education courses proportion, highlights teachers "professional"; enhanced teachers professional skills training, highlights teaching "practical"; full play modern education technology of function, highlights service "technical"; for student provides full of technology service, highlights training "autonomy", and other means to have achieved significant effect. The students ' teachers professional identity sense obvious enhanced, professional literacy and teaching capacity obvious improve. Our graduates are deeply welcomed by primary and secondary schools.

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A Study on University-Industry Cooperation of Engineering Education

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Abstract. China has the largest population of people in the word. Also, it is one of the countries which have the largest population of engineers in the world [1]. China is called a super country in engineering education. Chinese engineering education has achieved great successes in recent decades. However, the quality of engineering education is not very satisfactory. Some measures have been taken to solve the problems. University-industry cooperation is one of the most effective ways to promote engineering education.

Keywords: Engineering education, University-industry cooperation, Educational ideas, Training interns.

1 Introduction

Engineering science technology plays an important role to promote the progress of human civilization. Science and technology is the first productive force, and engineering technology is one of the most important elements. Engineering technology bridges the gap between scientific discoveries and engineering development. It can turn scientific theories into realities which is beneficial to human beings. Engineers and technicians are mainly cultivated by higher engineering education. Higher engineering education plays the key role to a country's engineering knowledge, ability and qualities, especially the engineering innovation. Therefore, a country's level of engineering technician and industrial competitive power are decided by the quality of engineering education.

Also, the quality of engineering education is closely bound up with the engineering projects. With the development of industrialization and higher education, China has the largest number of engineering undergraduates. Statistics show that there are nearly 30 million college undergraduates in China. Nearly 25 percent students are engineering college students [2]. Higher engineering education influences the quality of engineering talents and country's engineering's level. Also, many major and notable engineering projects have greatly promoted the advancement of engineering education, such as China's Manned Spaceflight Project, Three Gorges Project, etc.

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Although engineering education is very important to cultivate engineers, the quality of engineering education is not very satisfactory. The most serious problem is that students' practice ability is weak. A way should be found which can solve the problems of engineering education and provide the engineering education with real engineering environment. University-industry cooperation is a good way to solve problems of engineering education.

2 Establishment of New Philosophy of Engineering Education

2.1 Definition of University-Industry Cooperation

In China, University-industry cooperation is also called production-education-research cooperation or government-production-education-research cooperation [3]. Production and research mean most scientific researches conducted in colleges should be transferred to products, which will be sold in market to make profit. In another word, college's scientific research will be valuable if it turned into products. Education means that the business provides engineering practicing condition for colleges to develop students' practicing ability, for example training interns. The traditional philosophy of engineering education should be changed under the new circumstance of economy and education. University-Industry cooperation on cultivating talents is a subversion of orthodox educational ideas which advocate higher education should be run only by government and colleges. Also, most of enterprises consider colleges' main duty is to cultivate talents, while the business itself is utilizing engineering talents.

In fact, it is very difficult for colleges to should the responsibility to cultivate engineering talents alone. The government has to spend much money to run colleges. In China, there are 4 mainly ways for high schools to collect money: donation, government investment, student's fee and colleges' other incomes. It is very difficult for universities to run colleges, because it faces fund shortage problems and educational resources problems.

2.2 The Enterprises Having the Conditions to Cooperate

University-industry cooperation puts forward a new educational conception: education, especially higher education, is not only the colleges' responsibility, but also the industry's and the enterprises'. The main body of society is mainly consisted by government, officials, enterprises and individuals. With the economy development and society development, the enterprise is becoming more and more powerful and richer. The industry and enterprise benefit not only from their investment, but from the market and society. There is a famous saying by Dale Carnegie: *the man who dies rich dies disgraced.* It is the rich's and enterprise's responsibility to repay society. It is reported that the richest man in China Jiacheng Li and his companies have donated more than 10,000 million HK$ to education in the past 30years [4]. In the past, business is just donating colleges, but not running

colleges together with colleges. With the advancement of technology and economy, some enterprises have gasped the latest advanced techniques. The enterprises have many new equipments and production lions which can provide real engineering environment to engineering undergraduates. Also, some enterprises are doing scientific researches and technical innovations. The business has the capability to cooperate with colleges to run higher education. A new idea of cooperation between colleges and business should be established which encouraging business run college with government.

3 The Content and Ways of University-Industry Cooperation on Engineering Education

3.1 Engineering Innovation under the Traditional Philosophy

Engineering practice ability and engineering innovation are the essential characteristics of engineering education [5]. If college students lack engineering practice ability, only knowing thinking but not doing, their acquired engineering thinking can not be turned into reality. The undergraduates can really develop their engineering ability very well in the workshop. The traditional teacher-centered educational idea does little to invoke students' engineering innovation. For example, engineering training course and experimental course which are preset by colleges the goal of experiment, the assigned equipment and experimental conditions, are helpful for the students to understand theory and do help to develop students' creative ability and initiative consciousness. But the students are impassive to accomplish the teachers' proposition thesis, because their initiative and creativity are not exercised. Actually, students can really develop their innovation consciousness and innovation ability if they exert the dominant role in the practice of engineering education.

3.2 Ways of Cooperation

At present, most of colleges in China strengthen the students' practice ability usually by several means: increasing class hours of training program, establishing engineering training center, offering engineering course and so on. But practice has actually not been implemented in enterprise in most cases, although it is stressed by the training program. Actually, engineering practice in enterprise can not be replaced by practice course and colleges' engineering training center, because only practice in enterprise can students contact real engineering environment and really exercise their initiative. Although undergraduates can be developed very well in enterprise, it is well known that the university-industry cooperation will not be carried out successfully without the governments' guidance and participation in China, because most of enterprises think they benefit little from the cooperation of cultivating engineering talents. They are reluctant to cooperate with colleges to cultivate engineering talents. At present, there are many

ways of cooperation of colleges and universities. The first is colleges cultivating company staffs, mainly is to improve their degrees. Dates show that the person conferred master's degree of engineering has reached about 199,600 since 1997 to 2009 [6]. The second is cooperation on scientific research. The enterprises make full use of colleges' advanced theory to make profit. The colleges' scientific research also needs to be turned into products and profit. The third is training inters for colleges. In the practice, the most common way of cooperation is training talents: the business offering practicing conditions to students and the colleges offering advanced theory to company staffs.

The enterprise has many advanced equipments and real production lines which are very suitable to train engineers[7]. The students' engineering ability will really be developed in the real environment. In the practice, the main way to cultivate talents is training interns for colleges. Yet, there are many practical problems. For example, it is very difficulty for the enterprise to provide accommodation for so many interns. Additionally, there are two "s" problems harassing the industry: the first "s" is safety, namely, the safety of students during the internship. The second "s" is secret, namely the secret of enterprise's technology and patent. Additionally, the interns are not familiar with workshops, machines and industrial technology. The enterprise considers interns do nothing to help company. On the contrary, the company has to do much to help the interns.

3.3 The Content and Soul of Cooperation

The enterprise should take part in higher engineering education in an all-round way, not just training interns. At present, the connotation of university-industry cooperation on cultivating talents is not enough. University-industry cooperation on cultivating talents should not be confined to accepting interns only. There is little cooperation in other aspects, such as drawing up training scheme and teaching plans, controlling and evaluating students' quality, etc. The connotation of cooperation should involve many aspects. In the part of cultivating standard, colleges should set cultivating standards with the industry and enterprise to meet the business' basic demand, following the rules of engineering education. In the part of setting teaching objectives, the colleges and enterprise should draw up training scheme and teaching plans, supervise and evaluate students' quality together. In the part of cultivating period, the college and the enterprise are responsible for the student's study together which is consists of two periods: studying at campus which is mainly responsible by colleges and studying in enterprise which is mainly responsible by enterprise.

3.4 Measures to Be Taken

Engineering innovation and engineering ability is the soul of engineering education. The traditional idea, which considers training interns is the main way of cooperation, should be changed. The following measures should be taken into consideration.

Firstly, the traditional engineering educational idea should be changed under the establishment of new educational conception. Some colleges, especially some prestigious colleges neglect to cooperate with enterprise, which pay much importance to scientific research and misunderstand engineering practice, considering engineering practice as vocational training. Also, the enterprise thinks it benefit little from cooperation on cultivating talents with colleges. To solve above problems, we should propaganda that cultivating talents is the enterprise's responsibility. Of course, college should cultivate undergraduates who have solid knowledge, innovation. Such undergraduates are very popular as gasping engineering knowledge meeting enterprise's true demand and having the ability to take part in practice work.

Secondly, to some colleges and enterprise, university-industry cooperation will not be fulfilled successfully without the government's coordination. The government should issue Law of University-Industry Cooperation, which will settle the problems of university education and engineering education. The law can take some measures to deepen cooperation, for example by reducing or remitting taxes, etc. A Policy has been issued in Beijing, which arranges at least 50 percent technology projects funds to support University-Industry Cooperation. The Ministry of Education has launched a Plan for Educating and Training Outstanding Engineers (PETOE) which plans to establish national and provincial engineering education Demonstrating Center.

4 Summary

PETOE aims to educate more than one million of engineers of high quality in the next 10 years, under which 61 universities have been approved on June, 2010. PETOE aims to establish new mechanism of university-industry cooperation on cultivating talents to solve the problems of cooperation. Actually, students' social responsibility, engineering operation ability, engineering design ability, engineering innovation ability and overall quality will be cultivated and developed very well if they receive engineering education from enterprises and colleges. But there are many problems in the aspect of cooperation on cultivating talents. We should pay much attention and take measures to the advancement of cooperation between enterprises and colleges.

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A Study of the Website Construction of the Translation Course

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Abstract. Constructing the translation course website is a new try that the application of modern educational technology changes the traditional pattern of translation teaching. The paper first gives a brief introduction about modern educational technology and then argues the necessity of the construction of the translation course website. The focus of the paper is on the website construction of the translation course, during which the technical problems needed to be solved firstly are illustrated and then the paper provides the detailed construction of the translation course website via a figure. In addition, the modern study theories hidden in the design of the website construction are also stated. In conclusion it is pointed that the translation website is not only the center of the second class, but the base of the first class, which integrates the first class and the second class closely.

Keywords: website, construction, translation course, application.

1 Introduction

The construction of the translation course website is the application of the modern educational technology, which is the sum total of technical devices and methods taken in human educational activities. Fred Percival and Henry Ellington pointed in *The Manual of Educational Technology* that Educational technology is classified into three interrelated parts: hardware, software and potential-ware. Hardware means technical equipments and correspondent teaching system; software means textbooks designed for the application of the hardware; potential-ware means theoretical conceptualization and the study results of the relevant disciplines. The present study includes all the elements: the application of the technical equipments and the formation of teaching system, teaching contents and systematic idea and modern studying idea governing the design of the website.

2 The Design of the Translation Course Website

Translation course is one of the core lessons in English major which cultivates technical ability. The aim of the course is to train the students' ability in translation and interpretation for their future career. Constructing translation course website is a new

L. Zhang and C. Zhang (Eds.): Engineering Education and Management, LNEE 112, pp. 501–504.
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try that the application of modern educational technology changes the traditional pattern of translation teaching.

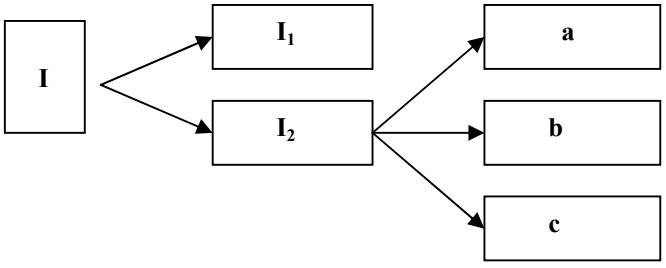
2.1 Technical Problems

If the independent translation course website is built, the cost is quite high, and many things will be involved which need coordinating, thus the complexity which is not good for teaching will distract the teacher's energy. The campus-net is developed and goes well, which is managed and maintained by the specially-assigned person. In addition, the students like to surf the campus-net for news. Also, Bb teaching platform has been put on the campus-net and the foreign language autonomous study website is also on it. Therefore, the technical problem can be solved easily. That is to make a full use of existing equipments and resources so as to reduce the complexity of constructing website. Depending on the campus-net, the translation course website is built, which has its own site and become an independent passageway from which teachers and students can have a distant communication.

2.2 The Website Design

The website design has an enough consideration of technical factors and teaching theories. The contents on the website are generally classified into two kinds: the contents contained on the website (mother website contents) and chained contents to be illustrated as Fig. 1. For the student's convenience of use, the home page shows all the operational menu tabs which are in three classifications: tabs clicked to word materials, tabs clicked to multimedia materials, tabs clicked to chained websites. The tabs clicked to word materials are for home page, course introduction, syllabus and materials, teaching manuals, teaching methods and devices, practical teaching, exercises, references, construction program, teaching assessment, features and policies; the tabs clicked to multimedia materials are for teaching staff with pictures, teaching videos, courseware, autonomous study website, Bb platform; tabs linked to chained websites are for linkage of ten relevant university and college websites.

Apparently the translation course website is a static passageway for utilization of the study materials, but in fact, it is a footstep into the dynamic WebPages, which takes a technical use of the existing recourses, from static into dynamic. Every tab is clicked with different WebPages showed. When the autonomous study website tab is clicked, online communication and left messages can be done; Bb platform tab, assignments can be submitted and discussions done, ideas for certain topics given. When one of the tabs linked to chained websites is clinked, one of the ten universities and college websites can be entered for awareness of the university or college.



Formation of the Translation Course Website

Fig. 2. I=translation course website; I1 = mother website contents; I2 =chained contents; a= autonomous study website; b=Bb platform; c=relevant university and college websites

3 The Modern Study Theories Hidden in the Design of the Website

The design of the website takes the new constructivism and cooperative studying theory, and modern communicative theory as guides. In the conceptualization of the translation course website construction, the principals of leading role, cooperation, encouragement are followed, and the study gets down from providing good studying environment and the studying process, and the core is "the student development". The information transmission and communication between students and students, teachers and students goes through the study, which can uphold united and cooperative spirit and promote the students' active participation and practical experiences. The group members help each other, learn from each other, and evaluate each other, which promote the process of the students' active exploration and participation. It is expected that the students' translating skills will be improved in the multidimensional communicative activities via the translation course website.

4 Conclusion

With the advancement of times and open educational concept, the student-centered teaching thought is more and more favored by the teacher in modernized language situations, which is much easier to realize with the aid of the modern educational technology. The teachers of the translation course have had a brave try and exploration of teaching methods and devices, with task-assigned method, explorative method, case-centered method, enlightening method and discussion method replacing the dull theory instillation and mechanical training in class aided by educational technology, which benefits the students for the improvement of their abilities in discovering problems, solving the problems and doing research. The translation course website serves students for their autonomous study and teachers for making up the constriction of the class teaching. The students can know the basic contents, training scheme and program of the course. The translation website is not only the center of the second class, but the base of the first class, which integrates the first class and the second class closely.

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Intellectualization Projection Pursuit Regression Model Used in the Water Demand Forecasting

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Abstract. In order to solve some actual problems in water demand forecasting such as non-linearity, high-dimension and so on, though analyzing traditional genetic algorithm (GA) and particle swarm optimization algorithm (PSO)'s advantages and disadvantages in the optimization process, the PSO-GA hybrid algorithm this is researched and carried on the coupling with the projection pursuit regression model based on Hermit multinomial to optimize the best projection direction. Thus an intellectualization projection pursuit regression model is established and used in the water demand forecasting of Tangshan City. It is showed the model is reliable, the forecasting precision is quite high, and it is applicable in the water demand forecasting.

Keywords: Genetic Algorithm, Particle Swarm Optimization, hybrid algorithm (GA-PSO), projection pursuit regression, water demand forecasting.

1 Introduction

The water demand forecasting related to many aspects such as social, economic, demographic, technological advancement and so on; And there are complex interactions and causal relation between the internal factors. Some methods of the traditional water demand forecasting such as quota method, time sequence method and grey model significant limitations. With the rapid development of computer technology, some new methods had been introduced in the water demand forecasting, such as artificial neural network and support vector machine (SVM)[1] etc. The new methods obtained the widespread attentions because they overcome the deficiencies of traditional methods to some extent. However, although to some extent, these methods have made progress, and improved the prediction accuracy, but there are also disadvantages. For examples, the model generalization ability is very weak, the convergence speed is slow and many algorithm parameters on influence performance are difficult to establish and so on.

Projection pursuit (pp)[2] is a statistical method which is used for analyzing and processing of non-state high-dimensional data. It is widely used by the international statistical filed in recent years. The basic idea of projection pursuit is that though projecting the high-dimensional data in accordance with the direction of

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some low-dimensional subspace, we can analyze the structural characteristics of the original data with projection index function, and find out the projection index function's best projection value to achieve the purpose of analyze high-dimensional data. Therefore, according to the above problems existed in the water demand forecasting, in order to reduce the dimension of feature space, while retaining the required identifying information, and to solve the return problem of high-dimensional space, this paper will do some research on intellectualization projection pursuit regression model to solve the actual problems of region water demand forecasting, such as nonlinear data and high dimension.

2 Intelligent Optimization of Projection Pursuit Regression Model

2.1 Hybrid Intelligence Algorithm (GA-PSO) Based on Genetic Algorithm and Particle Swarm Optimization

The Particle Swarm Optimization (PSO)[3] is based on the information sharing mechanism, and achieves the fast search of the solution space through the particles self-learning and individual learning to the best way. As the Particle Swarm Optimization has the advantages of less adjusting parameters, fast convergence speed and easily to realizing, and it also has profound intelligence background, it is appropriate for both scientific research and engineering applications. However its disadvantage is that the diversity of particles decreased rapidly and prone to premature convergence, and poor local capacity in the latter part. The Genetic Algorithm (GA)[4] has good convergence and strong adaptability, and is particularly suitable for handling complex and non-linear problems which is hard to solve by traditional search methods. Also, because of its scalability, it can be easily combined with other algorithms. However, as the use of the feedback system is not enough, when solved to a certain extent, it often do a lot of inactive redundant iteration, so the solving is low efficient.

The hybrid intelligence algorithm(GA-PSO)[5] in paper is combine the Particle Swarm Optimization and Genetic Algorithm, making pairs of particles can exchange information by introduce the genetic algorithm crossover operator to the Particle Swarm Optimization, so that the particles can have the ability of flying to the new researching space. At the same time it introduces the mutation operator of genetic algorithm to PSO to enhance the PSO's ability of jumping out of local small, and this will improve the problem of premature convergence caused by single search mechanism. Therefore, the hybrid intelligent algorithm takes the advantages of the two algorithms, and overcome their disadvantages, and use the PSO`s parallelism, memory capacity and good global optimization ability to avoid falling into local optimum. Also it draws on the evolution ideal of the genetic algorithm and use crossover and mutation operator to carry out local optimum, which can get the global optimal point. So the hybrid intelligence algorithm is better than GA in time efficiency and better than PSO in efficient

and exact on solution. The concrete steps of hybrid intelligence algorithm is to see the chapter2.3, step1-step5.

2.2 The Principle of Projection Pursuit Regression Model

In PPC, in order to avoid large function tables, and guarantee the accuracy of fitting, variable-order and orthogonal Hermite polynomial is used to fit one-dimensional ridge function. Its mathematical expression is:

$$h_r(Z) = (r)^{-1/2}\pi^{1/4}2^{-(r-1)/2}H_r(Z)\phi(Z) \tag{1}$$

Where: r is order of polynomial; $Z = \sum_{j=1}^{m} \alpha_{kj}\chi_j$, $Z = \phi(Z)$ is standard Gaussian function, $\phi(Z) = \frac{1}{\sqrt{2x}} e^{-\frac{x^2}{2}}$; $H_r(Z)$ is defined by the recurrence relations: $H_0(Z) = 1$, $H_1(Z) = 2Z$, $H_r(Z) = 2(ZH_{r-1}(Z) - (r-1)H_{r-2}(Z))$, so R-order Hermite polynomial can be written as: $f = \sum_{r=1}^{R} c_r h_r(Z)$, C_r is the coefficient of Hermite polynomial; When using R-order Hermite polynomial is used to approximate the kth function, Projection pursuit regression model is expressed as:

$$\hat{y} = \sum_{k=1}^{p} \beta_k f_k(\sum_{j=1}^{m} \alpha_{kj} x_j) = \sum_{k=1}^{p} \beta_k[\sum_{r=1}^{R} c_{kr} h_{kr}(Z)] = \sum_{k=1}^{p} \beta_k[\sum_{r=1}^{R} c_{kr} h_{kr}(\sum_{j=1}^{m} \alpha_{kj} x_j)] \tag{2}$$

where: m is the dimension of input space; p is the number of functions; α_{kj} is the kth projection direction in the m-dimensional space, and requires $\sum_{j=1}^{m} \alpha_{kj}^2 = 1$; $\sum_{j=1}^{m} \alpha_{kj} x_j$ is Projection value of observation vector in the kth projection direction; f_k is ridge function in the kth direction, which reflects the relation between the kth projection value and dependent variable y; β_k is weight.

The key of projection pursuit regression model is to select suitable ridge function and projection direction that is optimized with efficient algorithm to get minimum residual sum of squares. That is

$$\min Q = \sum_{i=1}^{p} [y_i - \hat{y}]^2 \tag{3}$$

In the projection pursuit regression model, different projection directions reflect different characteristics of data structures. Optimal projection direction can reflect certain characteristic structure of high-dimensional data as far as possible. In this paper, GA-PSO, combined genetic algorithm with particle swarm algorithm, is used to optimize the best projection direction of projection pursuit regression model.

2.3 Approach of Intellectualization Projection Pursuit Regression Model

Process 1 Determine the forecasted object Y and analysis its influencing factor X. Take the influencing factor X as the input of the model and take the forecasted object Y as the output. On the assumption that we have N groups of observational data, divide them into two parts. Take the former n groups of data as training samples to estimate the model parameter. Take the (N-n) groups of data as testing samples to check up . So

$$X = \begin{bmatrix} x_1 \\ x_2 \\ \cdots \\ x_m \end{bmatrix} = \begin{bmatrix} x_{11} & x_{12} & \cdots & x_{1n} \\ x_{21} & x_{22} & \cdots & x_{2n} \\ \cdots & \cdots & \cdots & \cdots \\ x_{m1} & x_{m2} & \cdots & x_{mn} \end{bmatrix} \quad and \quad Y = \left[y_i \right]_{1 \times n} \tag{4}$$

In the formula, m is the amount of the influencing factors

Process 2 Normalize the input X and the output Y.

Process 3 GA-PSO optimizes the projection direction of the intellectualization projection pursuit regression model.

Step 1 Initialization. We suppose that m dimensions of Vector (α_1, $\alpha_2 \ldots \alpha_m$) compose each particle, namely the projection direction. Set the population size NN. Set the maximum number of iterations maxDT .Evaluate initial positions and velocity of particles at random. Set the learning factors C_1 and C_2.Give the maximum and minimum inertia weight factor maxw and minw. Choose the probability P1 and mutation probability P_0 .

Step2 Evaluation of population. We take individual particles into the projection pursuit regression model, and then calculate the fitness value of each individual in accordance with formula (2), The better the value of the fitness function is, the better the location of the particle is. So we can obtain each particle's personal best position namely pbest , and the group's best position namely gbest .

Step3 Update each particle's position and speed. We will take some particles into the cross-operation by the method of roulette , and calculate the fitness of the crossed particles again. Compared with before, the particles that have better fitness will be the next generation. We will update the velocity and position of the particle of the new generation, according to the renewal formula of the velocity and position in the particle swarm, and it should be considered that whether the updated velocity and position is in a limited range.

Step 4 Determine whether groups stagnate. If the groups stagnate, we will random initialize some numbers of dimensions over again through variation, and keep the best position of the particle swarm in history; otherwise, directly go to step5.

Step 5 Check the end condition. We check whether the number of comparisons reaches the maximum number of iterations, or whether the precision meet the requirements. If it meets the pre-set accuracy, it is convergent, and the global optimal value of the last iteration namely gbest is the best projection direction we seek, so that's the end of optimization. Otherwise, it will go to step2 and continue iteration algorithm.

Process 4 Assign the best position of particle also called optimal projection direction to the projection pursuit regression model. Fit the training samples and forecast the predict samples. Comparing with history data, we will verify the model.

Process 5 Finally, we will predict using the intellectualization projection pursuit regression model.

3 Application Examples

The paper takes use of the intellectualization projection pursuit regression model to predict the water demand of Tangshan, so that we can evaluate the practicability and reliability. There are many factors that affect the water demand. By analyzing the data provided by Tangqin Hydrology Bureau and Tangshan statistical annual, we choose four representative factors which have good correlation: population of water consumption, GDP, field irrigation area, annual rainfall and so on. We choose data 1991-2007 as the samples, take the impact factor as input, year water demand as output, of which the first 14 samples are taken as training set to train the projection pursuit regression model, the last three samples as validation sample set to test the trained model.

After determining the studying samples, rationally determining the projection direction will directly affect the accuracy of the model and the ability of generalization. We use GA-PSO to optimize the projection direction of projection pursuit regression model. We will make fitting calculation many times by adjusting the number of ridge function and the order of polynomial. The paper finally uses one ridge function to fitting with 3 as its polynomial. After several debugging, we choose group size as 40, the maximum evolution number 100, particle vector dimension 4, PSO learning factors C1=1.65 and C2=1.65, inertia weight from 0.9 to 0.4 by linear, choose probability P1=0.5, mutation probability P0=0.1.

When the set maximum iteration number ends, the best projection direction and polynomial coefficients which were obtained from training samples are displayed in the table1.

Table 1. The best projection direction and multinomial coefficients

α_1	α_2	α_3	α_4	c_1	c_2	c_3
0.9882	-0.0492	0.1257	0.0723	-73.5577	44.4072	-12.3555

We take the data in the table into the intellectualization projection pursuit regression model, and predict the water demand of 2005-2007year. We can see that fitted value calculated by projection pursuit regression model and the actual water demand in Tangshan fits well, future trends predicted values and the actual situation is more consistent. The maximum relative error is 5.283 percent, and the average relative error is 1.766% from 1991 to 2004; the maximum relative error is

1.205 percent, and the average relative error is 1.032 percent from 2005 to 2007, which are all less than 5%, predicted water demand can meet the needs of practical application. Thus, when using the model to predict water demand in Tangshan City, we can get the satisfactory result, which has high prediction accuracy.

4 Conclusion

In this paper, GA-PSO, combined genetic algorithm with particle swarm algorithm, is used to optimize projection pursuit regression model based on Hermite polynomial, which can search the best projection direction and polynomial coefficients that can reflect the feature structure of high dimensional data effectively and fast. It shows that the method has some advantages. Meanwhile, the intellectualization projection pursuit regression model is used to predict water demand in Tangshan city, the example indicates that the prediction model is reliable and prediction accuracy is high. From predicted results we can be see that there are some errors, mainly because many factors affect the water demand. To make an accurate prediction, we must have complete information. With the accumulation of information, the training samples will expand and the accuracy of forecasts will certainly be further improved.

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A Report of the Flexible Construction of the Teacher's Personal WebPages and Its Preliminary Application

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Abstract. The thesis gives a report of the flexible application of computer and information technology in teaching to improve the teaching effects and efficiency. It is firstly pointed that technology is the productive force of education. Then the thesis gives a brief report of a case study by the present researcher. Also, in the flexible construction of the personal WebPages, it is argued how the technical problems were solved and how the teacher's personal WebPages were constructed. Lastly the feedback from the subjects and the summary from the researcher are reported.

Keywords: personal WebPages, construction, application, autonomous study.

1 Introduction

Technology is the productive force of education which plays a key role in the advancement of education. The teaching concept, methods and even policies are all influenced by technology. For a long term, the monotonous teaching devices——blackboard, chalk, lecture, decide instillation monitors teaching. With the development of electronic technology in our country, in the late period of the 20th century, audio-visual teaching began to flourish. People's educational thought began to change. Stepping into the 21st century, the productive force of education is further explored, computer and information technology begin to be employed in education. Distant learning is a common practice for the ordinary people. Modern study ideas come into being and govern people's thoughts gradually.

2 A Case Study

Foreign language study involves improving the comprehensive ability of language use. All-round training of language skills labors our ears, mouths, eyes and heads. What's more, language is a tool, and using a tool is a skill. Perfect skill comes from practice. Class time is limited and a lot of practice should be done by the students after class with the guide and supervision of the teacher. Many English teachers have used personal Web pages to help their students' study. But many of them mainly send and receive emails and talk with students via QQ to make

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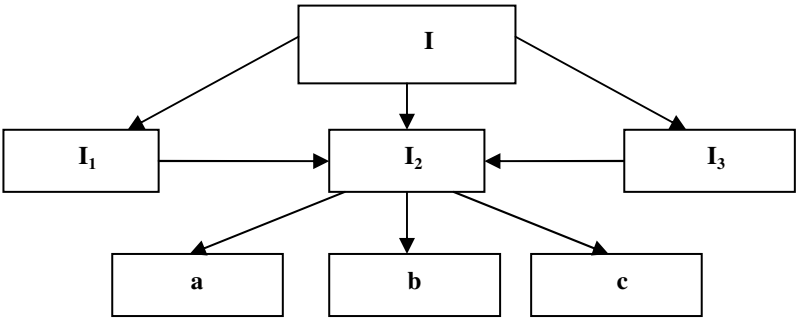
awareness of students' ideological tendency and their needs. Thus the exploitation of personal Web pages lacks in depth and width, and it is not systematic, normative and regular. Therefore, the present researcher takes the students in grade 2009 as subjects(123) whom she taught, taking the personal WebPages as platform to have a deep exploration of the technology. After one-year practice, the personal WebPages have exerted its effects and the students have experienced much from multidimensional aspects.

3 Flexible Construction of the Teacher's Personal WebPages

3.1 Technical Problems

Personal WebPages are convenient and flexible and it is easy to have an account of your own. However, the personal WebPages cannot be altered freely to suit your own needs. This is why some teachers just use them to send e-mails or talk with the students via QQ. Then, the glaring problem is that the personal WebPages are scattered, and apparently they are not in a system. But in fact, they are in a system, too, which escape the people's eyes because their apparent scattered traits. From Figure.1. the connections among the WebPages can be obviously seen .



Connections among the WebPages

Fig. 1. I=QQ account passageway; $\mathbf{I_1}$ = contact list page; $\mathbf{I_2}$ = Q zone homepage; $\mathbf{I_3}$ = email-box page; **a** = the owner's words; **b**=the message board; **c**=QQdiary

From the figure, we can see the personal WebPages are interrelated that construct a recessive system that needs to be discovered the technical connections. In the recessive system, we cannot change the general layout, but we can make a flexible use and add items. Qzone can serve as a center, and the column of "the owner's words" can serve as a notification board; the message board for communication or left message; QQdiary for resources. On the contact list page, communication and submission can be done; Email-box page submission and off-line

communication. With communication and resources, how wonderful platforms the personal WebPages serve as!

3.2 The Concrete Design of the Personal WebPages

Based on the technical analysis of the personal WebPages, the five platforms are constructed flexibly which are independent and interrelated:

The Management and Contact Platform. The students of every teacher may vary in class, grade, and subject, so in order to instruct, inform and contact the individual student conveniently and improve efficiency, it is necessary to form a management and contact platform. The concrete process is to add new general classifications on QQ home page, namely, to classify the registered students users on the teacher's Web page.

The Information Platform. On Q-zone homepage, the first column is the owner's words, which can be adapted for the column with notification, thus the teacher can send notice for all the students, and the information platform is formed.

The Communication Platform. The message board in Q-zone can be made as a communication Platform on which the instant discussion, communication and feedback can be made between teachers and students, students and students. Message board is flexible. The users can make instant communication or leave messages. Teachers can know the individual student' studying, thought, and needs, therefore have timely communication, give individual instruction and solve the practical problems.

The Resources Platform. QQ diary can be further classified, and new classifying choices can be made. Thus QQ diary can be made as a recourses platform on which various materials can be put on it under different items. The added choice column can be marked as: activities files, texts guides, cultural salon, vocabulary enlargement, class videos, assignment exhibition, English bands, TOEFL etc.

The Submission Platform. The students can submit assignment via QQ-box, so QQ-box becomes a submission platform. Certainly the students can also make a submission via off-line files and online files.

4 Feedback from the Students

The 123 subjects, the grade 2009 students have finished their English study in college period. At the end of the term the present researcher asked the students to answer a questionnaire containing 10 questions: Was it convenient for you to surf the Web? Do you like autonomous study via the personal WebPages? How often did you use the resources on the personal WebPages? How often did you use the message board? How often did you use email-box? In which way did you like to submit your assignments? Did you like group work? Did you like the three plays

performed in class by some of you this term? Would you like to be involved in the resources construction of the personal WebPages? Do you have suggestions for the personal WebPages used for English study?

The questions aim to investigate how many students like the modern way of autonomous study and how to improve it. After the analysis of the questionnaire, the results come out as the following:

As for the first question, the 75 percent of the students responded as "convenient"; the second , the 81 percent as "like"; the third , the 72 percent as "often"; the fourth, the 69 percent as "often"; the fifth, 77 percent as "often"; the sixth, 70percent as "online submission"; the seventh, 89percent as "yes"; the eighth, 95percent as "yes"; the ninth, 83 percent as "yes"; the tenth, 63 percent offered suggestions.

From the results, it can be concluded that the construction of the teacher's personal WebPages is generally beneficial to students. The preliminary application of the personal WebPages is quite successful. Most of the students tend to accept this kind of modern autonomous study based on the Personal WebPages.

5 Conclusion

In our country, with the development of the standard of people's life and technology, computers have become the necessities, which provide the material foundation for the application of computer and information technology resulting in the productive force of educational force. In the present researcher's study, she experienced the changes that took place after the students were inspired to use the teacher's personal WebPages for their autonomous study: the class efficiency and the awareness of participation of the students had been glaringly improved. Certainly, there are many things needed to be made better. However, this kind of flexible construction of the teacher's personal WebPages is original and practical for the application in education.

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Case Teaching Method in the Application of Microeconomics

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Abstract. Many students have the complicated feelings to Microeconomics, which need strong logics and the relevant basic mathematics. This paper discusses the practice and application of case study during the micro-economics teaching process. After provoking five principles of choosing the cases, such as typical, realistic, targeted, freshness and continuous, this paper gives the examples as many as possible, such as a sample of that the main three relationships between d demand curve and D demand curve are similar to adults find for mates, to point out there are at least two ways to improve learning interest for students, one is that the teachers provoke the cases and the other is that teachers encourage students to search for cases actively and initiatively, which can assist students to understand and grasp the concepts and principles of economics, so as to achieve the desired teaching objectives.

Keywords: Case Teaching Method, Microeconomics, Case Selection Principle, Compared Analysis.

1 Introduction

As the core course of economics and management designated by the Ministry of Education, economics is very popular in the various specialized financial institutions and non-professional financial institutions. Especially microeconomics is the first profession major for most financial students. Due to needing strong logics and the relevant basic mathematics, many students have the complicated feelings to studying microeconomics. Therefore, how to improve learning interest of student in layman's language teaching is that every teacher must face the problems of economics. Case teaching is an effectively way to solve these problems.

2 The Practice of Case Teaching in the Teaching Process of Microeconomics

Case teaching method refers to the teaching method of leading students to discuss the situation through the description of a specific situation, which was firstly used

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in the legal community by Professor Randall in 1870, the Dean of Law college of Harvard Business School (HBS)[1]. It includes the methods of team discussion, role playing and case writing. UNESCO had done an extensive survey of multinational experts, found that compared to other eight kinds of teaching methods, such as classroom lectures, seminars, etc, case teaching method won the top one in the six combined effects of imparting knowledge, analytical training, attitude change, improve interpersonal skills , acceptance and knowledge retention force[2]. HBS pointed out the knowledge resources are from teachers, students and the student himself, and the studying contents are declarative knowledge and procedural knowledge, and the studying effects can be divided into nonprogrammer decision and programmed decision [3].

2.1 The Principles of Case Teaching Method

Firstly, the cases should be typical. The cases should reflect the nature of things, prompt the development of law. According to the representative case, students are able to "glimpse see the whole picture." For example, we can use the case of the family history of the oil magnate John D. Rockefeller to introduce the concept of market structure.

Secondly, the case should be realistic. Only the true and complete case can give the students a deep impression and understand the economic concept clearly [4]. The students can impressed the mechanism of the perfect competition market and imperfectly competitive markets after they know the whole process from bank clerk to oil magnate of John D. Rockefeller.

Thirdly, the case should be targeted. We should fully consider the students are the object of teaching, so the cases should be close to the actual situation of students, especially the things similar to their life and studying as much as possible. For example, the difference of cinema prices between city CBD and college can be quoted to explain the concept of price discrimination.

Fourthly, the case should be freshness. Some hot topics should be introduced to classroom teaching. For example, we should organize students to discuss the classic problem of 'Low grain price hurts the farmers' combined with the front drought and later flood in 2011, and discuss externalities combined with nuclear radiation of Japanese earthquake in March 11th 2011.

Last but not the least, the cases should be continuous. The feature of multischools of economic system decided that there is no standard answer of most economic problems. The students can have a clearer understanding to a certain problem with the improved process of his economic knowledge. Therefore, we should choose the cases with the principle of sustainable development, so that can effectively capture the attention of students and enhance their analysis ability. We can encourage the students compare the high price of garlic in 2010 and the low price of garlic in 2011 with economic knowledge.

2.2 The Practice of Case Teaching Method

There are mainly two ways of case teaching from the angle of objects provoked cases.

The first one is the teachers provoke cases. It's very necessary to provide students a continuous and actual case environment. For example, we learned that students spent 400 RMB a month on the diet according to Q & A in the first class of microeconomics. So in the follow classes of the term we can assign the income equation I of the budget constraint of consumers is 400 RMB. 400 RMB can also be induced to the basic and important concept – elasticity. Price elasticity of demand refers to the rate changing of demand with per change of demand fluctuation.

Most students should balance 400 RMB either go to canteen in the school or go to restaurant outside. After the embarrassed choosing, the students can understand that the lower his budget is, the higher rate of going to canteen in college is, that is to say, the fewer the convertibility and choosing zone is, the fewer the elasticity is.

The comparing analysis of case teaching can be used in the explanation of d demand curve (short for d-c) and D demand curve (short of D-c), which belongs to the theory of monopolistic competition and is the emphasis and difficulty in the microeconomics.

Due to the monopolistic competitors provide the different and alternative products, each manufacturer faces with two demand curves. The d-c refers to the product differentiation and embodies the monopolists of industry. On the contrary, D-c embodies the substitution of product and embodies the competition of industry.

The main three relationships between d-c and D-c are as follows: firstly, the change of market price will make d- c shift up and down around the D- c of the single monopolist when all the companies of the economic group shift the prices in the same way. Secondly, the intersection of d-c and D-c refers to the equal status between supply and demand in the monopolistic competitive market. Thirdly, the elasticity of d-c is stronger than that of D-c.

The main three relationships between d-c and D-c are similar to adults find for mates. Here is the suggestion, a lady wants to find a mate and there are many ideal roles for her, these roles are similar to the demand of price. With the development of time, she will find that there is nearly no perfect mate. Therefore, she has to debase her mental expectation around her ideal mate. When the real situation and ideal intersect together, the match is successful and she will feel happy.

The second method of case teaching is to encourage students to search for cases actively. The self-study and teamwork are the basics of case teaching, and it will let along the effective discussion without these two elements [5]. Meanwhile economics are around us everywhere and the key is to encourage students to discover them. In the actual teaching process, the students can be divided into several groups, to increase communication between students, lead students to think about economics around the phenomenon, to enhance students' interest in learning and improve teaching quality. Still using the contents of elasticity as the example, the divided groups think out what goods in their life belong to high elasticity, inelasticity, unit elasticity. After the discussion, every group chose a representative to illustrate their opinions on the five categories of elasticity. According to their

illustration, the discussions can be organized between groups. During these inside and outside group discussion, the teachers can get a general acquaintance the degree the students grasped about the concept of elasticity, we called this section the feedback and summary, after the whole process from discussion to feedback and summary, the students can get an impressed memory to elasticity and understand its concept more clearly. According to the actual practice to 211 students, the cases provoked by the students themselves are as shown in table 1.

Table 1. The Categories and Cases of Elasticity

Ed	elasticity explanations	cases	illustration
$E_d>1$	High elasticity	Limo, hairdressing	Luxury ,make what is good still better
$E_d<1$	Inelasticity	Public bus, haircut	Necessity
$E_d=1$	Unit elasticity	Public rental house	Correspondence
$E_d=\infty$	Perfect elasticity	Illegal taxi at the school gate	Only unlimited supply in a specific price
$E_d=0$	Perfect inelasticity	Insulin for diabetes patients	The particular one

3 Summary

On the whole, with the principles of choosing typical, realistic, targeted, freshness and continuous cases as much as possible, there are mainly two ways of case teaching methods to effectively improve student interest in learning and grasp the concepts and principles of microeconomics very well. One is the teachers provoke cases. It's very necessary to provide students a continuous and actual case environment. The other one is encouraging students to discuss and do comparative analysis of economic phenomenon together with teachers, after the whole process from discussion to feedback and summary, the students can understand and grasp the concepts and theories very well.

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The Preliminary Study of Improving the Efficiency of the Government Crisis Management—Giving Recommendation and Inspiration from the Ways of Dealing with Crisis Management of Two Countries between China and Japan

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Abstract. Since the beginning of 21st century, huge disasters occurred frequently, and Asia is the most serious region where the casualties are accounted for more than 80 percent of the world. Facing the paroxysmal disaster, the level of the crisis management of the government determines the deficiency of the rescue. Though China and Japan are one of the most earthquake prone countries in the world, the number of casualties in both countries varies greatly. The Chinese government has been highly praised in dealing with sudden earthquake disaster happened in WenChuan in China in 2008 by international community. Similarly, Japanese government has been highly praised too by international community by a serious of emergency measures taken during in the disaster earthquake in 2011. Finding out similarities and difference of the measures they have taken facing with the huge natural disaster between two countries is to give constructive feedback and inspiration to improve the efficiency of government crisis management.

Keywords: China, Japan, government crisis management, comparison, inspiration.

The globe entered into a period of mass disaster and great disaster occurred frequently since 21 century. Human not only have suffered the economic and property losses but also have paid the cost of lives. Humans have experienced a tsunami, hurricane disaster, earthquakes, volcanic eruptions and flood disasters. A series of disaster claimed countless lives. The table1 below shows the specific circumstances.

From the table1, we can see, a spate of major disasters occurred for the past decade. When disaster came, the hundreds of thousands of people lost their lives which give people irreparable loss. In addition, according to the latest statistics report on global natural disasters of the United Nations International Strategy for Disaster Reduction Secretariat (UNISDR), there are 3852 disasters, which result in 780,000 people death, and 2 billion people affected, even the economic losses

L. Zhang and C. Zhang (Eds.): Engineering Education and Management, LNEE 112, pp. 519–525.
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Table 1. 2001-2009 list of major disasters around the world

Time	Disaster name	killed
March 11,2011	Japan 9. 0 magnitude earthquake	13498
February27,2010	Chile 8.8 earthquake	799
January 12, 2010	Haitian 7.3 earthquake	100000
September30, 2009	Sumatra 7.9 earthquake	5000
August 15, 2007	Peru 8. 0 earthquake	510
July 17, 2006	Java 7. 7 earthquake	668
May 27, 2006	Java, Indonesia 6.2 earthquake	5782
March 28, 2005	Sumatra 8.7 earthquake	1300
December26, 2004	Sumatra 8.9 earthquake	280000
December 26, 2003	Iran 6.6 earthquake	60000

(Source: http://www.irisknet.net/riskdb/globalrisk/index.php).

more than $960 billion. According to the 2009 Statistic Yearbook for Asia and the Pacific, Asia suffered the hardest hit. Number of deaths was more than 80 percent of the total casualties of the world.

China lies in the two largest seismic zone-circum-pacific seismic belt and seismic belt interchange of parts of Europe and Asia in the world. Similarly, Japan is in Asia and the Pacific plate and the plate is at the junction of volcanic earthquakes in the circum-Pacific belt, where earthquakes are more frequent and occur every day. Felt earthquakes are nearly 1,000 times a year. China and Japan are the most frequent earthquakes countries in the world. However, the number of casualties between the two countries has a great of difference. The following is the chart of the earthquake level and the number of the death caused by the earthquake between the two countries since the twentieth century.

Table 2. The death of the country

China				Japan			
year	Place	magnitude	death	year	place	magnitude	death
1920	Haiyuan	8.6	230000	1923	Kanto	8.3	140000
1927	Gulang	8	40000	1927	Tango	7.9	3000
1932	Changma	7.6	70000	1933	Sanriku	8.1	3000
1966	Xingtai	7.2	80000	1964	Niigata	7.4	26
1976	Tangshan	7.8	24000	2004	Niigata	6.8	31
2008	Wenchuan	8	100000	2011	Sendai	9	13000

From the table2 we can find that china and Japan have had experienced the same level of earthquake since the 20th century. However the number of casualties was much different in the event of disaster. The number of death in the earthquake disaster was more than 700,000 in China but only about 160000 in Japan which is less than one-forth of the death toll of Chinese. This partly because of the high level of anti-shock technology of the building in Japan, but more important is that the Japanese government has a comprehensive emergency management system of crisis management. Find differences and identify more effective government crisis management process to improve the efficiency of our government crisis management through comparing the government crisis management process happened on 12 may 2008 to Wenchuan earthquake in china with the government crisis management process happened on 11 march 2011 to Sendai earthquake in Japan.

Table 3. How to deal with event of earthquake between China and Japan

Event	Time	response time	response way	Response contents
earthquake in Wenchuan in China	12/5/2008 14:28	May 12 16:40	Wen Jiabao Premier flied to disaster areas.	Wen Jiabao held emergency meeting on the plane and set up headquarters for earthquake disaster mitigation, in which he served as commander.
		May 12 18:00	Wen Jiabao arrived in Dujiangyan, Sichuan.	Premier Wen Jiabo held the meeting, the main numbers of which is relevant departments, army, armed police, and leaders of the local government in a tent in Dujiangyan due to the broken road to disaster areas.
		May 13	State council information office held a press conference	1. The authority spokesman released all kinds of the informational from the disaster areas every day. 2. Military officers attended the press conference for the first time in response to media questions at home and abroad.
		May 13	Sichuan Province government held press conference	Sichuan Province held a press conference every afternoon to release the latest news to the public.
		Remarks	Details of the news.	1. The latest casualties, tracing, donation information in rolling daily broadcast news.

Table 3. *(continued)*

				2. The government held all kinds of press conferences to communicate with the outside world. 3. Information can be spread from top to down smoothly, including negative reports.
earthquake in Sendai in Japan	14:46	March 11	the centre of crisis management, and the local government convened the meeting	1. The research office of the Prime Minister's official residence was established. 2. Established disaster response headquarter of local government (the government of Fukushima and Ibaraki Prefecture established a disaster response command subsequently).
		March 11	setting up Earthquake Emergency Response department	1. To confirm the disaster and the earthquake situation. 2. to ensure the safety of residents and take asylum measures. 3. to restore traffic and make effort to provide accurate information to victims
		March 11	All of the TV broadcasts stopped the original plan to report disaster situation.	1. Media played Tsunami Warning Maps and real-time traffic information. 2. Creating columns for missing person and security information. 3.Media collected information by helicopters. 4. To convey a variety of information to the people, including the way of escaping and relief disaster. 5. Television broadcast played rescues service in multiple languages, such as English, Chinese, Korean, Portuguese and Spanish.
		March 11 15:27	self-defense forces join the relief	More than 8,000 members of armed self-defense and 300 aircraft, 40 ships rushed to the disaster area.
		March 11 night	Japanese Foreign Minister met reporters.	1. Requested US troops in Japan for collaboration help. 2. Requested more than 38 countries and regions to send rescue workers and provide relief supplies, such as Australia, China, Korea, Russia etc.

1 Comparing to the Government Crisis Management of Two Countries

When Wenchuan in china suffered 8 earthquake disaster on may 12, 2008, the bravery behave of the Chinese and the efficiency of Chinese government crisis management have gotten more attention to and high praised by all over the world. Similarly, the Japanese government emergency management in Sendai earthquake on the march 11, 2011 has caused the world's attention the praise. Now compare with the crisis management of tow countries what they have done on the first day when earthquake happened.

2 There Are Many Similarities of the Government Crisis Management of Two Countries

1. The highest leaders of the country established the emergency response agencies and direct the relevant departments to face the disaster. When the Wenchuan earthquake happened, Chinese premier Wenjia Paul immediately set up the earthquake relief headquarters in which he was a commander in chief. Similarly, when Japan experienced an unprecedented large earthquake, the Japanese Prime Minister Naoto Kan set up residence "emergent respond headquarters in an emergency room to guide the national earthquake relief work.
2. Earthquake emergency response headquarters was made up a number of departments. The earthquake relief headquarters of china is headed by numbers of departments, the military and armed police forces. Japanese Prime Minister Naoto Kan established earthquake emergency response headquarter which is made of various departments and at the same time, large number of troops involved in relief process. There were nearly 10 million Chinese armed policemen and soldiers joined in the disaster relief and there were more than 20000 self-defend forces joined in the in Japan.
3. Information was transparency and the public media actively participated in. In the event of a major disaster, the two governments had press conference timely and announced to the people of the disaster and disaster relief situations; at the some time, mass media participated in and pressed from various source.

3 Some Ways That Two Countries Did in Government Crisis Management Are Different

1. Timeless of the response time is different. Japanese government established " The Prime Minister's official residence countermeasures room" at the same time of the earthquake's occurring in Sendai. While two hours later after the earthquake in Wenchuan in China, was "The Earthquake Relief Headquarter" established.

2. The procedure of the respond is different. Chinese government is more temporary than Japanese government because Chinese government called many departments temporarily when earthquake happened while Japanese government following the disaster laws to deal with the emergent disaster. Chinese government organized command center ministries temporarily and it may be inefficient. Japan has local emergency response centers and they are easily organized. So the performance of them is more effective.
3. The operability of the laws is different. The operability of the laws in China is poor in that there is no more detailed requirement of the disaster laws. Japan not only has a disaster laws facing of a major disaster to obey but also the laws are very detailed and strong operational.
4. The systems of the implementation are different. The central ministries in China play an active leading role while the local government in a subordinate and dependent position in the emergency management system. In Japan, there are also local emergency response systems and laws. The local government plays a more important role when a crisis comes. The local government mainly relies on the emergency bill for help. The central government is just the mediation among regions, military and the media.
5. The breadth and depth of the attention of the media is different. After the earthquake, the reports of the media were more care about casualties and disaster relief in china. The Japanese media not only sent helicopters to collect information of the disaster, but also they launched for help services in multiple languages, column in passing escape, relief and tracing information. They thought about the safe of the people in their country, meanwhile, they thought about the safe of the foreign people.

4 The Enlightenment to Our Government Crisis Management

There Exist similarities and difference of the government crisis management of the two countries facing of catastrophe. The difference of the crisis management provides a valuable reference for our future management of government.

1. Perfecting Government crisis management laws, regulations. According to law to deal with emergencies are universal measures and countermeasures. The laws and regulations of Chinese crisis management are flexibility, not specifically and are poor to operate though many emergency laws have made in recent years, such as “Earthquake Relief Act”, “flood control law”, Therefore, China should complement and improve crisis management laws and regulations such as making it concrete, practical and operational.
2. Central and local government should set up a special government crisis management. Central and departmental should establish a crisis management office which is made up of the relevant expert groups who provide technical support and the major institutions with which the office will conduct long-term special cooperation. The crisis management office provide regular and irregular training of prevention knowledge to the people to raise

people's crisis prevention capabilities and let the emergency through to everyone's daily lives. Just as it is said “maintain an army for thousand days to use it for an hour”.

3. Set up a public emergency mechanism, which is led by the local government, assisted by the army and coordinated by the central government. In the process of relief of the Wenchuan earthquake disaster, the force played the extremely effective advantage. Taking full advantage of armed police, military force is fairly important to reduce the loss of the disaster.
4. Give full play to the role of the media dissemination of information and increase its transparency. The timeliness of the information is extremely important in crisis management. When a major crisis event occurs, people’s panic comes from their not knowing of the information of the crisis. People will treat with what has happened sensibly and respond positively to the disaster occurred if only they were given all of the information of the event. The main force to deal with the disaster comes from not only the government but mainly from the masses of the people. The media is the key source of the information of the masses. Everyone is rational and have the ability to identify the truth and false of the information. Real information will unite people around the government closely to response to a variety of major disasters. The false information would make people disappointed to the government and at the same time, the credibility of the government falls which could make relief into deadlock.

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Analysis of the Dislocation and Docking of Students' Start-Ups between Campus and Industry

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Abstract. Under the immense pressure of employment, more and more college students resort to establishing their own businesses.At present, most college students entrepreneurs take the campus as an attempt for their start-up in the industry. The reason is lack of experience, environmental barriers and lack of a clear long-term planning, as hinders continuous business development. Based on the study abroad students on the basis of entrepreneurship theory, combining business college students in Zhejiang, the actual case, analysis of constraints on campus entrepreneurship and social entrepreneurship docking problems and causes.In this paper, to achieve the docking of students' start-ups between campus and industry, it is necessary to form a linkage mechanism of a virtuous circle by the students themselves, schools, government and social organization, as of four dimensions together.

Keywords: Campus entrepreneurship, Dislocation, Docking.

1 Introduction

Campus entrepreneurship starts to get recognition and encouragement from the government and the community, by solving the employment problems and as a way for college students to realize their personal value. It can be said that students' involvement in entrepreneurship has injected a new vitality into industrial entrepreneurship. However, most students entrepreneurs take it as an attempt to start up a business in campus, separating it completely from start-ups in the industry. A result of this way of thinking is: on the one hand the students, based on campus, can only do some small business project without influential impact to the industry or community; on the other side, students can not leverage their start-up business based in the campus when they move to the industry for further development.

2 Analysis of the Problems on Campus Entrepreneurship

To understand the dislocation and docking between campus start-ups and the industry, we've carried out a survey for student entrepreneurs in 5 universities in Zhejiang province, including Zhejiang University, Zhejiang University of

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Technology, Ningbo University, Zhejiang Normal University, Wenzhou University. 200 questionnaires were issued during this survey in late June 2010. As of the end of June a total of 198 questionnaires, of which 196 valid ones, have been returned, with the effective rate 98%. The questionnaire included type of business, difficulties, entrepreneurship trainings that have been received in various forms, the awareness of start-up difficulties and so on. All data in this survey has been processed with Excel and then analyzed by statistical software Spss, and the result was discussed.

Through the investigation we found that school business types includes Agency, Service, Internet, and Technology. Agency accounted for 25%, Service accounted for 39%, 28% for Internet businesses, and with the rest of 8% for Technology.More entrepreneurial type from this survey and the teams only target a short-term business plan. The way such business works are entirely based on the campus, by meeting the demand of different groups of students and providing differentiated services on campus. It has a relatively low barriers to enter, and the market space is limited, therefore it is easy to lead to over-competition. It is difficult to get to further develop and expand the business to the community and industry, when the owner graduates from university.

3 Analysis of Dislocation between Campus Start-Ups and the Industry

Lack of long-term major business development plan. First, entrepreneurial business start-up in campus are lack of team planning. The formation of team with complementary skill sets and solidarity is crucial to create human resources advantages [1]. The team is usually only sporadic combination of three to five college students, lacking of long-term team planning. Second, the entrepreneurs are usually lack of project planning. Students don't have sufficient knowledge and market surveys, and not aware of the market acceptance of their own products or services. It's the uncertainty of market demand that leads to the risk of project selection for start-ups, because the market has a volatile and unstable characteristics [2]. Finally, here comes the lack of financial planning. Sufficient funds is the assurance of maintaining operation and development of business growth. As the business owner, from long-term development considerations, you must establish a steady financing [3]. Although a few students have a family background of business support, most of the students still need to go through their own hard work to build their own financing to meet the needs of business growth.

The campus entrepreneurship education is lagging behind. Currently college students across the country start vigorous business, but we are still in the initial stages of entrepreneurship education. There are still many shortcomings and even make up a lot of gaps in urgent need, such as the lack of open training model, the lack of a reasonable course structure, the lack of professional teachers, lack of the appropriate campus culture. Many universities have set up employment and entrepreneurship guidance courses, while carrying out many large-scale theme events for campus entrepreneurship. Students have been exposed to campus entrepreneurship in many

occasions. However, these programs is relatively fragmented, e.g. elective courses in many colleges set the KAB (know about business) program, but without many other auxiliary programs, such as psychology, management, organizational behavior and so on. Meanwhile, the campus entrepreneurial activities focus on the theme format and media influence, but the actual effect were neglected. Even if it discovered certain excellent business plans, they will get ultimately forgotten. And those who did not participate in such activities and business practices, as the majority of students, has still poorly understood what campus entrepreneurship is.

The lack of government and community involvement. Students during start-up process will need government support for small loans, venture capital, industrial and commercial administration, taxation, human resource, etc. According to the survey, college students generally sources venture capital in three ways: self-financing, loans, venture capital. In three ways, the majority is from family, friends, but with a certain amount of emotional stresses. This phenomenon highlights that during the students start-up process, due to lack of micro-credit system, most college students can not successfully start the venture to obtain bank loans. In addition, the students start-up projects generally are small in scale, low in capital demand, and flexible in operation, which does not meet the most current venture capital investment requirements. Therefore, there is lack of a specialized small and medium venture investment system, or venture capital fund dedicated to students by government.

4 How to Achieve Docking between Student Start-Ups and the Industry

To achieve this, there must be improvement from students themselves, schools, government and social aspects, as of these four dimensions. Among these 4, the improvement of students themselves is a core element of the entire butt. School is the most important environmental factor, and the support for students on campus can play an essential role. Government and society is the support from the macro environment. Only the improvements from the four aspects together will make a docking between campus and social entrepreneurship.

Improve the quality of the entrepreneur is the key to their own. The current university teaches mainly academic courses. Only til the graduation year, there'll be two months for social practice. There are many disadvantages in this model. On the one hand, it can not be earlier for students to know more about the society, and to learn independent thinking and living; on the other hand, students can not link up what's learned from courses with from the practice. To students with entrepreneurial ideas, social practice is very important. Earlier experienced social practice, students will have a greater vision and pattern thinking to keep the whole society as a consideration, not just limited to the small campus environment and student market. Social practice, to make good in what's lack of in university education, can also be a very helpful role for students' self fulfilment.

It is an important way to promote entrepreneurship education in school. Entrepreneurial university is not a total confrontation to traditional university culture

system, but rather a succession of traditional educational system and development of its educational philosophy is more deep-seated, more transformative. It covers and broke through the the innovative education, and creation of the spirit of education, advocated by traditional education system. Its core mission is to train students with the entrepreneurial spirit. Innovation is the premise of entrepreneurship. Entrepreneurship education starts from innovation. It aims to gradually develop creativity and entrepreneurial awareness, and their ability to innovate through new products, new services effectively in a market economy to create value. Therefore, we should establish a transition to the concept of entrepreneurial university, where students will be strengthened with entrepreneurship education as an important mission, to build a reasonable mechanism for entrepreneurship education, to foster "innovation, creativity, entrepreneurship" as the theme, and enhance students ability of surviving in market competition, to enhance the ability of college students start their own businesses.

5 The Government, Society and Schools to form an Organic Linkage Mechanism Is to Protect College Campus Entrepreneurship

5.1 Government-Led

Government departments play a pioneering role in protecting entrepreneurial support system for the students. Students should be given preferential policies to provide a good start, while standardizing the market order, and create good market environment, the right guidance, incentives, and standardized college students venture. Chengdu Municipal League provided business park with free of charge for university students, to foster entrepreneurship among university students. This initiative promotes docking between campus entrepreneurship and the community for college students. We also need attention to the role of private capital, due to the current venture capital market in China is not mature, private capital participation in entrepreneurial activities was not enough, for most start-ups, especially entrepreneurs by college students. It's difficult for them to get venture capital. Therefore, the government should develop practical policies to promote private venture capital to participate in entrepreneurial activities. In short, we should build up a covered government financial support, and venture seed fund to support university students, which is actively participated by private venture capital to form a sound system of financial support.

5.2 Enterprises to Participate in

Due to the characteristics of local leading industry, it will often have affiliated industries, to form an industrial cluster. Students can not utilize the advantages of local industry well enough due to less exposure to the community when they are staying in the campus, which requires the government to promote more in the col-

lege students, to give them a better understanding of the local regional economic advantages, in particular industrial development trend. Setting up the bridge between university students and business will increase the success rate for college students venture. Students need to get encourage and support and rich variety of services from industry and community.

5.3 Industry Support

Government should promote the local industry to college students and local preferential policies for development to give students more entrepreneurial guidance. College students are the future of social development and the main force of economic development. The government should give full attention to their growth, development and project training in the industry, to care more to students with entrepreneurship, so that students will have more affinity to appropriate business and industry development of the industry's future growth. We can make use of the institutions and enterprises to provide help for entrepreneurs to create more accessibility. Many of this kind of institution, such as "Students of legal aid station business," "Students start to help stop" have been set up throughout the country. These sites where entrepreneurs can find the latest policy and get advisory, but also help the student entrepreneurs to get assistances in legal, business philosophy and etc.

6 Conclusions

It is a long process to dock campus entrepreneurship to the industry. To deal with the problems faced by college students, we should first get to know the nature of the problem and spend efforts to explore ways to dock. Practical work should also be gradual and step by step, to explore and find, and guide the entrepreneurial success of college students.

Acknowledgements. This article is part of "Entrepreneurship Education Training Zone Wenzhou model experiment and innovation" research, of the Innovation of the Ministry of Education Training Project Experimental Zone in 2008, and research topic of Wenzhou Municipal Science and Technology Agency (R20100021) the problems faced by college students venture in Wenzhou, and Social Sciences Association Of Wenzhou(Wyk11087) "Risk Avoidance and Countermeasures of Start-up Companies by University Students in wenzhou"and some countermeasures results.

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Practicing Teaching Quality Monitoring and Evaluation Issues' Study of Undergraduate Accounting Major

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Abstract. This article is based on the study of Undergraduate Accounting major in Inner Mongolia University of Science & Technology. After a brief introduction about the practicing teaching in this major and some analysis about the existing problems, such as the insufficiency of scientific and effective standards in teaching quality monitoring, a lack of evaluation patterns, students' insufficient cognition for practicing teaching, the single monitoring and evaluation methods which is used presently, etc., the author will give some pertinent evaluation measures, including the reinforcement of cognition, the establishment of evaluation standards and the reformation of evaluation methods. These measures will be helpful for ensuring the teaching quality. And by carrying out these measures, the author expects that the university teachers in this major can realize their teaching goal better.

Keywords: Practicing teaching, Quality monitoring, Evaluation.

1 Introduction

As a very practical subject, the accounting always takes "applying the knowledge" and "combining theory with practice" as guiding theories as well as developing goals in teaching activities. Therefore, accounting practicing teaching has become an important part of the university accounting teaching. At present, the accounting practicing teaching can be found in many colleges', but there are lots of problems in assuring the teaching quality [1]. This article takes the accounting major in School of Economics & Management of Inner Mongolia University of Science and Technology as the study object. It aims at giving some concrete measures to ensure the teaching quality monitoring and its evaluation.

2 Introduction of Accounting Practicing Teaching in Inner Mongolia University of Science and Technology

Inner Mongolia University of Science and Technology (hereinafter referred to as IMUST) undergraduate accounting major began its enrollment in 1997 with a scale of 90 students per year on average. In recent two years, only science students

L. Zhang and C. Zhang (Eds.): Engineering Education and Management, LNEE 112, pp. 533–538.
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can be considered. According to the teaching plan which is continuous perfected, students are required to finish the basic courses and the professional courses as well as to accomplish the following practicing studies.

2.1 Cognitive Practice

In order to enhance their understanding of the major and to help them establish a perceptual basic before beginning the professional courses, we organize the students to do a cognitive practice during their 2nd semester. This practice will be set in large enterprises like Baotou Iron and Steel Group or Northern Heavy Industries Group. During two weeks' time, students will get to know the process of production and operation, the economic business cycle in different enterprises and make clear of signs in economic business – acquiring an original voucher, filling in the tables, verifying it, and recording, etc. Currently, the quality monitoring and evaluation of this part are mainly based on the discipline inspection. Students need to hand in a report after the practice. Scores are then given according to the attendance and the report.

2.2 Enterprise Accounting Business Simulation

It is not easy for students to carry out a social practice owing to many factors. Therefore, it has become irreplaceable to train the students on campus to improve their practical skills. In IMUST, after finishing the theoretical courses such as intermediate financial accounting and cost accounting, students will have a simulation of enterprise financial accounting organized in the school laboratory. This simulation will take place during the second semester of the third year. It will last eight weeks. The task is to simulate the enterprise economic business following the enterprise accounting process. And the sources needed are given in the teaching material. During the simulation, professional teachers will provide a tracking guidance. At the end of the simulation, students need to submit a big assignment. A defense meeting will also be organized. During the meeting, teachers who have participated in the simulation will ask each student questions connected to the existing problems in their assignments. The evaluation is mainly based on the quality of the big assignment. The performance during the defense meeting and the attendance will also be taken into consideration.

2.3 Graduate Internship

The eight weeks' graduate internship will take place in the second semester of the fourth year of university. In IMUST, most students find their internships by themselves. There will also be some companies coming to look for interns. Some particular students who cannot find an internship will stay at school. After their internship, students need to submit their project of internship, at least twenty internship diaries, a global evaluation of the internship by the company for which

the student has worked, a survey about the demand and the supply for accounting major students and documents about job seeking experiences of each other. As a result of the diversity of the internship locations, there are some difficulties in monitoring and evaluation. And during their internship, students always do some trivial work instead of really taking a post. That's why they can hardly get to know the whole accounting process in economic activities. The internship is becoming more and more a mere formality. Besides, students who can't find their internship have to make up their internship reports so that many reports are alike. Consequently, the judgment is usually given according to the timeliness.

2.4 Graduation Thesis

Students can learn how to think, how to analysis and how to solve practical problems individually with multidisciplinary knowledge and skills by doing their graduation thesis. That's the reason why the composition of the graduation thesis has become an important part to achieve the teaching goal. After the graduate internship in the second semester of the fourth year, students need to finish their graduation thesis in ten weeks' time. In fact, the connection between a teacher and the students who he will guide has already been formed at the end of the second semester of the third year. Teachers will tell their students how to choose a subject, how to collect resources during their internship, how to consult literature, etc. Students need to keep contact with their teacher while doing their internship. Teachers provide targeted guidance and answer students' questions promptly during the whole process, including the selection of topic, the collection of resources, the dissertation proposal hearing, the first draft, the amended draft and the final text. The guidance records are also noted by teachers. A guide-note is given according to the student's performance during the whole process and the quality of his thesis. The final note is based on the guide-note and the graduate defense.

3 Practicing Teaching Quality Monitoring and Evaluation Problems

3.1 Lack of Scientific and Effective Standards in Monitoring and Quality Evaluation

The quality of evaluation standards has an important impact in improving students' enthusiasm and initiative and also in training and improving teachers' practical ability. Without a scientific evaluation system, the teaching level will be hard to evaluate, the teaching quality will be hard to guarantee, and the teaching effect will be greatly reduced. In IMUST, at present, we have neither an evaluation standard nor practical implementation methods which can reflect the characteristics of practicing teaching level and reflect students' practical ability. Respecting theory while neglecting practical working ability, respecting the evaluation of a single

aspect while neglecting the global evaluation of teaching quality are our principal features in practicing teaching currently [2].

3.2 Cognition Insufficient for Practicing Teaching

Student's always think that it is more important to learn the theory with which they can pass the exams. They don't have a rational understanding about the importance of the practicing teaching. They don't have a correct attitude towards the practicing study. During the cognitive practice, students are not serious enough so that they can't be clear about the production process. The goal of practice can't be realized properly. During the practice on campus, students can ensure their attendance but not their study quality. Besides, the evaluation methods at present are not paying enough attention to the performance during the process while the result is much more considered. As a result, students copy each other and their reports are banal.

3.3 Single Monitoring and Evaluation Method

At present in IMUST, the relevance between the monitoring and evaluation methods and the nature of the practice is not evident. It is mainly revealed as follow: no matter what kind of practice, the note is given according to the performance during the practice, especially the attendance, and the quality of the report. In general, 30% of the note is from the attendance while the report occupies 70%. As a result, even though a student has never been absent, he hasn't got much knowledge from the practice. In fact, each practice has its own goal. The way of evaluate should be different according to the nature of the activity.

4 Measures to Perfect the Practicing Teaching Quality Monitoring and Evaluation

In view of the existing problems of practicing teaching in our school, we must take the following measures to ensure the teaching quality.

4.1 Reinforce Students' Cognition for the Necessity of Practicing Teaching

A qualified accountant should master not only abundant professional knowledge, but also a strong practical ability. Whether a student can graduate or not depends on his scores of the theoretical courses. The importance of the theory is therefore well-known, whereas the effect of practice is not well understood. And the cognition for practicing teaching is not enough.

To reinforce students' cognition of the importance of the practicing teaching, we can begin with the societal demand. Nowadays, the practical experience has become a general request in modern society. The enterprises think highly of the

global ability, especially the practical ability. We should take it as our object to satisfy the societal demand, take it as our task to train students' practical ability, broaden students' knowledge and improve their global ability. Only in this way can our students be useful [3].

4.2 Establishing Practicing Teaching Monitoring and Comprehensive Evaluation Standards

Scientific practicing teaching monitoring and evaluation system is an important basis to ensure the teaching quality. Along with the specific practical ability training target and a complete, systematic practicing teaching syllabus, we must establish a strict practicing teaching monitoring and comprehensive evaluation standard in order to evaluate students' learning effect accurately. According to the goal of training and the characteristics of cognitive practice, accounting simulation, graduate internship, graduation thesis, we should establish targeted evaluation standards and make it institutionalized by documents. With a strict control and a standardized operation, the practicing teaching will achieve the desired effect.

The accounting practicing teaching quality monitoring and comprehensive evaluation standards should be not only scientific but also easy to apply. We should also pay attention to the process and strengthen the practice [4]. As a lot of factors can affect the accounting practicing teaching quality, many of them can hardly be measured by numbers. Therefore, the evaluation standard should include qualitative index and quantitative index. The process and the result should be both evaluated.

4.3 Monitoring and Diversification of Evaluation Methods

As the practicing teaching is rich in content, the practicing teaching evaluation should also be diversified. The evaluation should be based on the characteristics of the practicing teaching, take training practical ability as the guidance, actively explore the reformation of the examination content and the examination form. The evaluation content should be both theoretical and practical, including the application of learned knowledge and skills. The process should not be forgotten. In this way, the effect of practicing teaching can be presented.

The random text can be used to evaluate the accounting simulation. For example, if the accounting process is divided into several segments and several practical questions are prepared for each segment, students have to answer the question randomly. Even though this examination method can't cover all skills, students can get good grades only if they have a comprehensive grasp of the knowledge. The results are therefore able to reveal the student's ability [5].

The dispersions of graduate internships increase the difficulty of evaluation. Teachers and internship enterprises should keep in touch. Teachers should always be aware of the situation. Students' scores should be determined by school and also enterprise. The enterprise evaluation should focus on professional ethics, labor

discipline, professionalism, learning attitude, and the ability of solving practical problems.

The score of graduation thesis should include the evaluation of the instructor, the evaluation of an anonym teacher and the performance during the defense meeting.

5 Conclusion

In order to ensure the accounting practicing teaching quality in IMUST, we should first explain to the students rationally the important role of practicing teaching in their professional learning; secondly, we must establish evaluation standards to control students' practical process and to reveal their accounting practical ability. This can also help students accomplish their practicing study with initiative. Also, the teaching monitoring, the evaluation form and the evolution content should be explored continuously to reflect students' practical effect accurately.

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How to Study Documentation as University Students

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Abstract. In modern times, the intense international competition results in talents competition, and it is the university's responsibility and accountability to train its students to be the talented ones. However, being university students in the new era, they are supposed to be capable of lifelong learning, and this is the requirements of our times. As a professor of a university, the author brings forward the notion that university students should study documentation based on textbooks. The author analyses the necessity and feasibility of documentation study as university students at first, then explains the five stages included in documentation study: indexing, reading, summarizing, reorganizing and communicating, at last, he works out the exercisable ways of practicing of each stage respectively.

Keywords: University students' learning, textbook, documentation, methods.

In modern time, the more and more intense international competition focuses on the comprehensive national power based on economy and science & technology, while the core competency results in talents competition. "Innovation is the soul of a nation, the inexhaustible impetus of a nation's prosperity", it is the university's responsibility and accountability to train the students to be the talented ones. [1] One of the necessary qualities of innovation talents is the capability of self-study and lifelong study on the base of other researchers' achievements.[2,3] Therefore, it is worthwhile to discuss how a university student can learn from others' achievements.

1 The Necessity of Documentation Study as University Students

This is the time in which science and technology change with each passing day, the effectiveness and foresightedness of knowledge and information won't remain unchanged. Confronted with the elapse of knowledge and information, someone proposed a notion called "lifelong learning" [4]. In 1994, "the World's First Conference of Lifelong Learning" was held grandly in Rome, lifelong learning has gotten consensus around the world ever since.

Lifelong Learning means the continuous learning process in the lifetime of every social member, in order to keep pace with the development of society and individuals; it is often referred as "To live, to learn". As to a university student, lifelong learning means treasuring the learning opportunity in college where he/she

L. Zhang and C. Zhang (Eds.): Engineering Education and Management, LNEE 112, pp. 539–545.
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has not only mastered expertise but also gotten the ability of adopting knowledge, independent judgment and making choice, then forms a habit of proactive and continuous learning for lifetime.

What a university student has learned in college only accounts for 10% of his/her whole knowledge in life, the other 90% comes from unceasing learning after graduation. [5] In the era of knowledge economy, people's pursuit of knowledge is like the pursuit of land in the agricultural economy era, and so is the pursuit of capital in industrial economy times. Investment in education is regarded as the paramount investment, lifetime education and learning will undoubtedly become the fashion of our times. Documentation is the most effective means of recording, accumulating, disseminating and inheriting knowledge, the basic and uppermost resource of information for human society. University students must strengthen the ability of independent learning from documentation, to master new knowledge, new skill unceasingly in life, to maintain good knowledge structure, to meet the requirements of our times.

2 The Feasibility of Documentation Study as University Students

2.1 Documentation Index Curriculum

Nowadays, many universities have set up the documentation index curriculum, the curriculum is aimed to help students to obtain, analyze, evaluate and process information independently, scientifically and systematically. In this curriculum, students can improve their capability of self-learning, investigating, analyzing and settling problems with creative minds by solving the problems encountered in their learning process, and upgrade their information sensibility at the same time.

2.2 The Weakness of Information Sensibility of University Students [6]

Information sensibility refers to the ability of a person's efficient searching, evaluating and making use of information when it is needed; generally, it contains technology aspect as well as humanity aspect. [7] A person who is good at learning is a person capable of consulting, processing, and utilizing documents. Along with Digital Age's arrival, the information carriers coexist both in the form of traditional media and in the digital ones, which requires university students to know how to make use of paper documents as well as digital resources through webs. However, current university students' information sensibility is universally weak; for example, they cannot seek, appraise and select information adeptly via library or modern techniques; the capability of management and utilization of information resources is not strong either.

2.3 The Enrichment of Documentation Resources

The different forms of publications have led to diversification of documentation resources. The present documentation resources include traditional prints (books, periodicals, newspapers) and modern electronic resources (e-books, database and webs) [8]. In addition, with the rising of Opening Attain (OA) publishing, the massive production of Opening Attain Journals flourishes, people may get them free from the webs; disquisitions are shared without any charge.

3 The Methods of Documentation Study as University Students

Documentation accrues daily; it is useless and senseless to be a collector; while it is no better than a collector to discard each time after using. Therefore, how to instruct university students to collect, reorganize, utilize, and manage documentation is worthy of discussing.

Motives of university students in documentation study result from two aspects: One is the professors' assignments concerning the course contents in order to expand their knowledge scope. The professors, with their own expertise background, help students to distinguish credible and authoritative resources, find their reasonable index strategies and effective methods and skills to make full use of all kinds of resources, urge them to lay foundation for documentation index. In this way, professors teach the students good methods and skills of learning, stimulate their learning interests. [9] The other is the students' independent study in the course of seeking answers to questions or cut-edge knowledge in a certain field, today's independent study is tomorrow's lifelong learning. [10]

Whatever the motive is, the five stages are included in the documentation study: indexing, reading, summarizing, reorganizing and communicating. Each stage has its own goal: indexing is the collection of documents; reading is to get acquainted with the viewpoints of the documents; summarizing is to compare and refine the documents in one's mind; reorganizing is to sort and store the documents in the "knowledge warehouse"; and communicating is to exchange and share what one has got with others. Communicating is an dispensable stage of each documentation study; it can separate from the other four stages, and communicate with others about a certain problem in a suitable situation.

In the following, we discuss the methods of documentation study in five stages respectively.

3.1 Indexing Documentation

It is the first stage of documentation study; in general, it is composed of the following three main steps:

First step, the analysis and seedtime, includes analysis of the materials being studied, definition of the indexing contents and scope, confirming the author, the category number, the keywords of themes, the categories, and the choice of index tools and channels of searching.

Second step, seeking phase, seeks the materials related to the one being studied, then select important and applicable documents, read in a certain order and record in the form of excerpts, information cards and reading notes.

Third step, the processing phase, refines useful information from the mass documents collected, select the essence, discard the false and process completely. This phase mainly includes rejecting the false, removing the redundant, eliminating the obsolete; Evaluate the applicability of the documents from a researcher's point of view, keep the comprehensive, and complete documents that can describe problems profoundly and accurately, and also those with new ideas, new materials; be careful to treat the perspectives verified unilaterally and solitarily. Facing so large a quantity of documents, we have to sort and compile catalogues of them. We have to differentiate and appraise the reliability of the documents to be used, never adopt those that are not credible or ambiguous.

Now, computer index has become the universal way of documentation index, the majority of the indexes in the world can be processed in a computer, over 80% of them are connected to the network. In many situations, computer has played a main role in documentation index. The following problems should arouse our attention when using a computer: (1) Keep a complete and accurate bibliography registration while searching documents, it is helpful in later searching, and it is time-saving and chaos-reducing by eliminating the need for a second search or more times, and repetition is really a troublesome matter. (2)Pay attention to the documents cited or referenced many times by others, since they are so valuable and attractive, and therefore worth reading. (3) Take notes of useful information in time of reading. Reading without taking notes can never help to digest what you have read. Just as a famous saying goes: "No notes, No reading". (4)Try to collect the firsthand data as possible as you can, only in this way, can you get information as close as possible to the reality.

3.2 Reading Documentation

When reading documentation, it is better to read the abstract, the later part of the introduction or the conclusion first, generally, the authors introduce the contents briefly in these parts, we may get a clear outline of the whole essay with little time, and know where we should pay much attention to and where we should browse only.

As to some valuable documents, we need to read extensively first, to get an overall impression by browsing, omitting the details. In this way, we can know whether they are related to the materials being studying or not. If it is closely related to, we should read intensively and take notes in detail, so that we can find them easily whenever needed; otherwise, we may just put aside after a brief registration in case of a second time consultancy.

3.3 Summarizing Documentation

University students may read lots of documentation in school learning, but not all the documentation they have read impressed them, bettered their knowledge structure. This means what they have read results in indigestion, and it has not become their own knowledge, they just read it.

That is the reason why we should summarize in time after reading. Usually, university students should answer the following questions after reading: (1) What is the motive of this document? (2) What is the solution given in this document and what is its effect? (3) What is the contribution of this document? (4) What is the future development trend of the contents in this document? (5) What is the difficulty and the problems left in this document? (6) What information have we got from this document?

University students may find the relationships and differences of different documents through summarizing. By doing this earnestly, students may find "something different".

3.4 Reorganizing Documentation

After reading, it will be quite difficult to find it if you have not reorganized it, what you can do is to open and search one by one. It is time-consuming. Documentation reorganization consists of two parts: one is to name it; the other is to manage it.

First, the naming of documentation

Setting up your own naming and coding rule for documentation management is necessary to documentation standardization and ordering, documentation classification, storage and utilization are all rule-based. The rule must be simplified, sorted and stratified. We can catalogue a document according to its carrier attributes, for example, author, classification, theme, written time etc. A good name implies distinguished catalog information. Stratum management of documentation may contain themes and sub-themes, which are well-arranged. We may work out rules according to our habits, preferences, so it is easy to collect, store and consult.

Second, storage and management of documentation

In information times, it is recommended to store documentation in digital forms; hand recording is time-consuming and energy consuming. There are so many softwares specializing in documentation management: for example, (1) documentation management tool *Total Commander, Office* and so on; (2) synthesized management system *Endnote, MYbase, Evemote, OneNote* and so on..

As to *Endnote*, university students, after reading, may briefly take down the points(such as theme, purpose, method and conclusion), gains and doubts in the software, and can also take marks(for example, F stands for Finish, R stands for reading etc.) as to some excellent sketch maps (especially colored maps) and significant data, we should never miss to take a screenshot, and store them with the theme, abstract and conclusion. When the documentation read added up to a

certain amount, say 10-15 documents, university students may take down a brief summary (related documents about a given theme) in *Word,* according to its category. Thanks to the function of *Word* and *EndNote,* students may insert the documentation as reference when summarizing, it is so convenient for future searching.

3.5 Communication of Documentation

Document may increase its value through communicating. For instance, I have one apple, and you have one too, each of us has only one apple after exchange. However, if we substitute apple with document in this case, each of us get two documents after exchange. Therefore, university students must be good at communicating, sharing the documents with others to improve mutually.

Communication may take place simultaneously when one is enjoying a good document or some day in the future. The communication may be face-to-face or remote discussion via networks tools, such as ICQ, MSN, QQ, and E-mail etc.

4 Conclusion

Openness is an important characteristic of modern education; it is also the main trait of contemporary university at the same time. The openness is reflected in the diversification of class teaching and multi-channel learning. It is the flexible and free management style, the ease circumstance and bountiful teaching resources that make it possible for students to enhance the contents of learning, to master extensive and profound knowledge and skill, to improve comprehensive capability. Computerization condition facilitates university students' independent learning, but how to make full use of the conveniences to better the status quo of students' independent study, to seek optimum strategy of independent study integrated with current influential elements, awaits the professors and students' continuous exploration and practice in their teaching and learning.

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Exploration and Implementation of Research Projects on Mechanical Innovative Design

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Abstract. In the classroom teaching of Mechanical Innovation, authors introduce small research projects which need students ' active thinking and practical design, in order to guide students in accordance with the design engineers thinking and creative thinking approach to mechanical design work. Such small research projects are open and comprehensive, needing students' innovative design, integrated using of a variety of modern design and engineering software and ways of thinking based on engineering. And in this paper, authors also explored implementation methods and evaluation mechanisms of the small research projects. Practice shows that: the implementation of research projects, not only improved the students' comprehensive design capabilities and trained in engineering design thinking, but also can enhance the innovation ability of students.

Keywords: Innovative mechanical design, research projects, innovation ability, practice.

1 Introduction

In this paper, some open research projects are arranged. There are two points on the motivation of this study. First, we should provide opportunities to junior year undergraduates to do some research work, and develop their creative ability. Second, students should creatively study and apply the knowledge points from the textbook, which can develop their engineering design thinking and analysis skills of the actual problem solving[1].

This article first discusses selection principles of simple research subjects. Based on the principles, we have designed some related topics. Then, it discusses on the schedule of the small research subjects and examination and evaluation mechanism. Finally, it show the student works, which was done under implementing small research subjects when author works at a engineering departments of Beijing university of posts and telecommunications over the years.

Implementation of simple research subjects has cultivated the abilities of problem analysis, innovation capacity and team work abilities of students.

L. Zhang and C. Zhang (Eds.): Engineering Education and Management, LNEE 112, pp. 547–551.
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2 Design Content of Simple Research Subjects

The author has tried the simple research subjects in a faculty of Beijing University of Posts and Telecommunications for several years, has designed 20 subjects involved all aspects of the above content and daily life, as Table 1 shown.

Table 1. Titles of the simple research subjects

Number	Title	Number	Title
1	Pole-climbing Robot	11	Finger treatment instrument
2	Laptop stick	12	New type lunar rover
3	Automatic coin piggy	13	Automatic beverage vending machine
4	Large site debris removal	14	Bus doors closing of institutions
5	Detachable punching machine	15	A jump device for wheelchair
6	Playing hand	16	Scalable, foldable drying rack
7	A oriented or intermittent goods-delivering Mechanism	17	The brake system of Bicycle riding down
8	Ball separator	18	New folding - arm of tower crane
9	The design of mop swill cylinder with wring mechanism	19	Anti-theft lock key innovation design
10	Design of rehabilitation of fractures of leg mechanism	20	Others

3 Implementation of the Simple Research Subjects

3.1 Subject Arrangement

The schedule of the simple research subjects is as follows: after teaching the combination and innovation design of institutions in 8th teaching week, we will layout the simple research subjects. We can request two to four people in a group, with free combination (suggesting in bedroom units).Then, a group select a topic from the 20 research subjects or select freely. In the 17th week spend one day on oral defense. There are 8 weeks to prepare[2].

3.2 Assessment and Evaluation

In the third week after the layout on simple research subjects, we would schedule a lesson (45 minutes) to discuss small simple research subjects. Students make a reply in groups and show progress. Results of simple research subjects determined by mutual evaluation of the students, which is divided into two parts, overall evaluation(S1) and individual assessment(S2), as shown in table 2. Overall evaluation

S1 is the grade of overall impression of the reply group which each student marks. It takes A=95, B=80, C=65 when we census.

Individual evaluation S2 tests from five aspects, which include innovation ability, theoretical analysis, design thinking, design means and reply expression. Scores for each project are as follows[3].

A :1.0 * Scores of project;

B: 0.8 * Scores of project;

C :0.6 * Scores of project

Accumulating the scores of each project, we will get a individual percentile scores S2.

Table 2. The table by mutual evaluation of the students to simple research subjects.

On the group's evaluation:(Only radio)		Excellent	Good	General
S1	On the group's overall evaluation	A	B	C
S2	1. innovation ability	A	B	C
	2. theoretical analysis	A	B	C
	3. design thinking	A	B	C
	4. design means	A	B	C
	5. reply expression	A	B	C

Group's total score S=(S1+S2)/ 2.

4 Students' Innovations

Through forming teams, selecting topics and design, students made many innovations of their own. Treatment for fingers, solves the problem, which is how to complete a safe and effective driving finger grip action, and to promote the rehabilitation of injured muscles through a continuous movement. New folding boom crane, learning the way of lifting truck and using the program of reducing the concentration of power and torque of the folding arm, effectively prevents the broken tower. The bionic hand which can play, using the linkage, improved the way that mechanical finger in the past hasn't joints but the motor. What's more, the bionic hand used nested link, connecting inside and outside, so that made the fingers more compact, which fully realized the simulation of staff. New lunar rover, improved the mobile system of china's first lunar landing vehicle engineering prototype, and proposed a vehicle which can walk on the moon using the planetary wheel mechanism. The new lunar rover effectively reduced the number of the original system car wheels, lowered the complexity of the system and Improve reliability of the system.

Part of the work of students is shown below:

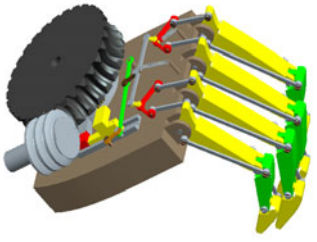

Fig. 1. The overall effect diagram of Treatment for fingers

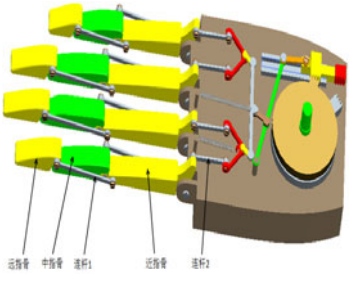

Fig. 2. The diagram of the parts which need mechanical analysis and checking

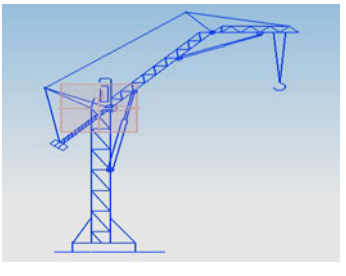

Fig. 3. The new tower crane program with UG painted

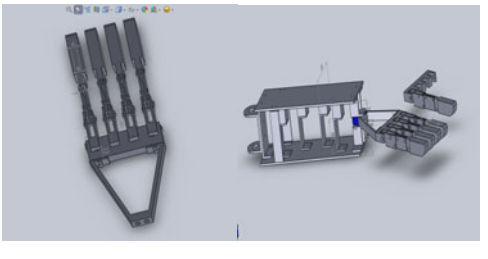

Fig. 4. The 3-D map of fingers and arm with Solidworks drawing

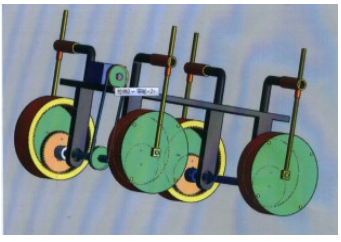

Fig. 5. The overall effect diagram of the new lunar rover based on planetary wheel mechanism

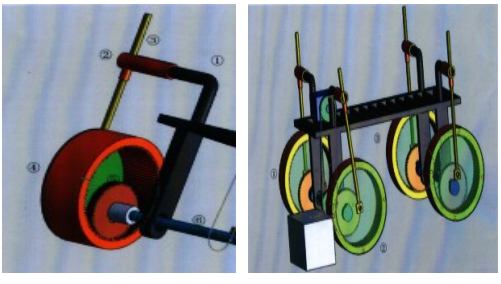

Fig. 6. The sports figure of no obstructions (left) and obstructions (right) in front

5 Summary

This article describes the exploration and attempt for the research topics, which was introduced in classroom teaching of innovative mechanical design by authors. And this paper also discussed many questions about the research topics, such as design principles, design elements, layout of issues, assessment and evaluation. Implementation of the research topics, made up for the lack of practical training in actual teaching, and helped students changed knowledge learned in the classroom into the design, operation, production, innovation and practical skills. Years of classroom practice shows that implementation of the research topics improved students' design capabilities, developed students' practical hands-on ability, mobilized the enthusiasm of students to learn mechanical, enhanced the students' ability to innovate, strengthened the ability of the students' teamwork.

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Research and Practice on Teaching Reform of Mold Special English in Vocational University

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Abstract. Under the premise of training practical ability of students as a starting point in order to meet market demand, according to the author's practice and thinking in teaching process, research & practice is fully explored on teaching reform of mold special English in vocational university in all domains, such as teaching objective, curriculum setting, teaching mode, teaching materials, teaching examination, teacher training, etc.

Keywords: Vocational University, Mold Special English, Teaching Reform.

1 Introduction

The special English course in higher vocational education is the one which must be offered in talent training scheme. The author in the mold special English teaching practice makes some thinking for the current mold special English teaching situation and the teaching reform way. After discussing with the mold special teachers and students, research & practice is fully explored on teaching reform of mold special English in vocational university in all domains, such as teaching objective, curriculum setting, teaching mode, teaching materials, teaching examination, teacher training [1], etc.

2 Teaching Objective

From the survey of first mold enterprises and the return result of previous graduates, it is shown that now the manuals of mold enterprise equipment and product are mostly written in English, which contain much special term and special knowledge, so enterprises make the special English ability as an important condition while selecting, introducing talents. Especially in recent years, in some foreign companies and joint venture companies, the ability such as reading English production flow chart and craft production operating essentials, understanding foreign expert's technical guidance and requirement and so on, is regarded as employee's qualification for post basic capability, which is a powerful post migration condition.

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If students have mastered a certain amount of theoretical knowledge and been familiar with the production equipment, process, as well as they can directly communicate technical exchange with foreign experts, it is quite sure that they can have larger upgrade space and more opportunities for management and technical posts after two or three years[2].

According to the above description, the author considers that the teaching objective of mold special English course is to lay a good foundation in the future for students engaged in mold related special industries, its main elements include the preliminary ability such as requiring and exchanging mold special English information and expertise, writing overview and summary, translating and so on. Then students can master common vocabulary of mold special technical terms, and explain in English related to mold special knowledge, and meet the needs of English language basically.

3 Curriculum Setting

The orientation and curriculum setting of mold special English course is a prerequisite for teaching reform.

For a long time, the course has been positioned as the special elective course, not receiving sufficient attention. Actually, mold special English course has its own uniqueness, which contains not only English knowledge but also expertise, so the orientation should match other courses as a special compulsory course.

Class hours of the course should be increased from original 30~40 hours, and be ensured that at least 2 hours per week of instruction, and best be scheduled two teaching semesters. Otherwise, the total amount of class hours is too little, then effecting teaching quality.

Small-class-based lecture is called for the course teaching according to language learning discipline [3], in order to facilitate interaction exchange and information transfer between students and teachers.

4 Teaching Mode

At present, CDIO pilot teaching reform of mold specialty is in progress in the author's university. CDIO is a engineering education reform mode put forward by the MIT and Sweden three universities in foundation support of the wallenberg from 2000-2004 after the multinational research. CDIO engineering education mode is the latest achievement of the international engineering education reform in recent years, CDIO represents conceive, design, implement and operate, which is concentrated summarization and abstract expression on "Learning by doing" and "Project based education and learning". It takes the life cycle of projects (including the products, production processes and systems) from research and development to run as a carrier, allowing students to study engineering initiatively, practically, and having organic link between courses.

CDIO is a set of educational mode in accordance with special growth rule and characteristic, through a variety of teaching methods to offset certain inadequacies of engineering professionals, aimed at cultivating creative engineering talents of all-round development. In the author's view, CDIO engineering education mode also applies to mold special English teaching, in favor of developing students' English proficiency, then mold special English teaching can be combined with this pilot teaching reform.

CDIO engineering education mode is implemented as a project, so while mold special English is teaching, a project can be designed for some major problem, which is to expand the teaching according to four links of CDIO educational mode.

For example, there is a project of plastic mold design, the first step is to conceive, while setting a scene like that: A mold company wants to hold its conference on research and development of new product, the teacher is the product project manager,and the students are the company staff of different research and development department,which are divided into groups, each representing different sectors.

The second step is to design, during the meeting, each department will be responsible for describing the product research and development including standard mold procurement, part design, mold operating principle demonstration, mold Assembly and test, mold maintenance and so on.

The third step is to implement, student groups are going back to put task into practice, each team member is together with the team cooperation, A is responsible for the collection of relevant information, B is responsible for doing PPT, and C is responsible for the main presentation.

The fourth step is to operate, after a period of time, each sector needs to show, to make a statement on the new product development at the conference.

In each of the project, the course of teaching can be flexible by using a variety of teaching methods such as situational method, interaction method, experience method and role playing method. Through these teaching methods, Mold special English teacher can stimulate students' interest in study and innovation spirit, improve the students' autonomous learning ability, and carry out the project research team based on the reform of teaching method and exploration.

5 Teaching Materials

Reform of the teaching materials is closely related to the reform of mold special English teaching. Mold special English teacher should be more than just teacher, meanwhile be curriculum designer and materials writer. At present, there is no consistent programmatic requirement for mold special English, aim at teaching objective, in accordance with established specialty, student circumstance, and the number of hours per week, mold special English teacher can write teaching materials.

Teaching content of teaching materials should reflect the characteristic of higher vocational education which has professionalism and availability. Employment objective of vocational students is clear, so the selected content should be closely

related to the mold specialty in order to enable students to have interest and passion. For example,the selected content can include some English instruction of technical equipment from production line,such as original English manual of working principle of injection molding machine, hydraulic machine, numerical control machine tools and other devices. Pure original English writing is smooth and easy to read. By learning content around a topic, some of special word occurs repeatedly, according to language learning discipline, students are likely to form a permanent memory.

For another example, English version of CAD/CAM software is useful. Current students use a wide range of CAD/CAM software, and its English version is running more stable than Chinese version. When students use an improved version of the software, in particular, students feel fresh and become familiar with the background knowledge on reading comprehension [4].

On the structural design of teaching materials, according to advocate of higher vocational education projects teaching methods, combined with ongoing CDIO mode for engineering education reform, for ease of use new methods such as the case method, research method, and task-driven method etc., mold special English teacher can explore some useful attempt. Then teaching materials will be closer to the specialty and actual students' situation, more likely to develop students' English proficiency.

6 Teaching Examination

Mold special English examination currently implemented is still mostly in written form which intuitive is not strong, and study is "mechanical memorizing" instead of "creatively learning and applying".

In the author's view, mold special English should diversify the direction of examination. For example, several small tests can be taken in each semester. Psychological study has shown that, the feedback from the learning outcomes obviously affects the learning effect. Because on the one hand, learners can adjust learning activity according to the feedback information and improve learning strategy; on the other hand, learners can achieve better grades or avoid making mistakes, then enhance learning motivation and keep learning initiative.

Tests could take the form of diverse, such as open or closed-book exam depending on the circumstances, comprehensive classroom presentation, and homework after the course, even the form of an oral examination. It effectively avoids such more disadvantages as cram before Exam, inconsistent of learning process, non-solid foundation, also enables students to learn actively, so that the whole study is intense and effective. Of course, mold special English examination can also be designed depending on the situation in teaching process instead of sticking to a form.

In short, the reform of Mold special English examination method is to ensure that the examination should be in every link of the teaching progress and take accounted for certain proportion. In addition, attention should be payed to the process control.

7 Teacher Training

Mold special English teaching is a new challenge for teachers in vocational university. It requires teachers not only to have solid language skills, but also to have certain special basis. Currently, most mold special English language teachers are special teachers with a master or doctor degree, which have higher special academic level, but quite weak basic skills of speaking and pronunciation of English, so it is difficult for them to explain sentences and paragraphs thoroughly from the point of view of language [5].

At the same time, mold special English teachers are mostly lack of rich enterprise experience, and the teaching system also has not been set up that the enterprise personnels can come to teach in university. Therefore, the overall level of our Mold special English teacher has a large gap compared with international education.

In order to solve these problems, some measures are taken following.

Mold special English teacher's language and teaching methodology should have specialized training, to improve their basic level of language skills of listening, speaking, reading and writing, while learning English teaching methods, English psychology, teaching practices and other aspects of special learning.

Through introducing incentives, teachers bearing mold special English teaching can be given a certain amount of subsidy and linked honor, thus to stable mold special English teachers, to encourage teachers with certain foundation engaged in the teaching of the course to prevent mobility of teachers.

Mold special English teaching can be taken by English teacher and special teacher both together[6], through discussion and interaction, cooperative analysis, while identifying the learning needs of students, designing teaching content and teaching activities, organizing CDIO projects, thus to improve teaching level and to ensure teaching quality.

Mold special English teaching also can be taken by Enterprises and senior or famous engineering technicians and management staff as part-time professional teachers, and it can make the students understand the actual need of the enterprise as early as possible, and improve the students' learning initiative and enthusiasm of purpose.

8 Conclusions

Mold special English teaching reform is a gradual process,a combination of process and results, and is a complementary and cross of the theory and practice. To foster moral, intellectual, comprehensive and innovative professionals, the research and practice on teaching reform of mold special English in vocational university is valuable.

If the significant change has not been taken for the traditional curriculum system, teaching concept and learning method, it will be an impossible task to win over this challenge.

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The Mechanism of Comparative Advantage and Competitive Advantage: The Slope Model

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Abstract. This paper constructs the slope model of the revolution between comparative advantage and competitive advantage in accordance with the logical guideline of point-line-side-system, which is also called "54321" model, Five elements are government, labor, organization, capital and technology and shorted for GLOKT. Four assumptions refer to scale economy, imperfect competition, product differentiation, coordination of supporting industry, which are shorts for SE-IC-PD-CSI. Three paths refer to those three classes from the comparative advantage to competitive advantage, in which $P_{Ⅰ}$ refers to Class Ⅰ of comparative advantage. PⅡ refers to Class Ⅱ and PⅢ refers to Class Ⅲ. Two platforms can be described two slopes of the industry mountain, which are similar to the particular industry import goods to the developed counties or to the developing countries. The ecological system refers to the whole system added the time element and becomes a dynamic and actual process.

Keywords: The comparative advantage, Competitive advantage: The slope model, China's Auto Industry.

1 Introduction

The comparative advantage (CPAA) is the foundation of international trade theory, was firstly proposed by Torrens in the paper of "An Essay on the External Corn Trade" in 1815. Overall, most scholars agree that the continuation of the logic of international trade theory clue is: the classical theory of comparative advantage trade theory composed by theory of absolute advantage (Smith, 1776)[1] and the Comparative Advantage (Ricardo, 1817)[2]; to the Neo-classical trade theory composed by the factor endowment theory (Heckscher, 1919,Ohlin, 1933) [3]and the resource endowment theory (Samuelson, 1941)[4], to the new trade theory (Krugman, Helpman,Grossman,1980s)[5];to the new classical trade theory (Xiaokai Young,1990s)[6]. We put forward that CA is the circulation area of a production or efficiency advantages, as long as a country has the higher efficiency in a product exchange or production compared to other countries, regardless what led to this relatively high efficiency, it has a comparative advantage in the products.

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Competition is the struggle to the particular things of different actors, including persons and countries. Where relevant two or more parties try to get the limited benefits, there will be competition. Competitive advantage (CPEA) was firstly proposed by British economist Chamberlain in 1939, it can be separated into four layers, such as for product, enterprise, industry and nation. To keep the study of consistency and continuity, we focus on industry CPEA.

2 The Slope Model: From CPAA to CPEA

Although the distance from A to E in the alphabet ABC song is just two letters, the distance from CPAA to CPEA is more complicated than two letters. Because of the differences of the definition, there are six differences and six affiliations between CPAA and CPEA at least. Six differences refer to the differences of the assumptions, composition of elements, development characteristics, segmentation types, trade policies and philosophy embodied. Six affiliations are as follows: both of the two advantages research that the domestic production and consumption should remain what kind of structure to maximize the level of national welfare under the open conditions of a country, in which comparative advantage focus' on the factor endowments of different circumstances international division of labor and cooperation while competitive advantage concerns more about the distribution of benefits of international products under the condition of the same factor endowments. In content, comparative advantage is the initial stage and one of the manifestations of the competitive advantage; it's a necessary condition for competitive advantage.

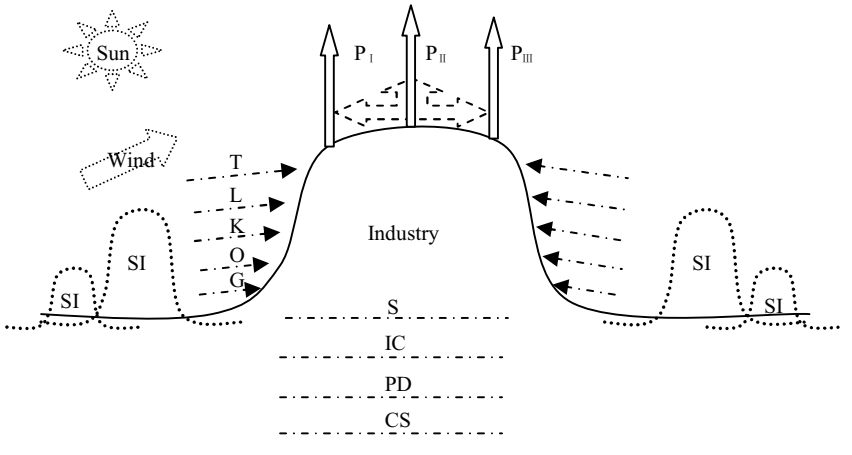

Fig. 1. The slope model: from CPAA to CPEA

This paper constructs the slope model of the revolution between comparative advantage and competitive advantage in accordance with the logical guideline of point-line- side-system, which is also called“54321” model, including five elements, four assumptions, three paths, two platforms, a ecological system. Even more it builds "human" type model to explain five elements of the relationship. The slope model from CPAA to CPEA is as shown in figure 1.

2.1 Five Elements

Five elements, are the points from CPAA to CPEA, which refer to government, labor, Organization, capital and technology, shorts for GLOKT. Among the five elements, labor, technology and capital are the emphasized elements of CPAA; meanwhile, organization and institution are the emphasized elements of CPEA.

2.2 Four Assumptions

Four assumptions refer to scale economy, imperfect competition, product differentiation, coordination of supporting industry, which are shorts for SE-IC-PD-CSI. In which, scale economy, imperfect competition and product differentiations are the emphasized elements of CPAA; meanwhile, related industry cooperation is the emphasized element of CPEA. As the basic conditions of advantage transfer, the assumptions are at the foot of the hill.

2.3 Three Paths

Three paths refer to those three classes of CPAAs turn into CPEA. P Ⅰ refers to Class Ⅰ. P Ⅱ refers to Class Ⅱ. P Ⅲ refers to Class Ⅲ. Class Ⅰ of CPAA belongs to absolute comparative advantage, Class Ⅱ of CPAA belongs to relative comparative advantage and Class Ⅲ of CPAA belongs to absolute comparative disadvantage. Dotted lines indicate the Inclusiveness of the three paths, which means the three paths can convert to each others in particular conditions.

2.4 Two Platforms

Two platforms can be described two slopes of the industry mountain. Considered the sun and wind, the slope with good sun and wind is usually described south side, which can properly explain the certain industry input goods to developed countries. To the contrast, the other slope refers to north side and input goods to developing countries.

2.5 An Ecological System

The ecological system refers to the whole system added the above mentioned, except for elements, including assumptions, elements, paths, slopes, SI stands for the supporting industries, the sun and wind stand for the other contents, such as the diversity of consumer demands, revolution, etc. last but not the least, time element should be considered in the ecological system, the dynamic process from CPAA to CPEA plays a vital important role in the actual economic activities.

3 The Empirical Study of China's Auto Industry from CPAA to CPEA

The auto productions of four main countries from 1970 to 2009 are shown in figure. We can see China's auto industry developed quickly with the rapid growth of China's economy and the raise of the level of national income. China has become the world's largest producer of vehicles in 2009, and has formed a multi-species, the full range of types of vehicle and parts production and supporting systems. According to the detailed and abbreviated contents, we can analyze the slope model of China's auto industry from CPAA to CPEA, the advantage factors of policy and culture are the class Ⅰ of CPAA, in which the front one stands for stable policy of Chinese government and the later stands for culture advantage and demographic dividend. The advantage of domestic market and natural resources are the class Ⅱ of CPAA, in which the front one won't be saturated recently and the later one is inherent CA. The advantage of capital, technology, organization, related industries and scale economies are the class Ⅲ of CPAA, which need to be improved.

4 Summaries

The distance of class Ⅰ from CPAA to CPEA is the shortest, so China's auto industry should persist on the stable economic policy to maximum the policy and culture advantage, which are helpful to be CPEA. In order to transfer class Ⅱ of CPAA to CPEA, China's auto industry should strengthen the quality of brand and effectively utilize the advantage of domestic market and natural resources. To turn class Ⅲ of CPAA into CPEA, China's auto industry should try to solve the existed problems with the method of leaning by doing, including studying the modern management experiences and the measures of encouraging research and development.

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The Exploration and Practice of Excellent Courses Characteristics Construction

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Abstract. Excellent course is one of the important contents of "quality project". The present article begins from the connotation, requirements and significance of the construction of excellent courses, exploring the basic ways of constructing special excellent courses. The article believes that constructing a team of high level teachers is the key of the construction of excellent courses, and the reforming and innovating of teaching content and teaching methods are the core of constructing special excellent courses. And at last, by integrating the practicing of our school's construction of the province-level excellent courses of Automatic Control Principles, the papers also introduces some measures that our school takes in the construction of special excellent courses, such as to explore a new model of excellent courses oriented by the safety technological development, construction experience and practices of the excellent course, including teaching, practice teaching platform construction, the website construction and development, curriculum characteristics, network resources construction, science research promoting the teaching contents etc.

Keywords: Excellent courses, characteristics, construction.

1 Introduction

Excellent courses are the soul of higher education courses construction. Excellent courses construction is the important content of "quality project", and it gains a relatively good effect in our country. It, to some degree, pushes ahead the changing of teaching concept, the reform of teaching methods, and the innovating of teaching contents, at the same time, it brings about a set of courses' reform and innovation, pushes ahead all courses' curriculum construction, making higher education suitable to the requirement of economics and society.

Excellent courses means to form demonstrating courses that have first class teachers, first class teaching contents, first class teaching method, first class teaching material, first class teaching management. Courses constructing level is the important symbol of teaching quality. High level, specialty and demonstration are the basic requirements of excellent courses.

The nature of excellent courses construction is to adapt to the information technology, especially the rapid development of internet, to bring the newest scientific technology into the classroom, so as to create a set of excellent courses that

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embody the modern education ideology, accord with the feature of scientific and advanced, have brilliant features, and by the same time can rightly use modern education techniques, methods and means. Excellent courses have more obvious teaching effect than that of traditional teaching, and they also have the functions of demonstrating and radiated expanding. By the construction of excellent courses, we can push ahead the teaching reform, enhancing the teaching quality of higher education. Excellent courses construction is a completely new systematic project, we can not simply understand it as putting the courses into the internet. We have to make an overall reform and innovation on teaching staff, teaching contents, teaching system, teaching methods, teaching means, teaching material construction, practice teaching, evaluation mechanism et al, and only by these can we really create a excellent course that is fit for the requirement.

2 The Specialty Construction of Excellent Courses

Excellent courses' features depend on the features of running school. The features of running school refer to the advantageous characters of a school that is different from other schools and that is formed during the process of running the school. Only by forming the development specialty, can a school stand out its value in the competition with other schools, and thus keeping alive. Specialty is quality, competitiveness and brand. For the most regional university, strengthening the specialty of running school, to make a living and development by specialty is the basic leading thought of running the school [1].

Specialty is the basic property of excellent courses. Whether it is country-level, province-level or school-level, the construction of excellent courses should show out its "high level", "specialty" within the corresponding scope. Regional university can mostly win by specialty, namely, stand firmly on school's real situation, according to the advanced teaching concept, to have scientific orientation, to find and create a new way, to discover a new growing point, living up to "having something that others do not have, doing something better than others, making specialty out of the same thing", thus forming a special style.

Industry colleges should start from the reality when carrying out excellent courses construction, to make scientific orientation and extending the advantages while avoiding shortages; in other hand, basing on the self running school history, universities should integrate the local economic culture, digging deeply the potentiality, searching the new development point, standing out specialty and creating brand. Only by this excellent courses construction basing on self specialty, can the industry colleges really exert their advantages of curriculum, subjects and profession.

3 The Construction of Teaching Staff

A team of teachers with obvious specialty, optimized structure, having both moral and ability, hard working on the teaching and skillful at teaching are the key factor to make a good excellent courses construction. The construction of excellent

courses should base on the self specialty, stand firmly on the reality of the local social economics and history culture, to cultivate a set of "bi-qualified teachers", to create a team of specialty teachers that combine with the old, the middle age and the young, and with balanced distribution of career title and education level, theses are the advantages of excellent courses construction. Only do we own a team of first class teachers with obvious specialty, can we effectively carry out the teaching and science research activities, to fully play the advantage of pushing ahead teaching reform with science research, to create "courses with high level and specilty", to assure the enhance of teaching quality, to cultivate the practical, vocational skill type of talents with high quality [2], [3].

4 The Construction of Teaching Material

The construction of excellent courses should take student-oriented as its basic ideology, enclosing tightly the cultivating object, confirm and optimize courses with science and reasons, to select the teaching content with the nature of scientific, advanced, practical and innovative. Teaching material are media of teaching content, the teaching material quality concerns the quality of courses. Industry colleges may select the major teaching material with great carefulness, and, starting out from the reality, write out assistant teaching materials. Excellent courses should stand out their specialty of running school, realizing the harmonious combination of transferring knowledge, cultivating ability and enhancing quality.

5 Reforming the Courses Teaching Methods

The advanced and special teaching methods are the important channels of excellent courses construction. In the construction of excellent courses, the reform of teaching methods has to be strengthened, to fully embody the concept and ideology student-centered and teacher-directed, to apply actively the teaching style of enlightenment, discussion, opening up and so on, and so as to effectively use the modern teaching means. Basing on every course's feature, we should explore, adopt a set of teaching methods that is fit for ourselves, effective and easy to be accepted by the students, so as to enhance students' learning activity and creativity significantly.

6 The Construction Experience of Province-Level Excellent Courses

In 2009, we have created the province-level excellent courses of Principles of Automatic Control. During the construction, we first stand out the course specialty of safe science, and putting teachers' scientific research results into the teaching contents. Because the excellent courses are mainly presented on the internet, we thus put more effort on the construction of courses website specilty. By teaching on the

internet, we can put various resources into the website's teaching resource; students can acquire the related information of the courses from the internet, which is mostly convenient for student's autonomous learning. Our online courses of Principles of Automatic Control have the following features:

6.1 Good Operating Windows, Richness in Both Pictures and Words

The aims of website construction are to provide students broad learning materials, to present the concept of human-oriented. These online courses cover a wide range of knowledge, its contents are rich and its information is huge, and it reflects the innovative teaching system. The website stands out the cultivation of piratical ability and innovative quality, strengthening the stage of researching learning. Directed by serving a safe science development, we explore the new model of online courses construction. The websites are designed and created by the teachers, they can be innovated freely according to the requirement of teaching, thus make them melted into the teaching process. The courses websites have their own features, adopting a lot of good quality pictures, making the contents and forms of the web pages very active.

6.2 The Richness of Content and Resource

Such as courses teaching plan, teaching instruction of online courses, introduction of learning methods, important and difficult points of the courses, exercises and their answers, teaching videos et al. The websites connect to the Automation Specialty Conspectus, which contains huge high quality course wares, demonstrating to the students all kinds of automation control system, providing abundant materials for the control theory study.

6.3 Creating a Solid Teaching Environment

By fully applying the modern teaching means and confirming the internet resource, we provide directive, lively, vivid teaching content presenting method.

6.4 Putting Forward a New Teaching Development Model

Putting forward theoretical teaching——systematically create model——science research project and equipment development. Through science research, we push ahead the construction of subject and putting theory into the practical system. By studying and creating the real equipments, teachers acquire the source motivation of teaching reform, to put the newest scientific knowledge into the teaching materials timely, and thus forming courses and specilty, to actually enhance the teaching quality.

6.5 Online Problem Solving Function

Online problems solving can indirectly "teaching moral, instructing knowledge and solving puzzles", to solve all kinds of problems that students meet during their learning process, and to teach students in accordance with their aptitude, to cultivate personality and to strengthen the effect of interaction.

6.6 The Function of Bringing Learners Bridges and Ligament

The website connects to the national famous Principles of Automatic Control excellent courses, such as Qinghua University, Beijing University of Aeronautics and Astronautics, Shanghai Communication University, Haerbin Technology University and so on. Students can acquire broad contents according to their tastes, and not to confine to only one course.

The new thought of courses construction: Exerting courses group teachers' advantages of all subjects, by solving the coal production safety technical difficulties for companies, especially for the fields of safe production, such as electric technological equipments, electricity-controlled system et al., by thus to push ahead the construction of subjects, promoting the reform of teaching contents. Through science study to enroll students to join in teachers' science study projects, to carry out instruction, helping and leading, to form a systematic education model of forming theory—practice—innovate, so as to enhance students' project practice ability and employment ability. We have to create teaching, science study platform, to enhance teacher and students' science study level, and forming the combination of theory teaching and practice teaching, putting ahead the construction of subjects.

We should take school's information and controlling technology institute as teachers and students' science study opening platform. The research institute takes the creating of special new technology for coal mine's security production and the serving of security production skills training as the forming ways of autonomous intellectual property rights of applied core technology. By coagulating high level science research achievements, we take the cultivating of university students' innovating ability to be the development aims.

Principles of Automatic Control courses group teachers are the major information and controlled technology research institute, they are also the main body of automation professional teaching team and science study team. The team leader is acted by our college famous teacher. Courses group teachers take science study and subject construction as the cutting point, taking the information and controlled technology research institute as the sciences study platform, and thus enhance the aftereffect of courses teaching reform, making teachers have "a pail of live water".

7 Creating a Complete Excellent Courses Evaluating Standard

Whether it is course objects or contents, course teaching resource (teaching materials, course wares and so on), teaching methods and technology, teaching effect

et al. course evaluation internal factors, or may it be the teaching condition and teaching environment, teacher quality and level, course management system et al. outer factors of course evaluation, the evaluation standard and weightings all have to reflect regional colleges' self specialty and development direction. Seen form the aspect of country, making and improving excellent course evaluation standard should also have to pay more attention to leading regional colleges to stand out their self specialty and obvious development direction. Only do we pay enough attention to the evaluation standard of excellent course, can we effectively promote the construction of regional colleges' excellent course construction, and to fully exert the excellent course's function in enhancing regional colleges teaching quality.

Regional colleges, by the construction of excellent course with specialty, will certainly exert fully their schools' existed resource advantages, this in turn will make the course's specialty advantages to have stronger embodiment, while those relatively weak courses will also be promoted during the process. To provide overall, good quality courses for cultivating good quality talents with specialty is beneficial to regional colleges in the arriving of their final purposes of "obvious specialty", "overall enhancement", thus to realize the enhancement of teaching quality and school running level.

8 Conclusion

Excellent course construction is a systematic project. The construction of excellent courses has huge promotion to the construction of teaching staff, the teaching contents and methods, the teaching materials, the teaching management, and the enhancement of teaching quality, and brings about other courses over teaching level et al. And the construction of excellent courses specialty, teaching reform are the source motivation of making courses to have persistent development. The core of university's excellent courses construction is to reform and renew teaching contents and teaching methods. The key factor of excellent courses construction is to own a team of high level teaching staff, and a complete evaluation, encouragement and monitoring mechanism is the powerful guarantee of the consistent development of excellent courses.

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CDIO Engineering Applied Talents Training Mode and the Way

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Abstract. Local Colleges closely rely on the background of regional industry, to explore for the local pillar industry clusters, Develop engineering talent to do a professional features,to service for development. In this paper, Jiaxing, Zhejiang region rely on textile and garment industry cluster, to build capabilities of modern Textile and apparel professionals engineering training model for the target, Learn CDIO teaching to diverse reform measures as the starting point, Explore the textile and garment industry cluster based on the engineering talent to develop new ways.

Keywords: CDIO**,** Engineering talent, industrial clusters, mode and the way.

1 Introduction

Society for talents have common requirements, and that is as long as talents, you should have the corresponding knowledge, ability and quality. Talent demand has diversity in Higher education popularization stage, from categories to points, can be divided into research, applied and technical talents. Applied talents for the society is the application of the objective law for direct interest mainly by professional talents, Applied university and institute, is the main body part of higher education system . Jiaxing university is a local applied undergraduate college with growing up as higher education popularization.Target in "teaching model, applied and local", with The development of higher education, in textile, clothing professional engineering application talents ability training, some beneficial exploration and practice have been done in our college .The difficulties and problems are Further clear up in local applied undergraduate professional engineering education.

2 The Meaning of Applied Talents and Training Mode

The fundamental task of institutions of higher learning is to cultivate talents, and the talent training must be consistent with the orientation, must meet the needs of the society for talents actual. Jiaxing university is put its personnel training for positioning in regional economic and social development for senior specialized talents cultivating applied, it is the needs of the development of school, also is the

L. Zhang and C. Zhang (Eds.): Engineering Education and Management, LNEE 112, pp. 571–575.
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place where the needs of the development of economy and society ,From this point, the college will lose its survival development foundation. Applied talents refers to the general scientific theory applied to all kinds of practice activities talents, this type of talent is to use the basic task and change the objective world and subjective world, and to direct access to economic benefits and social benefits for the target Applied talents solve "do" and "how to do" problem. Application talents mainly to industry needs focus on training, engineers, designers, economists and management staff etc, Pay more attention to the systematic training ability, knowledge, ability and quality requirements of the three aspects, the ability for this is the basic characteristics of the applied talents.

The engineering ability of higher engineering education students is referring to the comprehensive quality of students in engineering practice shows the real skill and energy. How to cultivate ability? Mainly from practice ability training in the teaching of up. Application talents of practice teaching should be throughout the course of talent training, should run through the course teaching, especially based on industry background extr acurricular design and practice. In recent years, the college student difficult obtain employment and enterprise recruit less than satisfied staff cause social concern. Personnel training convergence problem is one reason; At the same time, because the Chinese economy development and the transformation of society for talents, there the demand of diversification; The personalized needs of enterprise of talent is more and more obvious, personnel training and social demand disjointed, talent specification and industry, enterprise does not match demand .These problems caused the poor phenomenon of talent social adaptability, employment adaptability. In order to solve this problem, since 2009, jiaxing in zhejiang province, relying on the unique textile & clothing industry advantages in understanding connotation applied talents requirements (ability for this, industry characteristics), cultivation idea (pays attention to practice, the school-enterprise cooperation), and on the basis of The reference of foreign CDIO's experience and practice, combined with the affection, market, in the student entrance and organization, teachers team, professional setting, teaching arrangement, curriculum system, teaching content, teaching mode, the graduation design, the employment of reform and innovation, Internalization formed "engineering training ability for this place" fusion between service applied talents ability training mechanism.

3 The Mechanism Construction of Textile and Clothing Engineering Ability Training

Based on the fast development of Zhejiang textile and clothing industry, It is the urgent needs of talents, in 2009, we start some of the CDIO model based on foreign talents training mode reform and teaching methods reform, In our textile engineering get a good result. In the teaching process, the experimental courses, scientific research, and the whole project subject contest course system combined, and need to learn and master of professional theory and engineering ability training integration into an organic whole, Emphasizing on the problems and requirements for the

pilot, we put the student into CDIO teaching scene, to learn and practice process books cross interaction. The study of the theory and engineering project cross the interaction, the learning in school and the market demand, the enterprise research and development across the interaction, this greatly stimulate the students' learning initiative and enthusiasm..

With the above engineering education basic train of thought we made and revised professional training program of textile engineering, fashion design and engineering for chance, In a new training plan within the framework of overall, according to the modern textile and clothing industry on engineering theory knowledge and professional ability request, developed the new course system, To project design as the guidance, engineering ability training as the goal, through the project design professional knowledge of course, all the theoretical system of the learning and skills training system and the ability to combine, the implementation of the professional textile and garment engineering application talents training:

Teaching Plan. We increase abundant practical project and complementary with industrial practice, science and technology research, use of class and modern learning sites/laboratory make plans with lively, practice, the characteristics of the team, Timely communication with industry, through a wide assessment and evaluation constantly improvement plan.

Teaching Method. Learning initiative improve the learning efficiency, so we have added active study and practice project; Emphasize the ability to analyze and solve problems; Strengthen learning feedback mechanism, invited the alumni and industry elite as a consultant to the teaching method, practical exercises.

Practice Field. We put conceive, design, implementation and engineering education into the operation experience of learning environment, Set up practice and training field to support conceive, design, implementation and operation activities practice for engineering (municipal key laboratory, teaching practice base) .To academic competition and all kinds of design competition of high-quality curriculums, focus on training students' "work" and "make things" ability.

Learning Evaluation. Different skills must use different ways to examine ,Professional knowledge use the paper or oral test, and conception, design, implementation and operation of the related ability is the records, report, from review, phei, big assignments, simulation and so on , The way of evaluation to the study way is widely diverse, and established a more reliable evaluation system.

4 Applied Talents Engineering Ability Training Measures

For higher education to cultivate students must reflect toward modernization, the world and the future, reflect the overall requirements of Zhejiang province—"business make people rich,Innovation make province strong", We take the students future growth and engineering ability training as center, Promote students' engineering ability from multi-channel. the main measures:

Implement CDIO Teaching Philosophy, Reform the Course System, Promote the Course Construction. Implement CDIO teaching philosophy, to cultivate engineering application talents as the goal, to develop capacity as foothold, with theoretical teaching and practical teaching, scientific research training for an organic whole, Service industry for the principle, the course system adjustment. In the curriculum system reform, the only pay attention to the teaching of the experience and knowledge, theory teaching and practice teaching, the current situation of separate each other , Instead of practice teaching, scientific research and teaching theory, the interaction, the complementary with each other, and to pay attention to the students' learning ability, project implementation and management ability .Advocates of the industrial environment into teaching and interactive teaching, problem-based built a batch of provincial level, and soon the exquisite course, published a batch of teaching material, bear a batch of provincial and municipal educational reform subject.

Conceive and Design Engineering Research Task, Provide Teaching Environment to Ensure the Engineering Application Talents. With "about the learning ability, strengthen the problem guide, design research task, constructing the learning environment" for reform ideas. In the basis of professional experiment, synthetic experiment and professional research learning, we practice teaching plate structure; With the engineering practice base, outside the engineering practice base construction practice, we provide the practice teaching plate structure; To students research organization , as research practice teaching plate for the development, the innovation research project execution and completion of the project. Through the above three plate "engineering practice teaching system of training", we enhance the students' project practice ability, science and technology research, development ability and knowledge innovation ability.

To Project Teaching of High-quality Curriculums, for International Cooperation, Innovate Talented New Mode. In 2006,Our school and the German STOLL company (the world's largest computer knitting machine manufacturer) form partnerships, united for the domestic and foreign sweater industry training senior fashion designer. Every year take 15 students "3 + 1" to training mode from clothing design and engineering, according to international standard training and issue the "by Stoll computer knitting machine of high-level programming "and five other industry qualification certificate, It was the German known as innovation sweater senior design talents training mode.

Constructing Students Technology Organization to Course Contests, Improving the Students' Scientific Research and Innovation Ability. In 2006, we established the science and technology association "T&G"(textile and garment),with the industry and the subject based on, as the main body of the student."T&G "science and technology association adhere to perennial organized under the principle CDIO in the extracurricular technological activity, They have compled the science and technology innovation of college students of zhejiang province, zhejiang province "New seeding plan" project, and SRT technology projects, Participate in the teacher subject more than 30, a large student works show five games. Take system further training plan, combined with professional

characteristics, the training of the students' scientific research and innovation ability, Students in all kinds of professional journal papers and all kinds of competition prizes in the significant increase in zhejiang province, the "challenge cup" and a series of awards, and to promote the students' scientific research and innovation ability.

Promoting Discipline Construction, Developing Teachers' Scientific Research Level, Back-feeding Industry and Students. Adhere to the subject construction as the leader,the teaching work as the center, promote the construction of the teaching staff and the knowledge structure, professional structure, ability structure. Nearly three years to declare success, natural science fund project, zhejiang province national research projects of major scientific and special etc, such as science and technology plan projects more than 30 items, National new product and zhejiang provincial new products etc .The scientific research achievements have feedback of industry and students, greatly improving the teachers in our local industry status, to strengthen the contact with industry, for improvement of students' project ability to lay the foundation.

5 Conclusion

At present,it exists the phenomenon that pay attention to the theory, look down on practice in the cultivation of professionals, students' ability is insufficient, existing problems, such as ability scare etc, How to solve engineering talents ability training is a problem. we have made some achievements in the engineering application talents of the practice, for local colleges significance of reference to engineering specialty. Based on the concept of CDIO engineering applied talents training mode and the teaching method reform got jiaxing university and zhejiang provincial teaching reform project support,we believe that with the further promotion of the teaching research, application talents of ability will make greater achievement.

Acknowledge. The authors express their sincere gratitude to the teaching reform of jiaxing university 2009 subject "CDIO based on the textile & clothing engineering personnel training mode" (85150917), the new century educational reform subject of zhejiang province 2010 "CDIO model of textile & clothing engineering teaching method reform and practice of research results" (zc2010061).

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The Discussion of the Revenue Management and the Pricing Model of the Scenic Spots in China

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Abstract. In recent years, the ticket price of many scenic spots in China has increased substantially. Xuefeng Sheng, who works in the peak tourism research centre of Anhui, argues that scenic spot is one "yeast industry", which drives the dining, the lodgings and the culture of service industry; "only prices" does not necessarily for benefits. This article introduces the dynamic pricing revenue management theory and pricing model, aiming to provide a much more reasonable pricing scheme, and also provide reference for the related fields.

Keywords: Scenic Spots, Revenue Management, Pricing Model.

1 Introduction

In recent years, the ticket price of many scenic spots in our country have increased substantially, In China, the ticket prices of tourist attractions are mainly led by the Government, and it usually use the cost-oriented pricing method, so it is easy to form an effect of "cost increase – rising in ticket price - a further increase of cost – rising in ticket price again," Therefore, the use of a pricing strategy on the basis of revenue management will have a great significance.

2 Revenue Management and Pricing Methods

Applying revenue management method to set ticket price is a typical market-oriented pricing. It assumes that the production or service capacity is fixed during a period of time, and variable cost is zero. The pricing method is taking tourists willing pay (W_i) as the basis of setting price. We take the single tourist attractions for instance, so the attractions ticket price which the consumers can accept set forth as follows.

$$p_i = w_i = \int_{p^0}^{\infty} F(p,z)d_p \tag{1}$$

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In the formula: P stands for the costs from the Starting point to the scenic spots, Z stands for Socio-economic characteristics of the population. Because there are many consumers, the total revenue TR of the scenic spots is equal to the sum of different price that the consumers can accept. Revenue management pricing method is the typical market pricing method, which reflects the interests and games of the tourists and the scenic spots in the market.

3 Establish the Pricing Model Based on Revenue Management Theory

Suppose. Firstly, we suppose the capacity a scenic spots as M, namely that the quantity of sold tickets $N \leq M$, scenic spots accepts the tourists' booking during the period [0, T]. In the mean time, we suppose there are two given prices: full fare (p_1) and fare at a discount (p2), $p_1 > p_2$. When the tourists' need density is λ_1 and λ_2.

When the quantity of remaining tickets is n, to determine the price, we need to determine the switching points Zn of price, and the interval of two adjacent customers obeys exponential distribution of parameter λ, so we obtain:

$$p(s,n)=\begin{cases} p_1 & t \le s \le Z_n \\ p_2 & Z_n \le s \le T \end{cases} \qquad f(s)=\begin{cases} \lambda_1 e^{-\lambda_1(s-t)} & s \in [t,z] \\ \lambda_2 e^{-\lambda_2(s-z)} e^{-\lambda_1(z-t)} & s \in [z,T] \end{cases} \tag{2}$$

When the quantity of remaining tickets is n, we can obtain:

$$V(t,n,z_n)=\int_t^{z_n}[p_1+V^*(s,n-1)]\lambda_1 e^{-\lambda_1(s-t)}ds+\int_{z_n}^{T}[p_2+V^*(s,n-1)]\lambda_2 e^{-\lambda_2(s-z_n)}e^{-\lambda_1(z_n-t)}ds \tag{3}$$

①When $n=0$, namely that the tickets are sold out, the remaining tickets is zero and scenic spots' expected revenue is to make the Eq.3=0.

②The visiting value of a scenic spots is perishable, so when t=T, the unsold tickets will not bring income to the scenic spots, as the Eq.3=0.

Other conditions: V (t, n, z_n) is a strictly increasing function of n.

4 The Analysis of the Pricing Model

If scenic spots would like to achieve the maximum expected revenue, time switching point z_n should meet the following conditions: $\frac{\partial V(t,n,z_n)}{\partial z_n}=0$. So the following conclusions can be drawn: ①Decision time t does not affect the position of best price switch point. ②V (t, n, z_n) is a strictly decreasing function of t.

When n=1, V (t, 1, z1) $= p_1(1-e^{-\lambda_1(z_1-t)})+p_2(1-e^{-\lambda_2(T-z_1)})e^{-\lambda_1(z_1-t)}$;

When t= z_1, V (z_1,1,z_1) $= p_1(1-e^{-\lambda_1(z_1-z_1)})+p_2(1-e^{-\lambda_2(T-z_1)})e^{-\lambda_1(z_1-z_1)}$ $= p_2(1-e^{-\lambda_2(T-z_1)})$;

And we could obtain that: $z_1^* = T + \frac{1}{\lambda_2}\ln\frac{\lambda_1(p_1-p_2)}{p_2(\lambda_2-\lambda_1)}$, so $z_1^* \prec T$.

When n>1, solve V (t, n, z_n), and the best prices is p_1 at the time point t.

$$V(t-\Delta t, n, z_n) = \int_{t-\Delta t}^{t} [p_1 + V^*(s, n-1)]\lambda_1 e^{-\lambda_1(s-t+\Delta t)} ds + e^{-\lambda_1 \Delta t} V(t, n, z_n) \tag{4}$$

Suppose that V (T, n, z_n)=0,and the best price is p_2 at this time. With the backward calculation over time, to z_n, when the derivation of V (t, n, z_n) is zero, the best price switches from p_2 to p_1, and the switching time is the best price switching point.

5 Numerical Examples

It is assumed that the capacity is 1,000 persons per day, and 10 persons are a unit. We suppose there are two given prices: full price is at120 CHY / person and discount price is at 80 CHY / person, so there is p_1=1200, p_2=800. According to the previous data, the demand density is 800(person/day) during the high price application period, and during the low price application period, the demand density is 1400(person/day). By using the model and writing the Matlab program, we can get the following results.

Table 1. The Best Price Switching Point

N	z_n	N	z_n	N	z_n	N	z_n	N	z_n	N	z_n
1	9.968	11	9.134	21	8.140	31	6.988	41	4.429	51	1.732
2	9.899	12	9.039	22	8.031	32	6.858	42	4.168	52	1.458
3	9.833	13	8.940	23	7.922	33	6.741	43	3.901	53	1.179
4	9.750	14	8.848	24	7.808	34	6.624	44	3.628	54	0.912
5	9.656	15	8.752	25	7.691	35	6.491	45	3.360	55	0.628
6	9.578	16	8.648	26	7.578	36	6.368	46	3.090	56	0.350
7	9.490	17	8.551	27	7.460	37	6.242	47	2.822	57	0.071
8	9.391	18	8.450	28	7.353	38	6.119	48	2.545	84	0.000
9	9.306	19	8.351	29	7.233	39	5.989	49	2.283	85	0.000
10	9.221	20	8.239	30	7.112	40	5.860	50	2.014	86	0.000

As the above table: price switching point z_n is monotonically decreasing with the number of remaining tickets n, when $n \geq 84$, z_n=0, that means, when the number of remaining tickets are more than 84, the scenic spot should use low price strategy at the beginning of the sales.

6 Conclusions

The article introduces the revenue management theory and the dynamic pricing model, by adjusting the price dynamically, the scenic spots can obtain the maximize

returns, and also the tourist demand can be satisfied. It is a typical marketing method. We hope that the paper could provide a much more reasonable pricing scheme for the scenic spots, and also provide references for the related fields.

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Higher Education: Public Good or Private Good?

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Abstract. Over the past one decade, the view that higher education is traditionally a public good is questioned. This article argues that the higher education should be viewed as a typical public good serving for the public interests and on the other hand, market competition will make the value of higher education disappear. As important social institutions, higher education institutions have been played key role during the social development, benefiting not only the individuals, but the whole society, so the noble and core values of higher education for the sustenance of societies should be protected.

Keywords: Higher Education, Privatization, Public Good, Values.

1 Introduction

Usually, higher education is regarded for a long period as a public good due to its public good nature. In an extent, higher education benefits not only the individuals, but also the whole society. Traditionally, one of the most important functions of higher education is to serve the public interests through teaching and research. However, around the world, there is a growing tendency amongst governments to introduce different forms of privatization into public education systems and to privatize sections of public education. Many of the changes are the result of deliberate policy, often under the banner of "educational reform" to challenge perceived problems or inadequacies of public service education. The privatization of higher education is damaging the basic characteristics and nature of higher education, influencing the management and operation of higher education.

This article aims to emphasize the public good nature of higher education, the social goal of severing for the public interests and protect the traditional social functions of higher education. It argues that higher education should not be viewed as a commodity from which private profits can be made, but as a public good equally accessible to all.

2 The Concept of Public Good

It seems that the term "public good" was first used in the late 14th century and comes from a translation of the phrase "publicum bonum" in Latin. Later, in 1776,

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Adam Smith, analyzing the cause of prosperity of nations, establishes the differences between public and private property. According to this author, public goods are goods that although they may be in the highest degree advantageous to society, however, have such a nature that the profit could never repay the expenses of an individual or a small number of individuals, so they can never be expected to achieve them [1]. Smith states clearly that the public good must be produced by the state through the efforts of all its citizens. Paul A. Samuelson is usually credited as the first economist to develop the theory of public goods. In his classic 1954 paper The Pure Theory of Public Expenditure, he defined a public good, or as he called it in the paper a "collective consumption good". Thus, Samuelson believes that there are ordinary private consumption goods, which can be shared among different individuals and collective consumption goods which all enjoy in common, meaning that an individual's consumption of such property does not entail any loss for any other individual that will make use of that good [2].

Thus economists define public goods as those that are non-excludable and non-rivalrous, i.e., such goods cannot be provided exclusively to some: others cannot be excluded from consuming them; secondly, non-rivalrous means their consumption by some does not diminish the consumption levels of other people of the same goods. Public goods generate large quantum of externalities, or simply known as social or public benefits. Public goods are available to all equally; marginal utility is equal, and the marginal cost of producing public goods is zero. They are also collective consumption goods [3]. A good is non-excludable if a person's consumption of it cannot practically be excluded. The good can simply not be provided while keeping some customers out. It is non-rival if a person's consumption does not reduce the benefits of someone else's consumption of the good [4].

The fundamental characteristic of public goods is that they accrue to groups as groups; they are not divisible into units that can be the unique possession of individuals. Although public goods are often viewed from the demand side as public wants, perhaps a better way to view them is to indicate that public goods can be supplied only to groups as groups, and so demand must accommodate to this fact. The two fundamental characteristics of public goods are non-rivalness and non-excludability. The former means that if the good accrues to on person, it does not subtract from that available to the others, whereas the latter refers to the technical inability to price to individuals. For most public goods, these two characteristics go together, although it is sometimes possible to have on without the other [5].

3 Higher Education: A Public Good

With the marketization of higher education, some argue that higher education cannot be treated as a public good, as it does not satisfy either of the first two features, viz., non-excludability and non-rivalrousness. In my view, it is a very narrow interpretation of the attributes of public goods. Because education, specifically higher education, satisfies all the three essential features of public goods: they are non-excludable, non-rivalrous and they produce externalities. The concept of public goods is central to economic analysis of the role of government in the allocation of resources.

For economists, a public good is not simply something that is "good for the public"; it is something that benefits many people, including those who do not pay for it. Learning to read and write helps the individual and in that sense is a private good, but it also provides a public good because it makes people better citizens, acquaintances, and colleagues - contributing to the uses of others, even though they do not pay for those benefits. Advanced education similarly fosters greater productivity and innovation, improving the lives of everyone, not just those who bought the education [6]. In other words, education has positive externalities whose value is not captured by the person who pays for the education. Because these externalities exist, the argument goes; people tend to act as "free riders," receiving the benefit provided by others without paying for it. Thus, fewer people are willing to provide education than would be willing without such spillovers because they are not rewarded for some of the output they produce. Therefore, according to most economists, education will be undersupplied.

Higher education is not a pure public good. It is clearly possible to exclude people who do not pay. What people who call education a public good mean is that there are positive externalities—not all of the benefits accrue to the students. Society benefits when more people go to college. People with a college education earn more than others, but their higher earnings do not reflect the whole of their contribution. Others who work with them earn higher wages because of the added flexibility, innovation, and productivity of the labor force. People with a college education tend to be more active citizens, with their volunteering and other activities benefiting those around them. There are more new products and services for all of us to enjoy because of the contributions of college graduates.

So the benefits of higher education are shared by the participants and the rest of society. It follows that it is reasonable for the costs to be shared as well. It would be inefficient not to subsidize colleges and their students. People would underinvest in their own education if they had to pay the full cost, because they would not choose to foot the bill for the benefits shared by all member of the society.

Although the market competition will bring a lot of changes for the higher education, especially the economic benefits, the public goods like higher education cannot be provided by markets in a manner that satisfies social demand. The public good nature of higher education is well understood when one recognizes the traditional functions of higher education, and the social benefits that it produces, many of which constitute public goods in themselves [7].

Private sector is the fastest growing segment in higher education in many countries around the world. However, the worldwide trends towards privatization and internationalization of higher education are going on, partly to expand the scale of higher education or get more money. However, the privatization of higher education might affect higher education in a variety of ways.

Firstly, the public good character of higher education would disappear with the privatization of education. The shifting of responsibility for the funding of higher education to students and their families, as well as other outside government sources will exclude those who are not rich enough for the higher tuition. Thus the higher education will become an instrument of serving individual interests instead of public interests. Due to the market competition, the goal of higher education to contribute to social development and strengthen the civil society would not be fulfill.

Secondly, the traditional functions of higher education will be changed. The functions of higher education are traditionally described as teaching, research, and service. Teaching is the only one of these functions that is universally profitable to colleges and universities. The new providers in higher education will not only be interested in teaching. They will compete with colleges and universities in many aspects. Although this is a wise business decision, it raises a big issue for the nation. To the extent that colleges lose out to their new competitors, the offsetting funding for two activities of vital national interest is lost. The policy question that must be addressed is how do we protect the research and service functions? The market economy system will influence, even change the traditional functions of higher education.

Thirdly, the governments' commitment to higher education will be weakened. Privatization, specifically profit-seeking private institutions of higher education would become the order of the day with all its ramifications, converting an institution, which is basically a non-profit institution into a profit seeking institution. Eventually, marketisation of higher education will result in slow, in fact, a rapid extinction of some of the important disciplines of study which serve as a basic foundation for the development of any humane society. Only the marketable and revenue generating courses of study will survive [8].

4 Conclusion

Generally, higher education is a public good, primarily because of its positive spillover effects. As a public good, higher education has the typical attribute of public good, namely non-rivalry, non-excludability and externalities. One of the most important public good aspects of higher education derives from the common frame of cultural reference that has traditionally comprised the general education core. It has spillover benefits that people do not normally pay for; thus, people are likely to be "free riders" on the education that is provided.

However, higher education is often viewed as a private good, and its avid demanders may stimulate adequate provision of that good. Privatization of education not only leads to changes in the way education is delivered, but also fosters the development of a new language for education policy, and new roles, positions and identities for teachers, students, and parents., even the nature of higher education. There it is necessary to make special efforts to protect the public good nature of higher education, so that it serves the public interests that it is expected.

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Reformation and Exploration of Higher Engineering Education Based on CDIO Syllabus

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Abstract. The paper mainly introduced CDIO syllabus and gave some suggestions on the reformation and exploration of higher engineer education based on CDIO syllabus: emphasize abilities besides knowledge; strengthen practical links; enhance the training of teachers. The paper provided practical methods instead of explaining the complex theory.

Keywords: Higher engineering education, CDIO syllabus, education reformation.

1 Introduction

The reformation and development of higher engineering education is crucial to build an innovative country and strengthen national competitive power. Since 2000, it took 4 years for several engineering universities including MIT to bring up CDIO syllabus. CDIO represented conceive, design, implement and operate. The inspiration of designing CDIO syllabus came from the period of the engineering production. It was taken as the newest study of the reformation and exploration of international higher engineering education. The CDIO Initiative's goals are to [1]:

- Educate students to master a deeper working knowledge of the technical fundamentals
- Educate engineers to lead in the creation and operation of new products and system
- Educate future researchers to understand the importance and strategic value of their work.

There are many papers introduced the syllabus [2,3,4]. Because CDIO syllabus provided operable criterions to cultivate the abilities, it illumined the reformation and the exploration of higher engineering education.

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2 The Illumination

2.1 Emphasize Abilities Besides Knowledge

Compare with knowledge, the abilities is more important to the engineers. The educator should focus on what the students learned and what the students can do. The goal of the reformation is to make the students own abilities to meet the realistic social need. The abilities referred as follows,

First of all, the students should have the ability of applying integrative knowledge to solve problems. At present, the division of the specialty is too demarcated. There are no integrative courses and it is defective in the aspects of the communication of subjects and the connection of courses. The students' perspectives are limited to certain specialty. Besides, the students have not deep understanding of relevant knowledge. They learned lots of separated knowledge on the surface. So it is necessary to educate the students to grasp systematic knowledge and apply it generally. We can use two methods to solve the problem. On the one hand, we can set interdisciplinary elective courses; on the other hand, we can change the range of curriculum design which is not limited to certain course.

Secondly, we should strengthen the students' innovative ability. It is a kind of important ability in the society. It is valuable for engineers to discover a practical engineering problem or operate a new production. We can train the students in these ways. One way is to repair the teaching plan wholly and emphasis on the cultivation of practical ability, creative ability. Furthermore, the students should have the ability of teaching themselves. The second way is to optimize teaching content, update teaching methods and improve teaching quality. It is common to use teaching method of "learning by listening" in China. Now it is crucial to use more teaching methods of "learning by doing" such as case class and discussing class. Furthermore, we can use projection, recorder and CAI etc. to organize the lesson. Another way is to emphasis the practical teaching link. It will be explained at the next point of the topic.

Thirdly, it is important for the engineer to own good leadership capability including good communicating, cooperating, planning and organizing skills. At present, the students was born after 1980 even 1990, because of the policy of "One family, One Child", the student is the only child in the family. They have strong self esteem and self conscious but lack of the spirit and the idea of cooperation. Compare with that, the project in the society usually need a team. Everyone in the team need communicate with other members to finish the task. It is a defect to neglect the cooperative ability in the teaching goals. There are also many ways to strengthen the ability. One of ways is to use the chance of graduate design. The teacher can separate all people into some teams which includes at least 3 students each. The team has tutor and each member has obvious task which need the cooperation with the other members. That is to say, the previous design is mainly the paper finished by a single student, now we should strengthen the development of design team.

Lastly, the students should have the habit and ability of lifelong learning. The knowledge is changed rapidly in the era. Everyone must study continually to keep pace with the development of new technology. The ideology of lifelong learning is making learning becoming a basic living state.

Besides that, the teacher should teach students not only what to learn, but also "how" to learn. There is a saying: Give a man a fish; you have fed him for today. Teach a man to fish; and you have fed him for a lifetime. The learning method is the key to get knowledge. Take a simple example, if the students have learned how to search the paper in the database, then he or she can get lots of information which he or she need in the lifetime. So it is important to learn the methods to learn and the way to get the knowledge.

2.2 Strengthen Practical Links

The life of the theory is application. The point of the reformation of higher engineering education is to strengthen students' practical ability on the premise of maintaining scientific theoretical foundation. Therefore, we should enhance students' practical skills through promoting teaching methods and improving teaching surroundings. There are some specific methods.

One is to construct a multi-level experimental teaching system. The design of specialty course can set at three levels of basic experiment, comprehensive experiment and innovative study experiment [5]. The students can grasp the basic skills and hands-on ability in the basic experiment. Then the students can practice the comprehensive experiment before or after the study of professional courses. This kind of experiment is completely designed and implemented by students independently. That is to say, the students do experimental design, select test equipment, complete testing and processing of experimental data, and finally concluded to resolve their own questions. The design of comprehensive experiment should be close to engineering practice. The third experiment is innovative experiment which encourages students to participate in research projects. Before the implementation of the experiment, the students need check amounts of data and get much information, be familiar with the situation of international research and present their own ideas and imaginary. The kind of experiment is challenge because the process is self-study, independent design, independent implement, independent analysis and independent thinking. Such kind of experiment contributes to cultivate complex application-oriented engineers by broadening the range of knowledge, improving their research and innovative capacity.

The other way is to establish a high level of engineering training and lab center or internal base, beside, strengthen the cooperation between university, research institution and enterprise, expand external practical base. We can use real industrial environment to carry out practical teaching or full use of science and technology development in research institutions. We also can select excellent students to participate in new product design and research study. In addition, the training should strengthen practical links, including understanding of practice, measurement practice, production practice, graduate practice, social practice and research practice. We should regard the practices seriously but go through the motions.

2.3 Enhance the Training of Teachers

The key of deepening the reformation of higher engineering education is to enhance the training of teachers. As many Chinese teachers came into the university directly after they got the MS or PhD degree, the teachers have not the experience of working in the corporate, and lack of operational capacity of the application of engineering education. In the aspect of engineering education, it is important to have much practical experience as theoretical knowledge. Therefore, the university must improve the quality of the teachers in a variety of ways.

One way is to carry on production-education-research cooperation [6,7]. The way is good to improve the ratio of "double" (professor and engineer) teachers. On the one hand, sometimes teachers should go into the enterprises, foster applicative awareness and engineering skills. On the other hand, university can invite engineers who have much practical experience from enterprise as the senior part-time teachers. The university and the enterprise can jointly establish the research institute and laboratory. In the terms of staff, the engineers from enterprise should have a considerable proportion. Each institute has a professional steering committee, and the Chairman is from the enterprise [8]. This way can set a solid connection of the university and the enterprise. Not only colleges and universities can improve the practical engineering education level, but also enterprise engineers can get more theory knowledge and enhance research capabilities. In conclusion, the benefit of production-education-research cooperation is to connect the basic research, applied research and development studies. The university can know about the new production and new technology which ensure the content of teaching is forward-looking and also provide direction for the study. To the enterprise, production-education-research cooperation can provide technical support which can bring up the profits and enhance the competitiveness of enterprises.

Another way is to strengthen cooperate with international high-level universities, increase learning opportunities for teachers and students to go abroad, broaden teachers' international perspective and improve the students' international practical ability. There is currently an educative plan to cultivate excellent engineer which abbreviation is "excellent plan" in China. The grant is an important reformation operated by Ministry of Education of the People's Republic of China. A part of the grant is "Sino-EU Platform on Engineering Education" which established in 2010 by Ministry of Education of the People's Republic of China and European League of Engineering Education. The grant suggests 13 famous universities including KTH in Europe should strengthen communicate and cooperate with 18 excellent universities in China including Tongji University. The grant supplies lots of chances for teachers in the mentioned universities to improve teaching abilities by international communication [9]. For other universities, there are also many chances come from province or university policy. Take Shandong province for example, 20,000 thousand RMB is used to cultivate university teachers every year since 2007. The training includes the technology of education, the visiting to other native university and the visiting to famous university abroad. I benefited from the plan and went to Canada as a visiting professor in 2009. As a result, I learned lots in half a year.

3 Concluding Remarks

Because there are many questions to solve in the area of engineering education, CDIO was paid great attention in China. There were two important big meetings about CDIO in 2007 and 2008. Shantou University began to study CDIO from 2005 and it is the first Chinese member of CDIO. The university finally brought up "EIP-CDIO (Ethics, Integrity, Professionalism)" teaching mode. The experience and result of reformation were published in the magazine of "World Transaction on Engineering and Technology Education". We can see that there are some results in the area already. In this paper, I only narrative some obvious illumination and give some simple practical methods as an ordinary teacher. We can understand easily that the engineering teaching should pay more attention on "doing" and "cooperation", emphasize abilities besides knowledge, strengthen practical links, and enhance the training of Teachers. In short, these methods mentioned such as setting up integrative courses and multi-level experimental teaching system, using graduate design, carrying on production-school-research cooperation etc. contribute to cultivate high-level technical personnel.

Acknowledgements. The study was supported by the fund of "Educational Research and Reform Project of Shan Dong Jiao Tong University"

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The System Construction and Quality Evaluation of *Textile Materialogy* Research Study Based on the Environment of Internet

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Abstract. This study puts forward some new thoughts for the teaching pattern which combines the basis of engineering professional courses and research-based study under the network environment, selecting the learning system and evaluation of textile materialogy as the pointcut, conducting the design of system function and the exploration of teaching practice. Textile materialogy courses contain inspiring and interesting knowledge, and we can build up research learning system about the engineering professional foundation courses, by effectively using the contents, features and the interaction function of multimedia network across space and time, which integrating the teaching requirements of textile materialogy with the advantage of network technology effectively. This paper introduces the design idea and realizing method, and probes into the corresponding quality evaluation system, by being combined with reality.

Keywords: Network research study, system construction, quality evaluation, textile materialogy.

1 Introduction

The research study of textile materialogy based on the environment of Internet is a learning process which students use scientific research method to explore issues under the teachers' guidance and support, by using the network technology to create a similar situation and way of scientific research in the process of learning textile materialogy[1]. As the network technology can provide graphic and audio-visual vast resources which can help to create situation, friendly interface and visual interactive learning environment which arouse students' interests in study and consultation session, cooperation study, and hypertext, hyperlink pattern to organize and manage discipline knowledge and various teaching information which be helpful for acquiring and maintaining a lot of knowledge [2]. Making teachers achieve individualized asynchronous guidance and the students connect with outside experts and researchers effectively lead to make the subjectivity of students came true under the network environment. It can be said that the research study is

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more suitable for the network environment and based on the network environment are gradually becoming the new field of today's education [3] [4].

Textile materiology is an important basic course of textile engineering curriculum, the study quality of which will affect the study and research of other related disciplines directly, meanwhile the capacity and competence of talents. In the textile materiology teaching, we make full use of network multimedia technology platform which integrate network with research learning model, connect with master syllabus and the characteristics of students, and build learning by network research system of textile materiology based on the teacher as the predominance and the students as the body, thus well stimulate the students' learning potential and interest, effectively activate factors of students' implicit learning.

2 The Pattern Construction of the Research Learning of Textile Materiology under the Environment of Internet

General Constructing Thought. Under the network environment, the teaching structure of research study consists of seven elements, namely students, teachers, information technology, resource, task, learning activities, research achievements. Seven elements have a close relationship and interaction. The overall effect of research study will be affected if ignoring anyone. Therefore, the use of network in the process of developing research study, we can grasp the basic context of research study and develop better under the environment of network by understanding the function and the interaction of elements. The entire learning system is divided into four parts: self-study, online interaction, research exploration and online design show.

Self-study Part. It is the most basic pattern of learning knowledge and also an important channel for acquiring knowledge. In order to help students review and assimilate the content after class, we set up three aspects including question, thinking way and result, integrated with the video, multimedia courseware form etc. Self-study arouse the enthusiasm and initiative of students by illustrating explanation from the easy to the difficulty and from the abstract to the image and making dull knowledge becoming lively and interesting.

Online Interaction. Online interaction as organic added part is an important link in the process of teaching. It consists of key difficulty and online FAQ. In constructing the key difficulty aspect, we should fully cover common key hard questions of textile materiology. Students choose established questions, and the system solutions to the problems arise in text form.

This part highlights the characteristic of convenience. The subject can study at any time and any place to get relevant information conveniently and quickly, without limitation of time and space in the course of learning. Students according to their own characteristics look for the object to their need and find the way of learning which adapt to their cognitive characteristics. Learning which takes place

between by the learners and knowledge is a course of construction. In the aspect of online FAQ, it is designed as a many-to-many mode, which the questions of students can be answered by teachers and students can discuss the issues in the guidance of teachers. This module has multiple interactive features. Multiple reciprocity is an interaction mode of network which takes place between Human and Human or people and media, and it makes the stimulation, response and feedback have multiplicity.

Study and Explore. It is the core of research study in Network environment. It consists of difficult research, program ideas and after-school test. Difficult research and program ideas mainly include some basic content of structure and properties in textile materialogy, comprehensive exercises and settlement process tips. Knowledge and information provided here should have a diversity of characteristics. As the diversity of knowledge and information in network learning object, it not only includes the text, graphic images, animation and other types of information, but also contains information sources and levels. In order to timely reflect the latest dynamic in the each information, it also appropriately takes into account the dynamic characteristics which indicate changes in real-time updating of learning materials. When constructing the subject of problem study, we strive to improve the interesting and artistic. It helps students learn being free from boring, but also receive enjoyment when they participate in research.

After-school test which is generally conducted by stage of testing can timely inspect and evaluate the familiar content of students, improve ability, understand students' study, master teaching schedule, check the effectiveness of teaching, the more important is that it has interactive features that can enable students to improve their own learning interests and capabilities. When constructing, we are mainly based on the specific circumstances of student learning and teaching progress to timely release the detailed course and problems easy appear. By the final test, we can further measure students' learning outcomes, improve students' learning motivation and initiative. However, when we evaluate the semester result, the classroom examination is necessary.

Online Design Show. Online design show is the student work shows, including yarn, fabric, style design and work appreciation. Design task stem from enterprise commissioned, all kinds of competitions and graduation design. Work appreciation is a work of evaluation score statistics.

3 The Realization of the Function of Online

Self-study Modules. Self-learning modules mainly include the instruction video of textile materialogy (RMVB format) and multimedia courseware (PPT format or exe format), the two parts are independent of each other's content, so students online learning can choose single or both. In order to facilitate independent learning and improve learning outcomes, both parts of the study can be downloaded. The

course of instruction video invites some experienced teachers to speak, all the content is discussed by collective and formed by referencing quality courses from other schools. Multimedia courseware is compiled by a thorough understanding of textile materialogy's course content based on teachers teaching many years. We make courseware by putting the content (which is abstract and not easy to express clearly but easier to achieve the desired effect by using multimedia-assisted) together with the corresponding illustrations and animation which is produced with Flash. This is more conducive to students' understanding of learning content and deeper impression, but also learned much more vivid.

Online Interactive Module. Exchange interactive parts are composed of the key difficulty and online FAQ. Key difficulty, which puts Textile materials in chapters, edit the key difficulty list and reference answer. Every question has a button to the reference answer and clicking the button can be examined. At the answer, for ease of understanding the situation and strengthening the contact, it requires registration before asking the question, the name, the class, the title of issue and other information will be input your database. The four levels of understanding options after each answer, which can be chosen by the learners. Teachers can keep in touch with the students for understanding to answer. All these are convenient for statistic and guide updating the difficult questions and answers. Online FAQ is a regular direct communication in the internet between teachers and students, the module plays no substitute role in clearing the problem lies and really get the information of answer, which effectively makes up for the inadequate of difficult and disabuse modules.

Research and Exploration Module. This module consists of three sub-modules which are difficult research, program ideas and after-school test. Difficult research indicates that teachers who have taught in many years extract some of the typical and unique content from the teaching content and compile them into difficult problems, then according to teaching-learning process to release. Program ideas are the solution of delayed release difficult problems, divided stage solutions tips and total solution. Stage solutions tips just give some difficult problems during the study tips.

Online Design Show Module. Identify strengths and weaknesses by appreciating of works in enterprise commissioned, various competitions and graduation design, and comparing to appraisal.

Module of Texture Library. Texture library consists of material bank, question bank, design sketch and data bank. Material bank mainly saves useful information searched by the students in the study, providing access to other students. Question bank mainly saves the problems found during the research. Design sketch mainly saves the students' design works on the Internet design show and evaluation information. Data bank mainly saves textile materialogy curriculum under the network environment and results of research study.

3 Quality Evaluation of Textile materialogy Network Research Study System

Quality evaluation is an important part of curriculum system, and an effective way to achieve curriculum objectives, bring education into play, and control quality. It can help students recognize their achievements and problems in attitudes, abilities, knowledge properly, and improve learning methods. In this way, it can achieve the purpose of promoting students' development. What's more, it can also help teachers understand and improve the effect and quality of curriculum instruction, providing feedback information for curriculum instruction and promoting the curriculum. Quality evaluation of network research study focuses on the research process, practice and cooperative competence based on network platform. In terms of essential property, evaluation is a kind of value judgments. The evaluation of research study reflects the idea of research study. The key of quality evaluation is based on the following three aspects.

Process Evaluation. In the process of research study under the network environment, we need to set up different stage targets according to research study in different stages. Based on the effect of stage targets and discussion evaluation in the research process, the evaluation can be divided into five grades. The content of discussion evaluation mainly covers the motivation, initiative, innovation of research, practical application significance and research progress.

Application Evaluation. Quality evaluation of textile materialogy research study emphasizes that knowledge and skills should be applied to the statement and solution of practical problem, in the process that students acquire knowledge and apply knowledge actively. In the research process of textile materialogy combining with research study based on the network environment, we require that the evaluation are based on the three standards, such as raised application problems originating from production, solving problems by combining theory with practice, applying to the practical production.

Cooperation Evaluation. Curriculum quality evaluation of textile materials research study not only concerns the improving of students' research abilities, but also forces on their performance in groups or teams, including their interpersonal skills and cooperative competence. The evaluation is done through the presentation of database information, participation in discussion, and attending the meeting.

4 Summary

Network research study of textile materialogy is a specific learning way aiming at the core curriculum of Textile Engineering. However, the study mode is universal. So as long as you grasp the method of the mode, you can learn other related curriculums, as it has wide range of application. By the network research study of textile materialogy, we improve understanding from the two aspects:

Clear the value orientation of research study under the network environment, aiming at the core curriculum of Textile Engineering, construct the curriculum teaching system of research study under the network environment, build and improve evaluation system of network research study. In this way, it enriches and develops the current curriculum resource and teaching theory in institutions of higher learning.

The whole program of built network research study makes students learn to use network resource to research study and experience. It helps teachers to explore the approaches and methods of research study in Textile Engineering when students use network resource and build a set of excellent program of research study.

Acknowledge. The authors express their sincere gratitude to the new century educational reform subject of zhejiang province 2010 "CDIO model of textile & clothing engineering teaching method reform and practice of research results" (zc2010061).

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The "Case" Teaching Pattern in Medical Physics

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Abstract. Case Teaching Method is an important approach to adapt to the current educational situation of medical colleges, to improve quality of medical education, to train medical talents with innovative spirit and ability. In this paper, the results of the explore and practice of the "case" teaching pattern in the medical physics are discussed.

Keywords: Medical physics, case, teaching pattern.

1 Introduction

Medical physics is a compulsory basic course of medical college. It shoulders the mission to let students master some system knowledge which is provided by physics and is closely connected with medicine. For many years, the traditional medical physics has only paid attention to the own features of physics, such as, "theorization", "formulation", and has ignored the status and function of physics in medical teaching. Therefore, many students could not use their knowledge in the practical work [1]. On the other hand, medical physics is a course which is closely connected with medicine. If we introduce the case relating to medicine, it will inevitably let students master the fundamental principles and basic approaches of physics to deal with medicine problems. In this way, it will greatly increase their learning interest for physics and improve their abilities to analyze problems and solve problems. As a result, it is necessary to introduce the case method in the classroom teaching of medical physics.

What is the case method? Case method applies cases into the teaching. It is a teaching method which realizes teaching aims by the instruction of teachers, organizing the discussion of students, writing the report of case analyses, the conclusion of teachers and then improves students' theoretical level and practical ability [2]. This method is also called as case study method or case teaching method. It was originated in Harvard University and was firstly used in the law teaching of the second half of 19^{th} century. In order to help students to learn juristic basic knowledge and theory, teachers chose individual crime case to analyze. Later, it was used in the teaching of medicine, management, etc. At present, it is also applied into other subjects [3].

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Introduce new lessons by adopting cases. When instruct the chapter -- Vibration and Wave, it is difficult to catch students' positivity and thirst for knowledge if the teacher directly explains vibration and resonance. Therefore, we use cases to introduce this chapter. Firstly, we show the students a film of a historical engineering accident -- Tacoma Narrows Bridge [4] and put forward the question: who is the chief culprit for the bridge collapse? It tells us a story: In 1940, in Washington State of US west coast, people built Tacoma Narrows Bridge which listed the third position in the world. It was a suspension bridge. It was designed to resist the wind speed of 60 m/s. However, it collapsed in 19 m/s wind speed in four months. After seeing the film, students are very interested in it. They are eager to know the reason for the collapse of the bridge. In this way, students are changed to actively receive knowledge from passively accepting knowledge. They will have better teaching effect. Then, ask students to answer the former question by learning the knowledge of vibration and their discussion. It fully mobilizes students' positivity and initiative by this case teaching. Students actively think, discuss and express their own opinions. Classroom atmosphere is very active.

Apply fundamental principles by adopting cases. In medical physics, the chapter – The Moving of Fluid has closely connection with blood in medicine. It is the key content. After instructing the application of Bernoulli equation in medicine – the influence of body position on blood pressure, teachers should immediately introduce the case [4] : Patient, male, 18, is admitted to hospital because of suffering from nasopharyngeal angiofibroma. Doctors carry out the operating by accessing from hard palate in general anesthesia of the patient. When strip the base of the tumor, they gradually lift the operation bedside for 10°~30°and let the patient in the position that his head is higher than his feet and try best to ensure the operation position is higher the heart level. The operation bed could be laid flat when the fall of blood pressure is too low or the blood pressure recoveries to normal status after stop the fall of blood pressure. Question: what influence does body position on blood pressure? What is the aim to let operation position higher than heart level? We connect this case with the influence of body position on blood pressure and let students discuss why we should life the operation position. After discussion, we ask students to explain these questions. We find that students could connect the case with Bernoulli equation after discussion and thinking. They understand that the higher position will have lower pressure. Therefore, in operation, they should lift the bedside and lower the operation position to prevent massive haemorrhage. By case analyses, we practice their thinking, let them realize the close connection of clinical medicine and physics, develop their abilities to solve problems by linking theory with practice and achieve better teaching effect. Based on the result of follow-up survey, we found students have deeper understanding to this chapter. Meanwhile, they have more positivity, interest and enthusiasm for medical physics. It has been found that "the case method" has been highly appreciated by students.

The case method should pay attention to several problems. For the case method, it should pay attention to several problems in specific implementation process. In this way, it could be better applied into teaching practices.

The case method should be conducted step by step according to students' practical situations. Many teachers are afraid to adopt the case method because they worry students could not coordinate with them. Actually, students' abilities could be greatly improved if teachers pay attention to teach step by step in teaching, that is, at the beginning of the course, teachers analyze cases with students and teach them how to analyze problems. After a period of time, teachers must let students analyze and solve problems by themselves. Teachers should undertake the responsibility to inspire and guide students to make independent thinking. If teachers do everything for students and deprive their subject positions, the case method could not get its effect. In this chapter, we use the case to introduce this chapter and mobilize students' positivity. Then, we use the case to check their learning effects. In the process, we always inspire and guide students to speak out the answers instead of the answers gave by teachers directly. In such teaching process, students could exercise their thinking and also could deepen their understanding to knowledge.

The case method has higher requirements for teachers' level. It may take more time that students obtain knowledge by exploring and discussing. Students may become blind in independent research if they don't have the guidance of teachers with high level. Therefore, adopting the case method has higher requirements for teachers' knowledge structure, teaching level and sense of responsibility. It not only requires teachers to have profound theoretical knowledge, but also requires teachers to possess abundant teaching and practice experience. It also requires teachers to combine theory and practice perfectly. In the teaching process, we design more scientific cases to apply in the teaching by collecting cases, visiting other academies, viewing the implementation process of the case method, concluding experience, and discussing and learning.

The case method is not always the optimal teaching method. In deed, the case method has the effect which could not be realized by traditional teaching. The reason is that quite a few teachers thing they could completely solve the problems in traditional teaching by adopting the case method. They move towards another extreme from an extreme. Everything has its advantages and disadvantages. The case method and traditional teaching method are not the exception. The case method is the important approach to develop students' abilities and could make up the insufficient of their practical ability to some extent. Traditional teaching method has stronger coherence and more fully and systematically impart basic concepts and basic theories to students. It is the important means for students to obtain basic theoretical knowledge. However, they both could not exert their functions if break away from their objects. Therefore, we advocate the case method. However, it doesn't mean we will abandon the traditional teaching method but we should put it

into the correct position in the teaching. We should dialectically cognate the functions of the case method and traditional teaching method, and correctly deal with the relation between the two teaching methods. In this way, we could achieve better effects.

2 Conclusions

Medical physics is a subject that the theory closely link with the practice. It aims to develop students' innovation ability and the capacity to solve practical problems. Therefore, it could effectively master the content of this course, improve students' practical ability and develop their team spirit by fully and correctly applying the case method in this course.

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Open, Cooperative and Practice-Oriented Learning—On Inquiry Teaching of Architectural Design Fundamentals

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Abstract. Architectural Design Fundamentals (ADF), the first specialized course of freshmen of architecture, is the cornerstone of the whole discipline of architecture, which leads students to the door to architecture and assumes the task of enlightening beginners. But the present elementary education of architectural design has exposed many problems and restrained the development of students' abilities. This paper puts forward a reform scheme for inquiry teaching, which introduces inquiry teaching models to the fundamental courses of architectural design. The implementation scheme can be broken into open classroom, team work and practice. The reformed teaching content and teaching methodology provide more channels for students to acquire multiple abilities. While finding out the right learning methods, students can demonstrate their individuality and exercise their autonomous learning spirit, foster their independent research capability and arouse their zeal for social life.

Keywords: Architectural design fundamentals, inquiry teaching reform, implementation plan.

1 Status Quo of Teaching of Architectural Design Fundamentals

Architectural Design Fundamentals (ADF), the first specialized course of freshmen of architecture, is the cornerstone of the whole discipline of architecture, which leads students to the door to architecture and assumes the task of enlightening beginners. As architecture is both science and art, architectural education should focus on encyclopedic knowledge, solid foundation of knowledge, good cultural and art buildup, construction and eco-environment, a good sense of social responsibility, innovative spirit and capability[1]. The goals of training talents of knowledge, ability and quality oblige the author to reflect on the traditional course of Architectural Design Fundamentals and I find out there exist some problems with the teaching curriculum and organization.

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Firstly, the teaching setup has to some extent restrained the development of students' abilities. For instance, the traditional water-and-ink rendering only requires students to grasp a kind of expression skill, without any demand on innovation or cooperation. However, with the increasing use of computers and change of media, water-and-ink rendering do not serve the design sketch any more. Therefore, the traditional training is no longer suitable. Students can choose whatever tools they like to draw, such as pencil, pen, marker pen, and computer, so as to develop their own features in combination with fine art skills and CAD skills.

Secondly, the teaching process organization tends to be over simplified, mostly following the thread of assignment-working on assignment and giving scores. In such classes, the teacher first illustrates theoretical knowledge and makes clear the purpose of the assignment and the requirement to be met and the form of the submitted assignment, the students then finish the assignment during which they compare them with examples and minimize discrepancies. Lastly, they submit their work and get scores. Everything is routined and circular, which is dull for students. Both the teacher and the students focus on the last product, not on the learning process. For those freshmen lacking experience and yet full of fantasy, learning how to how is more important, which will be not only beneficial to their study in coming years, but have a long lasting impact on their lifetime pursuit in architectural career.

2 Inquiry Teaching Strategies for Architectural Design Fundamentals

The author attempts to introduce the inquiry teaching model into the classroom. Before that, a probe into inquiry learning must be done. Inquiry learning was put forward by Prof. J.J. Schwad of Chicago University in 1961 in his report Teaching of Science as Inquiry. National Science Education Standards, NSES gives the definition as: "Inquiry is a multifaceted activity that involves making observations; posing questions; examining books and other sources of information to see what is already known; planning investigations; reviewing what is already known in light of experimental evidence; using tools to gather, analyze, and interpret data; proposing answers, explanations, and predictions; and communicating the results. Inquiry requires identification of assumptions, use of critical and logical thinking, and consideration of alternative explanations." [2]Among them, the words of Observations, Posing Questions, Discovery, Investigations, Reviewing, Analysis, Communication, Critical and Logical Thinking well coincide my feeling: I just want to make students learn to how to learn through the course of ADF. Hence, I take the inquiry-oriented teaching model as the core of the pedagogical reform. This course spans two semesters, which is sufficient to test the reform results. In the teaching practice, I updated the teaching content, using materials-space-construction assignment that emphasize practice to substitute the traditional water-ink rendering assignment and broke the teaching pattern into four parts: open classroom, team work, practice and responsive teaching. It was expected that apart from imparting knowledge of the specialty, this course can give due consideration

of the individual development of the students, help students grasp ways to identify and solve problems, train their team work spirit, organization ability, hands-on ability and language communication ability, so that students can develop good morality, psychological makings and social responsibility.

2.1 Establishing Open Classroom

In the era of diversified information, teaching should not be accomplished only through blackboards and multi-media in the classroom, it could be extended to every corner of the society. It should not occur between teachers and students only, but more experienced and learned people and knowledge seekers could join in to accomplish a teaching task. This doesn't mean that the teacher's role is diminished, but more external resources could be utilized. What the teacher needs to do is to find out, tap and integrate these resources, to arouse students' interest, expand their knowledge scope and increase their sociability.

2.1.1 Going Out and Getting Close to Real Buildings

Traditional teaching is confined to a classroom made up of the ceiling, the floor, blackboard, windows and walls. But students of architecture should not only listen to the teacher and make drawings, but also get out of the classroom to get close to, appreciate and feel buildings in the real life. An important task of college architectural education is to enable students to develop a professional eye to architecture and life, as well as the thinking of an architect[3]. The cultivation of the thinking is not accomplished in an action. It should be a gradual process, especially for freshmen.

In line with the curriculum plan, the author designed an experiencing thread of "Experiencing buildings-environmental cognition -special survey", with the first two arranged in the first semester and the third in the second. The prolonged time distribution is better for students to summarize the previous experience and make them better prepared for the next step. For experiencing buildings, masterpieces of architecture are chosen to be the objects. The teacher would help the students to conduct surveys, illustrating to them the composition, functions, spatial layout, and the relationship between the building and the surroundings. In this way students can increase their rational knowledge on the base of perceptual knowledge. Compared with 2-D photos, real buildings are easier to interpret, perceptualize and understand. And the students can better acquire the methods and skills for survey. In the link of environmental cognition, students are made to observe the campus around them and find out some exterior space that needs improving. They need to provide some solutions with regard to the greening layout, traffic lines, leisure facilities, public art, etc. Students develop the awareness that as architecture majors they must pay attention to the buildings and environment nearby anytime, anywhere, and develop a good habit of close observation. This link also accumulates first-hand information necessary for the "External Space Design" of the second semester. Two special surveys are arranged in the second semester, on external space design and small teahouse architectural design respectively. After the

experiencing in the first semester, students have laid some foundation in grasping investigation methods and observation competence, which makes the survey task not difficult at all. Survey and curriculum combined, students investigate with questions in mind, which can in turn increase their planning competence and investigation competence.

2.1.2 Inviting Teaching Assistants and Architects to Go into Classrooms

In the teaching process, senior students are invited to be the teaching assistants. They can not only play an exemplary role, but serve another channel of communication between teachers and students. From them, teachers can get direct feedbacks from the students and can make adjustments of their teaching. More importantly, as these senior students were freshmen, they must have some reflections upon their study of the course. They would understand better the objectives of the training and provide some insightful suggestions for the freshmen. When they become friends with the freshmen, the discussion can naturally reach beyond classrooms, to dorms, reading rooms, or any other place around the campus.

To learn about architects and architecture works through the Internet and magazines is unidirectional and efficient communication is hardly achieved. To make students get close to architects, architects will be invited to the classroom. They will be asked to join in the curriculum design and talk about their designs and life. Through communication with them, students will have a better understanding of the integrating designs with practice. They will have higher motivation for study and a higher sense of social responsibility.

2.1.3 Using Network Teaching Platform to Extend Classroom

A network-based course will be established on a platform that enables autonomous learning, communication and Q&A, expanding the space of teaching and learning. The combination of regular classroom teaching and network-based teaching can better cater to different learning needs and habits of different people, as the advantages of the two can best complementary to each other. The network platform allows students to ask for help from the teacher anytime (not necessarily in the class hour), which can greatly improve the learning efficiency. By virtue of internet, teachers can partake in students' learning process in a timely and efficient way and can give them guidance on their phased results.

2.2 Making Full Use of Team Work

A team is a formal group of individuals who hope to achieve a common goal on a collaborative basis. In the group, each individual has the ability to cooperate with others to complete a certain task, apart from the ability of working independently. Nowadays, construction projects are getting more and more complex, requiring different parties to cooperate, which puts a higher demand on the organizing and cooperative capabilities of the practitioners of construction. Whether a person can

cooperate with and learn from others within a team will decide to a large extent whether he or she will become a qualified practitioner.

I have designed several team work opportunities for the curriculum that runs for a whole year, requiring students to cooperate on the assignments of "Environmental Cognition", "Small-size Architecture Design", "Case Analysis of Architecture" and "Materials-Space-Construction". On a voluntary basis students can choose members for a team, with each team having 4 to 5 people. The members could be from the same dorm. Or the team could be formed based on the competence complementarity principle. The team members are encouraged to change, the purpose of which is to have different personalities of different competence working together to gain more experience. The desks in the classroom are arranged in a way to strengthen the closeness of teams. One team will have a small round table, so that the members can feel like to talk. The team members need to cooperate on the tasks of information collection, PPT making, presentation of research reports. They also need to cooperate on deciding on schemes, drawings, and models and make clear their respective duties. During this process, the teacher mainly directs, supervises the progress of the assignments being done and answers questions from the students[4]. In the final evaluation process, each student is required to evaluate the performance of the other members, so as to rule out sluggishness in the work and ensure that everyone has given the best.

As a matter of fact, the method of team work is derived from the enlightenment of the theory of multi intelligences. The theory holds that human intelligences are multiple: linguistic, logical-mathematical, spatial, musical, bodily-kinetic, interpersonal, introspective, naturalistic, existential, etc. However, the formations of intelligences of different people take different forms. Therefore, each student is unique and can learn in his/her own way and make his/her own contributions[5]. During the team work, students' organization ability, hands-on ability and verbal expression ability can be maneuvered to a varying degree. Students can be better engaged. They can not get high grades by only drawing. Their confidence can be boosted and they can see themselves in a more objective way and better cope with the learning and working methods of architecture.

Team work can not only strengthen the intelligence advantages of each student, make up their disadvantages, but also cultivate their team work spirit. The members of strong personality might express some adverse mood when their ideas are not accepted by the others; there might also be some students who are introverted and inarticulate or not enthusiastic in the work. There might be some conflicts or disputes arising, too. But with the progressing of the task, they would negotiate, compromise and work out best solutions, based on the consensus of accomplishing the mission. They would gradually develop a sense of collective responsibility and a strong cohesive force. This working method can promote the interpersonal relationship between the students and do good to the development of their psychological makings.

2.3 Combining with Research Projects and Learning through Practice

Inquiry learning stresses critical and logical thinking in discovering, analyzing and addressing problems. To enable students to better master this basic research method, I just added an assignment "Materials-Space-Construction" while updating the teaching content. Though initially it was meant to let students have more opportunities of practicing inquiry learning, it was meant to get students out from sheer discussion of space and patterns. This kind of discussion should not be confined to drawings only. It should return to the essential elements of the object. We should use buildings of real dimensions to learn about form, function, technology and art, etc.

In construction practice, students can learn about different materials, including their properties and ways of formation and construction. They should propose solutions on the spot and modify the building scheme. The whole process is fun and challenging, which can ignite the creativity of students and help improve their learning interest. The knowledge obtained from the practice will be hardly got from the 2-D drawing and models of small scale. The teacher can have a real carrier in illustrating basic structure and technical theories, therefore, the pedagogical effect will be much improved.

In deciding on objects for practice, due considerations must be given to the incompleteness of the knowledge of the specialty of the freshmen and the limited class hours. Students can choose to make $27m^3$ paperboard houses, simple furniture and living utensils for disabled persons. Though these projects may not be directly related to construction, but the spirit of research developed and research methods used will benefit the students throughout their life, which is also the ultimate goal of inquiry teaching. Moreover, to research on projects directly related to the society can strengthen their sense of social responsibility and make them enjoy social life.

3 Conclusions

Through two years of pedagogical reform practice, I find inquiry teaching brings more vitality to the course Architectural Design Fundamentals and all the preset teaching objectives can be basically fulfilled. The reformed teaching content and teaching methodology provide more channels for students to acquire multiple abilities. While finding out the right learning methods, students can demonstrate their individuality and exercise their autonomous learning spirit, foster their independent research capability and arouse their zeal for social life. All these can lay a good foundation for the following courses.

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The Establishment and Practice of Textile Engineering Applied Professionals Training Model

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Abstract. In accordance with the training mode for the textile engineering majors of Jiaxing University, the combination of production, learning and research, to meet the requirement of local industrial economy development for textile professionals, this paper proposes that we build a new training model for the engineering applied professionals, which attaches great importance to the development of students' synthetic abilities to Conceive, Design, implement and operate, etc. The paper makes a detailed study on the teaching plan, teaching methods, practice sites and study evaluation, puts forward our practice of the new mode and the experiences we get. It is meaningful to make clear the difficulties and problems we may come across when carrying out the engineering education.

Keywords: Textile Major, Economy Globalization, Engineering Education, professionals Training.

1 Introduction

In the 1990s, China's textile industry has experienced a significant turning point, it has completed with "pressure ingots, restructuring, downsizing, efficiency" as the main task of the restructuring work. The traditional backward industries will be reduced and eliminated and the textile industry has to go to the road of technological revolution and industrial escalation. The textile industry is featured with the diversity of materials and products, the digitalization and automation of the processing equipments and the integration and informationization of design, production and management[1][2]. Recently, with the changes in the international and domestic situation, Jiaxing University has made some useful exploration in the engineering education of the textile applied professionals, which is quite meaningful to make clear the difficulties and problems we may come across when carrying out the engineering education.

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2 CDIO Engineering Education Philosophy

Learns in the Does. It has become one of the university engineering education reform strategies in response to the need of the applied innovation professionals in the trend of the economy globalization[3]. As a model of the Learns in the Does strategy, CDIO is based on the whole learning process of the engineering project, is a revolution to the traditional lecture-based teaching model[4]. CDIO represents Conceive, Design, Implement and Operate. It is an engineering educational method which involves the product, the process and the system life cycle.(Conceive, Design, Implement and Operate), with which as a carrier, CDIO engineering education philosophy is adopted to develop the students' engineering ability, including the personal knowledge of engineering science and technology, the ability to apply their knowledge to the solution of problems, lifelong learning ability, teamwork ability, communication skills and the ability to control the complicated systems[5][6]. Since 2000, CDIO model has been put into practice by dozens of universities in the world, such as the leading school MIT and the Swedish Royal Institute of Technology. It has achieved remarkable results so far and is popular with the students, and has earned high marks from other schools.

3 The Basic Idea of Carrying Out the Engineering Education of Production, Learning and Research for the Textile Major

To meet the demand of the textile professionals with the local economic development, we propose to build a new model of cultivating the engineering professionals, which attaches great importance to the development of students' synthetic abilities to conceive, design, implement and operate, etc. Its characteristics are as follows

To enable the students to appreciate the beauty of engineering technology by the introductory basic course, guide the engineering into the door from the beginning.

To link the related courses organically based on the project design in the teaching plan and teaching practice.

To let the students experience the engineering practice process when they are learning professional knowledge, to make them do positive interaction between the knowledge learning and engineering application by running through the research and experiment in the professional learning and the design of practical project so that they can develop strong interests in the main courses, and finally achieve the goal of comprehensive ability development.

Because of the combination of the experimental course, R & D(research and development) project and the whole course system, we combine the professional theory to be learned and the technology into an organic whole, take the problems and needs as the forerunner, put the students into the actual industrial situation, involve the book learning with practice, theory learning and science experiment, school learning and market demand, R & D so as to greatly stimulate students to learn with initiative and enthusiasm.

With the basic idea of engineering education above, taking the revision of Textile Engineering training pattern of Jiaxing university as an opportunity, according to the school's overall education frame, based on the requirement of the modern textile industry to the engineering theory knowledge and professional ability, we establish a new course system with the embodiment of function, technology, economy and environment, society and even history and its limits. Also, we take the project design as the guide, the engineering ability training as the goal, implement the training of textile engineering applied professionals by combining the all professional course learning and the specialty training system organically through the project design.

4 The Establishment and Practice of Textile Engineering Applied Professionals Training Mode

The Basic Training Mode of Textile Engineering Education can be summarized as one training goal, four kinds of ability requirements and 12 basic measures.

One Training Goal. We should develop the engineers who have professional skills, good social awareness and the acumen of entrepreneurial, he can adapt himself to the complex technical systems, and has the potential of maintaining high effiency, innovation and excellence in this environment.

5 Four Kinds of Ability Requirements

Technical Knowledge and Reasoning ability. It Includes basic scientific knowledge, core engineering basic knowledge, advanced engineering basics.

Personal Professional Skills. It includes the skills of engineering reasoning and problem-solving, pursuing knowledge in the experiment, thinking systematically, personal skills and attitudes and professional skills and moral.

Interpersonal Skills. It includes teamwork and communication, communication in foreign languages.

Project Implementation Capabilities. Be equipped with the ability of project conception, design, implementation and operation when facing with the external and social environment, business and commercial environment.

6 12 Basic Measures

Establish teaching philosophy which focuses on the ability training of conception, design, implementation and operation.

Take the ability training of conception, design, implementation and operation as the ultimate teaching objectives.

Set a comprehensive and interactive course system consisting of theory courses, laboratory practical courses, research projects and a comprehensive lesson-plan interactive system.

Offer the textile and garment engineering introductory course.
Stress on students' experience of the design (the process of making).

Establish a good environment in which we can develop the conception, design, implementation and operation of the project.

Integrated teaching process.

Stir up the students' enthusiasm of active learning by taking the problem cognition and solution as the guide.

The teachers' improvement in the capability of conception, design, implementation and operation of the project.

Enhance the teachers' teaching skills and improve the quality of the course

Establish evaluation system for students' ability in conception, design, implementation and operation of the project

Establish engineering teaching project evaluation system with the conception, design, implementation and operation ability training as the philosophy.

7 The Basic Method of Textile Engineering Education

Teaching Plan. Increase the practical projects supported by industry practice, make the plan lively, practical and teamwork characteristic by using the modern classroom and workplace(lab), communicate with the outside world timely, improve the plan continuously through the assessment and evaluation.

Teaching Method. The learning efficiency can be improved by learning motivation, so we increase the active learning and hands-on projects; emphasize the ability to analyze and solve problems, enhance conceptual learning the feedback mechanism.

The Place for Practice. Add conception, design, realization and operating experience into the learning environment of engineering education, establish places for practice which makes available the activities of conception, design, implementation and operation. More importantly, cultivate students to have the competence of doing things and completing things.

Learning Measures. Different competence should be evaluated by different examinations, the evaluation of professional knowledge is conducted through the form of test paper or oral test, and the evaluation of the capability about conception, design, realization and operation is through the form of recording, report, comment of oneself, assessing each other and so on, the diversity of the forms of evaluation requires the diversity of learning methods , and ultimately establish a more integrated and reliable evaluation system.

Specific Set-up. We have separately set up two level 1 projects, five level 2 projects and five curricular and level 3 projects. Two Level 1 projects include Introductory Theory of Textile Profession and Professional Cognitive Practice, Graduation Field Work and Graduation Thesis. For the first level 1 projects training we will arrange for the students of grade one or grade two. For the second time, the level 1 projects training is for Graduation Field Work and Graduation Thesis. Among the two projects, there still are some relative courses and level 2 projects as a link.

As to level 2 projects, there are five modules in the textile profession including the structure of fiber material, spinning and weaving engineering, the design philosophy of textile product, textile trade and creative design. According to the requirement of each module of level 2 projects, relative core curriculum has been formed, we put forward comprehensive and designing testing and research items served for theory teaching of curriculum, these items are the synthesis of the relative curriculum and as well as support the first grade item, meanwhile replenish the whole teaching system.

The level 3 project is testing, practice and research items for a single course, aimed to reinforce the depth and extent of understanding to the theory. The relation of the level 1,2,3 projects can be seen from the Fig.1.

In addition, in the reform of the education of the textile, we reinforce the construction of the hardware and software environment, through adjustment of the available education resource, we create a good condition for Implementing the entire engineering training.

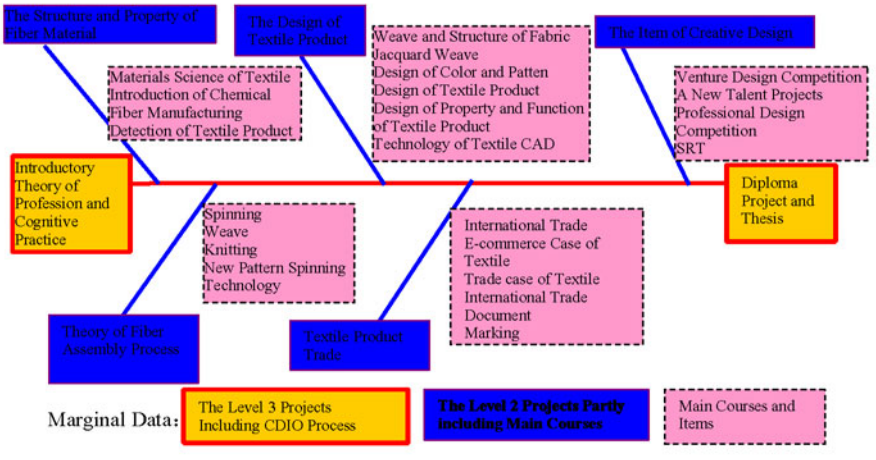

Fig. 1. The core courses of Textile Engineering and Cultivate Relationship

8 Summary

It is an old as well as a new topic about engineering applied professional training. Practice shows that it is a long difficult process for any innovations in engineering applied professional training mode. CDIO mode has achieved remarkable results so far, it is popular with students, and has been highly praised. We believe, in the near future, more and more engineering applied professional training modes, our school characteristic, various forms of co-existence, will spring up, which will provide a strong support for the sustainable development of Jiaxing university.

Acknowledgement. The authors express their sincere gratitude to the teaching reform of jiaxing university 2009 subject "CDIO based on the textile & clothing engineering personnel training mode" (85150917), the new century educational reform subject of zhejiang province 2010 "CDIO model of textile & clothing engineering teaching method reform and practice of research results" (zc2010061).

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Study on Multi-sector Currency Inflow-Outflow Model in Financial Engineering

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Abstract. This paper aims to study the internal quantitative regularity of currency flow system based on the currency revenue and expenditure of sector by means of input-output method which is a general equilibrium analysis. We classified all the involved subjects into 8 sectors. The input-output table of multi-sector currency flows has been established. We deduced the horizontal input-output equations set, and deduced the vertical input-output equations set, we also introduced the concepts of direct inflow/outflow coefficient, complete inflow/outflow coefficient, and computed the inter-sector complete inflow and outflow coefficients, and the results showed that the model proposed in this paper is very reasonable and meaningful in the analysis of currency flows.

Keywords: Inflow, Outflow, Currency, Multi- sector.

1 Introduction

Since 2006, the frequent adjustments of interest rate and deposit-reserve ratio implemented by the central bank have not reached the expected result[1].This problem proves that the impact of monetary policy became weaker and weaker, which has been always challenging the theoretical study on monetary policy. As we all know, the effect of monetary policy depends on whether the measures taken by monetary authority have the same impact as the result of theoretical analysis, on the real currency amount so as to further influence the output and price of economy system [2][3].

Central Bank is responsible for formulating and implementing monetary policy is an important means of national macroeconomic regulation and control, but in recent years, the State is facing increasingly tough economic situation, monetary policy continued to weaken the effect of the problem requires us to the effectiveness of monetary policy instruments to re-inspection. Traditional monetary theory is generally all the micro-economic agents into government sectors, commercial banks, central banks and the public the four sectors [4][5]. It has been recognized with this too general "public" concept is not conducive to the currency supply and demand theory in depth. This article is the use of Leontief input-output model,

L. Zhang and C. Zhang (Eds.): Engineering Education and Management, LNEE 112, pp. 617–623.
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trying to currency movements between multi-sector perspectives on these issues in depth of the system [6][7].

2 The Economic Description of Currency Inflow and Outflow among the Various Sectors

The Economic systems through a single currency income and expenditure characteristics of actors to analyzing all the different economic systems will be divided into eight main sectors, which are: the household sector, the final product manufacturers, raw materials and intermediate products manufacturing enterprises, commercial Enterprises, non-bank financial sector, government sectors, central banks and commercial banks, respectively using h, fe, me, ce, n, g, c, b to be identified.

Household sector is the social unit formed by a natural person, in the product market as consumers, provide labor in the labor market as those in the financial markets are borrowers and lenders; final product manufacturing process is the economic unit of production of tangible products, but also These products can only be used after the sale of the nature of consumption and investment in fixed assets (such as machinery and equipment, etc.), while other companies are no longer used as an intermediate product. Raw materials and intermediate products, including mining companies and manufacturers of industrial products for mining and production of raw materials processing sectors, but also for the end-product manufacturers to provide intermediate products production enterprises; commercial enterprises include not only engaged in physical commodities trading business, but also Including the provision of accommodation, travel, consulting, communications, and other service products business, In addition, companies that provide cultural products are also included in this sector; non-bank financial institutions, including the CBRC approved the establishment of securities companies, insurance companies, trust companies , enterprise groups, financial companies, financial leasing companies, auto finance companies, currency economy, companies, credit unions, mutual savings banks and other institutions. Government manage a country's political, economic and other affairs, and its huge fiscal revenue and expenditure in a large proportion of the economic system, if necessary, use of fiscal policy tools to achieve management objectives; the central bank has to issue currency, treasury agent, collection of commercial bank reserve requirements and other important functions, is responsible for formulating and implementing monetary policy to macroeconomic regulation and control of financial institutions; in China, including four state-owned commercial banks, commercial banks, joint-stock commercial banks and other regional commercial banks, but also Foreign banks and joint-venture banks.

3 The Modelling for Multi-Sector Currency Flows' Input-Output

Referencing to Leontief input-output model, we put the currency inflow/outflow from various sectors into a chess board.

We believe that the economic system in the study of currency flow in, the commercial banks in an important position in the core of its loans to deposit-taking functions and distribution functions for the whole economic system of currency inflow. To study the behavior of deposits and loans of commercial banks and monetary circulation flow of the various sectors in the relationship between the monetary, commercial banks should be part of monetary flows and loan currency flow part of the separated treated separately. Processed form of input-output table is Table 1.

Table 1. Currency flow input-output table after conversion

j / i	β	**Save**	Y_i
h	α	D_1	Y_1
fe		D_2	Y_2
me		D_3	Y_3
ce		D_4	Y_4
n		D_5	Y_5
g		D_6	Y_6
c		D_7	Y_7
b		D_8	Y_8
Loan	δ		
Y_j	ε		

Where $\beta = [h \quad fe \quad me \quad ce \quad n \quad g \quad c \quad b]$

$$\delta = [L_1 \quad L_2 \quad \cdots \quad L_8]$$

$$\varepsilon = [Y_1 \quad Y_2 \quad \cdots \quad Y_8]$$

$$\alpha = \begin{bmatrix} A_{11} & A_{12} & \cdots & A_{18} \\ A_{21} & A_{22} & \cdots & A_{28} \\ \cdots & \cdots & \cdots & \cdots \\ A_{81} & A_{82} & \cdots & A_{88} \end{bmatrix}$$

Assumptions: the total currency out of each sector, the flow of any one sector of other monetary currency accounts out of the sector, the proportion of the total is constant, this assumption is modeled on the Leontief input-output model established on the assumption that The other assumptions and input-output model assumes horizontal similar.

Based on the above assumptions, A_{ij}/Y_i is the constant value; $\beta_{ij} = A_{ij}/Y_i$ is the direct discharge coefficient. Its economic meaning: *i* sector flow per unit of currency *j* in the sector out of currency. β_{ij} is meet the conditions

$0 \le \beta_{ij} < 1, \sum_{j=1}^{8} \beta_{ij} \le 1$ where, $i, j = 1,2, ..., 8$. So with Table 1, the balance of j column of can be written as the following form:

$$\sum_{j=1}^{8} \beta_{ij} Y_j + L_j = Y_j \tag{1}$$

Then equation (1) can be rewritten as follow:

$$B^T Y + L = Y \tag{2}$$

$B = (\beta_{ij})_{8\times 8}$ is a direct outflow of the coefficient matrix.

We call (2) is based on multi-sector longitudinal balance between input and output flows of currency equations.

The model presented in the form from the front we can see directly into (or out) coefficient matrix is a key part of the model is applied to analyze the basis of this model. We build two relatively reasonable coefficient matrixes for more in-depth analysis. In this detailed analysis of our currency outflow of the household sector, the other seven sectors obtained using the same method.

2009 National Bureau of Statistics released by the macro data showed 8697/14281 = 0.609(β_{14}), 0.063(β_{13}), 0.0001(β_{17}), 0.001(β_{18}), 0.0005 (β_{12}), 0.005(β_{13}), 0.0115 (β_{15}), 0.01(β_{16})

Using the same method we can get the direct inflow coefficient matrix *A*, and direct outflow coefficient matrix *B*.

4 The Application of Multi-sector Input-Output Model of Currency Flows

With the longitudinal balance model

$$B^T Y + L = Y \tag{3}$$

We can get

$$Y = \left(I - B^T\right)^{-1} L \tag{4}$$

Then

$$\Delta \mathrm{Y} = (I - B^T)\Delta L \tag{5}$$

Suppose the amount of increasing loans of the central bank is H , so

$$\sum_{j=1}^{8} \Delta L_j = H \tag{6}$$

The monetary circulatory system throughout the range of total flow caused by the Government adjusting the size of loans can be solved by means of the following optimization model.

Range from the upper bound and lower bound of the solution of linear programming are

$$\max \sum_{i=1}^{8} \Delta Y_i \tag{7}$$

$$\min \sum_{i=1}^{8} \Delta Y_i \tag{8}$$

$$s.t. \begin{cases} \Delta Y = (I - B^T)^{-1} \Delta L \\ \sum_{j=1}^{8} \Delta L_j = H \\ \Delta L_j \geq 0,\ j = 1, 2, ..., 8 \end{cases}$$

The range of changing of the currency flow brought by government increasing loans scale

$$\left\{ \min \sum_{i=1}^{8} \Delta Y_i, \max \sum_{i=1}^{8} \Delta Y_i \right\} \tag{9}$$

So, we can get

$$\sum_{i=1}^{8} \Delta Y_i = \sum_{j=1}^{8} \left(\sum_{i=1}^{8} \gamma_{ji} \right) \cdot \Delta L_j \tag{10}$$

Note $\omega_j = \sum_{i=1}^{8} \gamma_{ji}$

Because of $\Delta L \geq 0$. We find that $\sum_{i=1}^{8} \Delta Y_i$ is biggest when increasing loans join in $\omega_{\max}$ corresponding sector, and $\sum_{i=1}^{8} \Delta Y_i$ is smallest when increasing loans join in $\omega_{\min}$ corresponding sector. so the solution of optimization problem is :

$$\max \sum_{i=1}^{8} \Delta Y_i = \omega_{\max} .H \tag{11}$$

and

$$\min \sum_{i=1}^{8} \Delta Y_i = \omega_{\min} .H \tag{12}$$

By calculating the actual value of matrix $\left(1 - B^T\right)^{-1}$, we can get the sum of coefficient for each column, then analyzing how the changes of loans in various sectors influence the total currency flow ω_j. $\omega_{\max}$ =4.8041 and $\omega_{\min}$ =1.6932, Corresponding to the raw material and intermediate products manufacturing enterprises and commercial banks.

If all the increasing loans H add to materials and intermediate products manufacturing enterprises, then the whole system's currency flow will increase 4.8041H; if all the re-lending and rediscount form enter the commercial banking sector, then the whole system's currency flow will increase 1.6932 H.

5 Conclusion

In this paper, set directly into the coefficient matrix and coefficient matrix are obtained directly out of a multi-sector flows between the currency movement of the coefficient matrix completely and totally out of the coefficient matrix, and then a detailed analysis of the deposit, respectively, thus changing the system, and the total currency flow in Change currency loans to total system flow. In accordance with this set of data and the model used in this paper and the result more in line with practical significance, which to some extent, input-output analysis shows currency flow problem in the study on the feasibility. Meanwhile, we can get this result: either a separate sector of the change in deposit or loan, or all sectors at the same time changes in deposit or loan, loans, currency changes on the whole flow of the total system to Change on the entire system is greater than the total deposits of currency flow.

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The Application of PDCA Cycle Management in Quality Control of Cultural Relics Protection

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Abstract. Cultural relic's protection project, being different from construction project or regular house maintenance project is a practical activity of protecting cultural relics as well as an embodiment of natural science research achievements. It is of vital importance for safety and value of cultural relic whether protective measures are reasonable or not. Quality of cultural relic's protection project has such features as a wide range of involvement, complex content, strong profession, high quality requirements, complex formation process of project quality, various factors for project quality, wide fluctuation of project quality level, etc. In order to ensure the quality level of cultural relic's protection project, use PDCA cycle management method in the construction process to manage and control major factors of cultural relics protection such as people, material, construction method, natural environment, etc. Carry out operation by strictly follow the PDCA cycle management sequence of four stages and eight procedures so as to guarantee the quality of cultural relics protection effectively.

Keywords: PDCA, cultural relic's protection, quality, control.

1 Introduction

Cultural relics protection refers to the protection project of such immovable cultural relics as ancient cultural sites, ancient tombs, historic buildings, cave temples and stone inscriptions, important historic sites of modern times, representative buildings, frescoes and others, which are approved as sites of historical interest and cultural relics to be given special protection and have values of cultural relics. Project of cultural relics protection can be divided into several types, such as maintenance project, emergency rescue and reinforcement project, restauration project, protective facilities construction project , relocation project, etc.

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Cultural relic's protection is different from construction project or regular house maintenance project, which is a practical activity of protecting cultural relics as well as an embodiment of natural science research achievements. It is of vital importance for safety and value of cultural relic whether protective measures are reasonable or not. Cultural relics are nonrenewable, so any negligence in protective measures would bring about irreparable consequences. Besides, reputations of construction enterprises might also be influenced. Therefore, project manager and management team should always give top priority to project quality in management.

2 Quality Features of Cultural Relics Protection Project

Cultural relics are precious historical and cultural heritages as well as nonrenewable cultural resources. For cultural relics of different historical periods, operating techniques and procedures of various types of work in protection project are different from each other, and materials are quite different as well. Cultural relics protection is a large and complex systematic project, which needs to use comprehensively knowledge of social science, natural science and engineering science, and adopts technological means of various disciplines like architecture, ekistics, building construction, engineering mechanics, the study of cultural relics, archaeology, physics, chemistry, aesthetics, materials science, biology, etc.

The aim of cultural relic's protection is to prevent cultural relics and historic sites from being damaged by natural forces. However, there are various kinds of constituent materials of cultural relics, so a variety of methods of natural sciences are required by cultural relics protection and certain historical knowledge and artistic culture are necessary for personnel of cultural relics protection. Therefore, quality of cultural relic's protection project has the following features: a wide range of involvement, complex content, strong profession, high quality requirements, complex formation process of project quality, various factors for project quality, wide fluctuation of project quality level, etc.

3 Quality Control Principles of Cultural Relics Protection Project

Project construction stage is an important process of project entity formation and final product quality formation. Construction quality control is bound to be the most important link of project quality control. The formation of final construction product quality is a complex system engineering, so construction quality control of cultural relics protection must be decomposed in accordance with progressing stages of the system, which can be generally divided into: construction preparation quality control, construction process quality control, final acceptance quality control.

4 Quality Control Methods of Cultural Relics Protection Project

4.1 Fundamental Principle of PDCA Cycle Management Model

PDCA cycle is also called Deming cycle, which was firstly put forward by an American statistician named Charles Deming in 1950s. It is the scientific procedure abided by total quality management. PDCA cycle can be divided into four stages and eight steps, of which the basic content includes:

The first stage is the planning stage (Plan stage). The main task of this stage is to draw up a corresponding plan of quality target and formulate specific measures and methods for reaching the target by investigating and analysing construction environment, influencing factor and project quality requirements. Specific working procedure of this stage can be divided into four steps:

The first step is to analyse current situation and find out existing quality problems, The second step is to analyse reasons and influencing factors of quality problems, The third step is to find out the main reason or influencing factor from a variety of reasons and factors.

The fourth step is to formulate technical organizational measures for quality improvement aiming at main reasons or factors of influencing quality, put forward the plan for implementing measures, and estimate effect.

The second stage is the implementation stage (Do stage). The main task of this stage is to organize all strengths to implement separately and seriously according to the plan and measures formulated in the first stage. This is the fifth step in management cycle, namely implementing measures and plan.

The third stage is the stage for checking (Check stage). The main task of this stage is to compare implementation effect with anticipated target, check the situation of implementation to see whether get expected effect or not. This is the sixth step of management cycle, namely checking effect and finding problems.

The fourth stage is the processing stage (Action stage). The main task of this stage is to conclude and process, which can be divided into two steps, namely the seventh and the eighth step of management cycle.

The seventh step is to sum up experience and bring it into standard. The eighth step is to transfer unresolved issues of this cycle to the next management cycle for providing the next plan with data information and foundation.

4.2 Controlling Factors of PDCA Cycle Management Model

According to analysis, factors for construction quality control of cultural relic's protection include people, equipment, material, process control, construction technology, etc. Determined major factors for construction quality control of cultural relic's protection include people, material, construction method, influence and control of natural environment, etc. Formulate corresponding solutions in accordance with major factors.

(1) Control of influencing factors of project participants: Project participants refer to personnel who take part in project directly or indirectly, including decision-maker, organizer, commander and operator of engineering construction. In consideration of the particularity and the specialty of cultural relics protection, project participants have to not only be familiar with national laws and regulations that are related to cultural relics protection, but also grasp principles, planning formulation requirements, survey design and technical regulations, fundamental skills and construction methods of cultural relics protection project. The key of construction quality lies in ensuring qualities of participants, which include ideological quality, quality consciousness, responsibility, the spirit of cherishing posts and devoting wholeheartedly to work, professional skill level, etc. Construction quality of project is created by people.

(2) Control of material quality: Materials of cultural relics protection refers to various raw materials, which are introduced and consumed for meeting requirements of protection project. Because of the wide range of cultural relic's protection projects and the great variety of constituent materials of cultural relics, there are traditional materials like bricks, tiles, stones, wood, paint, pigments, etc. and repairing materials for cultural relic's protection like all kinds of polymer materials, adhesives and others. Materials of cultural relic's protection serve as the material base of the project. Selecting materials properly and reasonably and ensuring quality of materials are important premises of guaranteeing project quality. This is an intrinsic factor for quality of cultural relic's protection project.

(3) Control of construction methods: Construction methods of cultural relics protection refers to construction scheme, construction technology, operational sequence and approach, operational process, detection means, etc. It is not only able to achieve results in terms of safe production, economy and work efficiency but also one of the important conditions for being helpful to improve project quality and ensuring reliability and stability of project quality that formulate technologically feasible and economically reasonable construction scheme, choose appropriate construction technology, operational sequence and operational process, and adopt proper detection means.

(4) Control of influencing factors of natural environment: Cultural relics protection involves various kinds of immovable cultural relics such as ancient cultural sites, ancient tombs, historic buildings, cave temples and stone inscriptions, important historic sites of modern times, representative buildings, frescoes and others, so different cultural relics protection projects have different geographical locations, which are also different from each other in terms of meteorological, hydrological and geological conditions. Besides, environmental factors of the same project would also be varied at different times. Traditional technologies are mostly used in cultural relic's protection for repairing cultural relics. Therefore, natural environment factors, such as temperature, humidity, wind and rain, have the most complex influence on material and technology selection of cultural relic's protection. External natural environment is closely related to project quality assurance.

According to different targets of all stages in cultural relics protection and focusing on major factors that influence cultural relics protection, make use of "PDCA" cycle of each stage to circulate layer by layer, form a three-dimensional cycle set of project quality control to carry out lateral and longitudinal control and implementation layer by layer, and operate by strictly following the sequence of four stages and eight steps of PDCA cycle management model. All these are of positive and great significance for ensuring project quality of cultural relic's protection and improving the level of cultural relic's protection.

5 Conclusion

With the rapid development of China's society and economy, undertaking of cultural relic's protection is becoming increasingly concerned by the society. Investment of the state and local authorities increases several times over year by year. In addition, the number of cultural relics is multiplied as well. Among more than 800000 immovable cultural relics which are registered for protection, more than 600000 cultural relics are newly added in recent years. Therefore, the number and the scale of cultural relic's protection projects will be increased significantly.

Cultural relics are nonrenewable historical and cultural resources. Inferior "cultural relic's protection project" not only fails to protect but also causes an irreparable loss for cultural relics, or even devastating damage. It is obliged for cultural relic's protection to give top priority to quality all the time. Carry out PDCA cycle management model in cultural relic's protection project and strictly control quality of each link in project, so as to form a whole set of rigorous and scientific project quality management system, improving quality control and management of cultural relic's protection project to a new level.

Acknowledgement. The Paper Supported by State Key Lab of Subtropical Building Science, South China University of Technology.

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Analysis on Reasons for Difficulties of Performance Management of College Teachers

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Abstract. Teacher performance management is adopted broadly in colleges, but the effect of implementation is not ideal. According to analysis, the reasons include lack of attendance of superior managers in teacher performance management, too much importance on rewards and punishments, neglect of future development of teachers, single evaluation index of teacher performance, weak pertinence, absence of subject status of teachers in the evaluation, equating performance evaluation to performance management, incomplete result feedback mechanism of the evaluation, lack of reevaluation system of the evaluation, etc. The paper comprehensively analyzed reasons for ineffective performance management of college teachers, to offer reference for improvement of management system of college performance.

Keywords: College teachers, performance management, difficulties, reasons.

1 Introduction

Along with the deepening of higher education revolution in China, teacher performance management attracts more and more attention, and many experts and scholars have recognized its importance, and made some explosive research work on reasons of bad implementation effects. For example: Xiong Lan [1] pointed out that the reason for failure of performance management of college teachers is inaccurate positioning of performance evaluation, single means and insufficient feedback, etc.; Li Zhishan [2] pointed out that the reasons for failure of performance management are equating performance evaluation to performance management and insufficient importance attached by the superior, etc.; Wei Junhua [3] said the reason lies in single evaluation subject, lack of pertinence of evaluation indexes and simplicity of methods, etc.; Li Yongzhong [4] pointed out that the reasons for the failure include incomplete thinking recognition of the company leaders on performance evaluation, neglect of performance communication section, etc.; Pan Xiaoli and others [5] thought that the reasons include subjectively unclear evaluation objectives, objectively lack of standards, single means, etc. At present, experts` and scholars` analysis on reasons of failure of performance management are

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mainly in some or several aspects, but few people has made any systematic research. This paper analyzes reasons for failure of teacher performance management in China in a systematic way, and finds following respects of reasons:

2 The Lack of Attendance of Superior Managers in Performance Management of Teachers

At present, many college managers of China do not have enough understanding of teacher performance management, which is only taken as a routine work, and they do not design the management system from a strategic height in a systematic way, so that the strategic objectives cannot be distributed to teachers through layers of performance management, causing discrepancy between college strategy and teacher performance evaluation objectives, and the strategic development goals of colleges cannot be ensured even if the work of performance management is done well. Besides, implementation of teacher performance management involves redistribution of many people's interests, so it will surely encounter many obstructions, in the face of the obstructions, only active attendance, all-out support and assistance of superior leaders can unite various powers to complete the management work together. However, many superior leaders do not care much about the performance management, and lack consciousness and actions of active attendance, as a result, most teachers regard the performance evaluation as selecting "excellences", and deal with it with an unconcerned attitude.

3 Attaching Too Much Importance to Rewards and Punishments, and Neglecting Development of Teachers

College teachers are typical knowledge-type employees, most of whom received regular doctor and master education, and have nice professional qualities and academic levels, they hope that they can keep growing in the development of colleges and gain respect, trust and affirmation from others; meanwhile, they are eager for a loose external environment, etc. However, colleges in China have been carrying out traditional personnel management since a long time ago, and such management brings "reward and punishment type evaluation" in performance management. It takes the objective of performance management simply as a means of achieving short-term objective of colleges, and regards results of the evaluation as evidence for rewards and punishments, to make related decisions including promoting, salary increase, degradation, dismissing and so on. So qualified teachers and mature teachers cannot be motivated, and their potential cannot be effectively developed. As a result, they take negative actions of "no merits, no demerits", and make no efforts for progress but only pursue completion of assignments.

4 Single Evaluation Index of Teacher Performance Evaluation and Poor Pertinence

Due to differences in personal life background, teaching time, knowledge and experience, working experience, interests, personalities and so on, college teachers can be divided into different kinds based on development stages, including novice teachers, adaptive teachers, skilled teachers, expert teachers and problem teachers; besides, colleges can be divided into teaching type, teaching research type, research teaching type and research type, and groups of college teachers also include teaching-oriented group, scientific-research-oriented group and teaching-and-research-balanced group. Different kinds of colleges, different teacher groups and different development stages of college teachers have different rights and duties, so we should make it distinguished in designing performance evaluation index system, and improve scientificalness and rationality of design of performance evaluation index system. However, most evaluations of college teachers in China at present adopt single evaluation index system to evaluate different kinds of college teachers, and rarely consider diversity of colleges, diversity of kinds of teachers and differences of development stages of teachers, and have problems including serious "lack of differentiation".

5 Neglect of Subject Status of Teachers in Performance Evaluation

The Teachers Law of China regulates that: Teacher performance evaluation should be objective, fair and accurate, and should fully absorb opinions from teachers. However, in current management of performances of the teachers, with serious absence of teachers as subjects in the evaluation, teachers are often in a passive position in the performance management, and have few say in respects of purpose, contents, methods, process and results of evaluations. As a result, their initiative and activity in the evaluation are discouraged, and they can only regard the evaluation in a position of a bystander, and lack due acceptance of the evaluation.

6 Equating Performance Evaluation to Performance Management

As shown in Fig.1, the process of performance management of college teachers contains decomposition and transmission of strategic objective, making of teacher performance plan, implementation of performance tutorship and assistance, performance evaluation, and feedback and utilization of performance evaluation results. Performance management of teachers emphasizes starting from strategic objectives of colleges, and making teacher performance plan through scientific decomposition. It attaches importance to information communication and result feedback in the process of generation of performances, and focuses on comprehensive utilization of performance evaluation results. College teacher performance

evaluation is an important section in the management system of performances of college teachers, it must be closely linked with sections including making of performance plans, process management, performance feedback and rewards and punishments, to form a dynamic evaluation circulation system, and promote implementation of overall strategic objectives of the colleges and comprehensive personal development of teachers. However, many colleges in China equate performance evaluation to performance management, and do not decompose strategic objectives and make performance plans in advance, do not provide tutorship and assistance of performances, and regard completion of performance evaluation as the end of the work, and the evaluation results are not associated with salaries, rewards of the teachers.

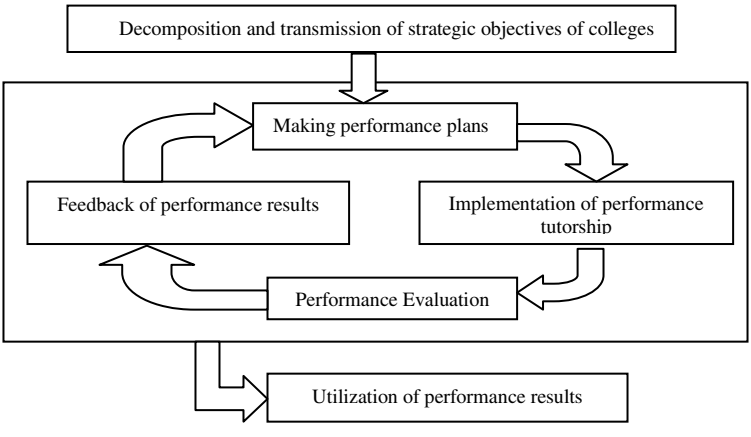

Fig. 1. Process of performance management for college teachers

7 Incomplete Feedback Mechanism of Performance Evaluation Results

Performance management of college teachers aims to help the teachers to find problems and reasons in the performance practices through performance management, to make corresponding solutions, to improve performance abilities and levels of the teachers, and to promote their professional growth. At present, results of performance evaluations in most colleges in China are only known by the personnel department of the colleges, thus there is no feedback, or only performance scores are released, without any written or oral feedback or explanation of performance results, not to mention improvement suggestions to problems in the performance results. Most teachers do not know their performance conditions of the last evaluation period, and have no idea of ways of improvement, as a result, they regard the evaluation as a work that has to be done in the routine procedure,

instead of taking it as an effective method for diagnosing and improving their performances.

8 Lack of Reevaluation System of the Evaluation for Teachers

Reevaluation of the teacher evaluation can help us find problems in evaluation system, improve and complete the management system as soon as possible, carry out performance management in a scientific way, motivate the teachers in performance management, and thus improve their performance levels and abilities. However, most performance evaluations of college teachers in China stop the work upon completion of the evaluations, and do not reevaluate the process and results of the evaluations; therefore, scientificalness and rationality of the process and results of the evaluations are inadequate, and teachers lack acceptance of the evaluation results.

9 Conclusions

Scientific performance management of teachers is an effective method for growth of teachers. This paper analyzes reasons for ineffective performance management of college teachers, to provide reference for improvement of performance management of college teachers in China. What needs to be pointed out is that as the reason analysis of ineffective performance management of college teachers is still in the start-up phase, its scientificalness is to be improved in future researches and practices.

Acknowledgments. Project funded by China Postdoctoral Science Foundation: The performance evaluation of Phase Achievements of Research on Differentiated College and University Teachers (20110491772).

Present paper is Educational and Teaching Research Project of Jiangxi Province: Phase Achievements of Research on Differentiated College and University Teachers' Teaching Quality Evaluation System.

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Lecture Notes in Computer Science: Teaching Quality Assessment Model for Software Engineering

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Abstract. In order to solve the problems in current teaching quality assessment, a new approach of developing teaching assessment model based on actual situation and characteristics of each professional discipline is proposed. By introducing two tier assessments, an "independent three-body, two-level assessment" model is developed for software engineering.

Keywords: Software engineering assessment teaching quality.

1 Introduction

Teaching quality assessment determines teacher effectiveness based on the requirements of educational objectives and certain rules. It has functions of direction, control, incentive, diagnostic and identification. If assessment models are scientific and objective, they can bring five functions into play. Otherwise, classroom teaching will be directed to the wrong track. Thus, it is crucial to develop a scientific and objective teaching assessment model for teaching quality evaluation.

2 Problems in Current Teaching Quality Assessment

Although different universities use different assessment models, they are basically the same; all consists of student questionnaire, colleague and administrator assessment. This model is actually using simple and fixed way to measure complex teaching activities. There are many problems in its execution, such as:

(1) The measures of teaching quality emphasize the descriptive, formal and easily quantified indicators and can not capture info about the specific strategies teacher used. Also the measures lack of detailed info about teacher's ability and creativity, and interaction among the elements of teaching [1].

(2) The criteria of assessment use unvaried and formulaic indicators to measure full of personality of teaching activities. These criteria are often difficult to reach

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the most essential things of teacher effectiveness. Therefore they can not completely and effectively reflect teaching quality.

(3) Assessment, which affected by the interpersonal relationships, becomes an interpersonal trade and does not objectively evaluate teacher effectiveness.

(4) Students do not treat teaching evaluation seriously. They simply give all instructors the same score or give higher score to instructors who give higher score to their students. These mislead instructors spoiling their students.

(5) No matter what type of discipline and no matter which professional subject, all of them uses the same measure to evaluate the teaching quality and ignores the specific conditions and characteristics of each professional subject.

In order to solve the problems above, we build assessment model based on the characteristics of each discipline or subject. Following is an example.

3 Ideas of Building Assessment Model for Software Engineering

The characteristics of software engineering are practice, engineering and practical. Based on those characteristics, we reform the teaching assessment as follows:

- The target of teaching assessment changes from teacher to students' outcome, using students' outputs evaluating the specific inputs from teacher. The criterion is changed from the quantity of acquired knowledge to ability level of students' practically doing projects.
- To reduce impact of interpersonal relationships, teaching executants (teachers and students) are relatively independent with teaching evaluator, which makes the evaluation more effective and avoids useless.
- Dynamic mechanism is used to reflect teachers' ability and creativity. By combining the dynamic evaluation and static evaluation, the results of teaching evaluation are more scientific, objective and comprehensive [2].

4 Independent Three-Body, Two-Level Assessment Model

The ultimate goal of theoretical study is to guide practice, and practice evaluates theoretical study. Therefore, the assessment model consists of course group and project group. They are relatively independent. The outputs of course group guide the practice of project group, and the practices of project group, in turn, verify the outcomes of course group. As practice should meet demand of enterprises, enterprises evaluate outcome of project group. The structure of assessment model is shown in Fig.1. The course group maintains theory courses and corresponding "basic experiment", and discards "comprehensive experiment ", "curriculum design", etc. Because "basic experiment" attached to a certain course of theory course do not match with the actual project practice. Project group maintains independent practice courses, such as comprehensive experiment, production practice, etc. Each course maintained by project group corresponds with one or more courses maintained by course group. Two groups are parallel and contents correspond with each other.

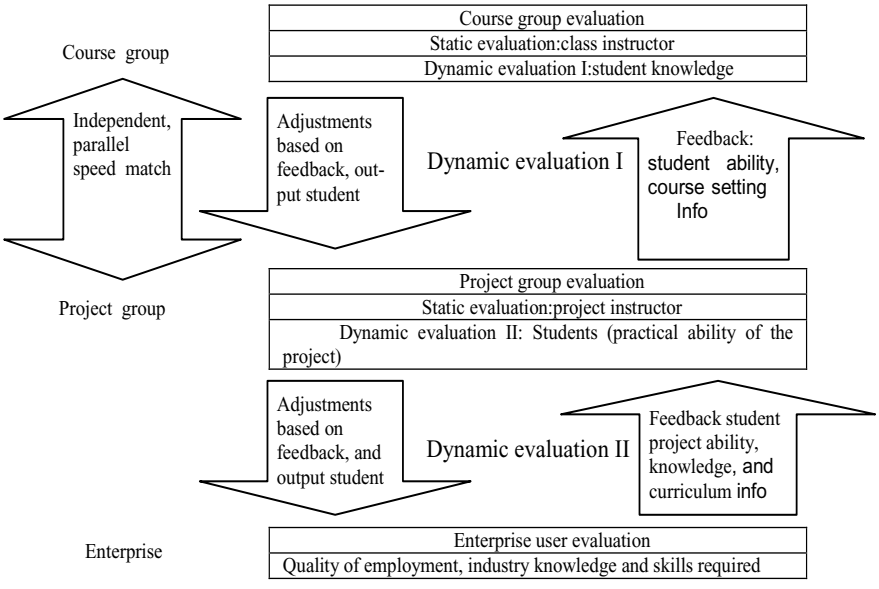

Fig. 1. Structure of assessment model

4.1 How to Evaluate Course Group

Course group assessment = W1×(static evaluation) + W2 ×(dynamic evaluation I), where W1 and W2 are weights, static evaluation is conducted by students via network. Teachers are objects. Dynamic evaluation I is operated by project group designing projects based on corresponding course content offered by course group. Then, students' outcome is evaluated via projects practice. It returns the feedback of students' ability, course content and settings to course group. After adjustments based on feedback, course group re-exports the next round of students.

4.2 How to Evaluate Project Group

Project group assessment = W1×(static evaluation) + W2×(dynamic evaluation II). In dynamic evaluation II, enterprises based on industry knowledge and skills required for employee evaluate students' practical ability and return the feedback of professional knowledge and project requirements to project group. Project group makes adjustments based on feedback and re-output the next round of students.

4.3 Implementation of Dynamic Evaluation I

The dynamic evaluation I is implemented as Fig. 2. Project group designs projects corresponding to the contents of one or more courses offered by course group, and students complete the project independently in an entirely open environment. Evaluation of corresponding teaching quality is based on students' performance on those projects.

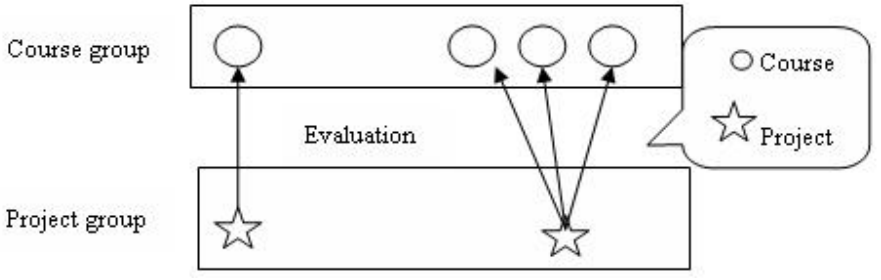

Fig. 2. Dynamic Evaluation I

4.4 Implementation of Dynamic Evaluation II

The dynamic evaluation II is implemented as Fig. 3. Enterprises evaluate students' ability of project practice via training programs, internships, and 3 +1 model.

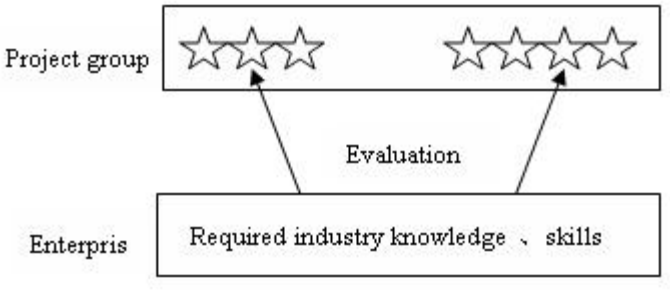

Fig. 3. Dynamic Evaluation II

Overall, "independent three-body, two-level assessment" model takes an iterative approach to the teaching quality assessment process. The requirements of enterprises evaluate students' engineering practice and students' practices evaluate theory courses in each iteration. Adjustments are implemented and output new iterative students. Each generation is a refinement of the previous generation based on feedback at each level.

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Analysis and Research on Current Phenomenon of "Quitting" from College Entrance Examination in China and Its Countermeasures

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Abstract. The phenomenon of "quitting" from college entrance examination in China is becoming more and more serious and the number of application students is decreasing continually. This shall inevitably cause the situation that some colleges cannot enroll enough students after 3-5 years and then shall get into school running plight or even suffer the closing risk. This is a phenomenon that's worth studying. Based on literature study methods and survey research methods, the article analyzes the reason for quitting from college entrance examination. According to the reasons, positive response strategies are put forward.

Keywords: College entrance examination, Quitting from college entrance examination, Countermeasures, Analysis, research.

Introduction

According to *Survey Report for College Entrance Examination in 2011* released by China Education Online, after the students' sources for college entrance examination reached a record high number of 10.5 million in 2008, it begins to have an overall decline. Compared with 2008, the number of application students in China decreases by 1.17 million in three years but the acceptance rate increases from 57% of 2008 to 72% of this year. It should be a phenomenon worth studying that the number of application students continues to decline while the Chinese higher education continues their scale expanding [1]. As for decline of number of application students for college entrance examination, besides the direct reason of the decline of eligible population which cannot be changed, we should find out clearly what the direct result for the quitting from college entrance examination is, what causes the phenomenon of quitting from college entrance examination and what strategies we shall adopt.

L. Zhang and C. Zhang (Eds.): Engineering Education and Management, LNEE 112, pp. 643–649.
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1 What Impacts Shall Be Made on Chinese Education by Quitting from College Entrance Examination and Decline of Number of Application Students?

Quitting from college entrance examination, decline of number of application students and enrollment expansion of colleges and universities shall make it easy to attend colleges and universities and shall make great impacts on basic education. Meanwhile, the student sources crisis bring subsistence crisis for some colleges and universities and also bring greater reform opportunities for Chinese education [2].

1.1 It becomes Easy to Go to Colleges and Universities, Which Shall also Make Great Impacts on Basic Education

The quitting from college entrance examination has caused the student source crisis. With the annual increase of acceptance rate of the college entrance examination, every person can go to the colleges and universities or the enrollment to colleges and universities shall become an active choice, which shall no doubt release the blind pursuit of the score of some parents, alleviate the pressure of the schools and teachers by the scores and make great impacts on basic education in the near future. It shall untie middle and primary school education and provide a more relaxed environment for the implementation of quality-oriented education.

1.2 The Phenomenon of "Quitting" from College Entrance Examination Brings Subsistence Crisis for Some Colleges and Universities and also Bring Greater Reform Opportunities for Chinese Education

Zhi Wen Chen, the chief editor of China Education Network, believes: it must be very difficult for Chinese colleges and universities to rise to the challenge of reduction of student sources based on their current survival status due to the quitting from college entrance examination. What we can predict is that a number of colleges and universities must face a situation of being unable to recruit enough students and thus get into school running plight and even suffer the closing risk. The rapid expansion of the colleges and universities in recent years mostly depends on school loans and the tuition of the students due to the inadequate investment of the State. Once they are unable to recruit enough students due to the lack of student sources, the schools shall be unable to sustain due to the braking of the funds chain [3].

Therefore, the quitting from college entrance examination and the reduction of application students shall bring subsistence crisis for colleges and universities. Only by improving school quality and having school running characteristics can they have a way out, which shall also bring greater reform opportunities for Chinese education.

2 Analysis on the Reason of Quitting from College Entrance Examination

Since the resumption of the college entrance examination system in China, the enthusiasm for the college entrance examination of the whole society has been rising continually. But why the drop occurred in 2009? What are the reasons of quitting from college entrance examination?

2.1 The Number of Students Who Give Up College Entrance Examination and Study Abroad Continues to Rise Year after Year

There is only a single educational mode in China. All the students must get along the only same road with only a direction. Few considerations are given to the personality of the students. It is unrealistic to teach students according to their aptitude. Many families with good conditions choose to study abroad. The students for studying abroad have become younger and younger and the number is increasing. Now, studying abroad has become a trend.

The data released by Ministry of Education shows that in 2010, the number of students quitting from college entrance examination almost amounts to 1 million of which there are about 200,000 students who quit from college entrance examination due to studying abroad with the proportion of 21%. With three consecutive years of decline in the number of college entrance examination, the number of high school graduates who choose to study abroad is growing in the three consecutive years. In 2002, there are only 200 application students in Mainland China. However, the figure has almost been equal to 20,000 now. Every year, there are many students who give up college entrance examination or even give up the enrollment for many colleges and universities in foreign countries and in Hang Kong.

Especially with the relaxation of the policy each year, China's steady economic development, the decline of the dollar's exchange rate, to study in US is becoming more common and the students are becoming younger and younger. Younger students have gradually become a major force in the tide of students studying abroad. According to the sampling survey data, the proportion of students studying abroad with high school diploma or lower covers 19.75 % of the whole. Most of these students are under 18 years old. Some students are even primary school students.

In recent years, the enrollment of colleges and universities in Hong Kong and Macau is increasing year after year in China Mainland, which also makes impacts on the enrollment of colleges and universities in China Mainland.

2.2 Employment Difficulties of College Graduates becomes the Main Reason

"Lower employment rate and lower payment" is the main factor that leads to the students' quitting from college entrance examination. Under the situations of

global financial crisis, the employment of college and university graduates meets a reception that cannot be colder. “Lower employment rate and lower payment” is the basic reality that proves the higher education in China has been into a hobble. The dream of the graduates of "finding a good job by going to colleges or universities" is severely slaughtered by the reality. At this time, higher education credibility of our country is suffering from an unprecedented crisis. The loss of credibility causes the refusal or discontinuity of the investment by higher education investors. It is no wonder that the quitting from college entrance examination appears under this conditions. Under the conditions that utilitarian public education thought is taken as the fundamental motive factors for the higher education development, lower employment rate and lower payment bears the major responsibility for the quitting from college entrance examination undoubtedly.

2.3 Change of Society Talents Value

Society talents value has changed from “monism of college entrance examination” to “coexistence of pluralism” since the occurring of quitting from college entrance examination. After the concept that the college entrance examination determining the destiny fades out, people can choose the road of becoming talents from the personality of the students but not participating in the college entrance examination and going to colleges or universities.

Nowadays, there are thousands of ways of becoming talents. The educational concepts and talent concepts of many parents are becoming more and more rational. In their points of view, whether it is useful to go to school or whether to take part in the college entrance examination are two different things. The purpose of going to school is not only for college entrance examination but also make the children receive basic education, learn a skill, be able to integrate into the society and become a useful person to the society. Therefore, some students and parents are changing their concepts and finding breach outside of college entrance examination. Some parents let their children give up college entrance examination and select vocational education. Nowadays, the employment condition of the vocational education is even better than some regular colleges and universities, which makes vocational education becomes choices of some high school graduates. This kind of educational concept of small input and early output is no lack of intelligence and rationality, which deserves understanding and respects. In some areas. All of these are the kern and essence of the quality-oriented education [4]. Society talents value has changed from “monism of college entrance examination” to “coexistence of pluralism”.

Besides, there are some other reasons for the students to quit from the college entrance examination, such as the “rational” quitting because of expensive college tuition; student streaming in the compulsory education stage; despair in college entrance examination and choosing to work; being required to “automatically” giving up college entrance examination to boost enrollment rate; quitting from college entrance examination for too much stress etc.

3 The Countermeasure for and Reflection on Quitting from College Entrance Examination

Despite college entrance examination quitting, shrinking number of applications, the college entrance examination has not cooled down. But the numerous topics led to thereof are worth of our reflection and discussion. After all, popularization and receiving higher education is the pursued target of the government and the public. It has self-evident magnificence to enhance the populace's cultivation and building modernized state. We might as well, in virtue of this subject, review and improve the design of college entrance examination, and relevant education and employment policies, promote the beneficial and abolish the harmful and push it to a high level of fairness, reasonableness and effectiveness.

3.1 The Colleges and Universities Shall Respond to the Challenges and Turn "Crisis" into "Opportunities"

Quitting from college entrance examination and shortage of student resources not only brought subsistence crisis to some colleges and universities, but also brought greater chances to make changes. On one hand, it need gross adjustment of education resources in advance. On the other hand, it needs basic structure for stable discipline development. The colleges and universities have entered into an era of brand competition. They could only win by enhancing teaching quality, adjusting the teaching direction and positioning and turn "crisis" into "opportunities".

There are still a huge gap between the school gross enrollment rate of China and the other developed countries. It's expected to be enhanced further in the future 10 years and there is still great potential for the student sources of colleges and universities. But they should be prepared for unexpected development. Because after more than 10-year scale expansion, it's really time for them to virtually enhance their qualities and take the route of connotative development. Therefore, regardless of the declining student sources or participation in international competition, the essence of the challenges facing Chinese colleges and universities is how to enhance their own quality, and enlarge and strengthen the Chinese college education.

Hai Liang Gu, president of Wuhan University said if the colleges and universities don't run schools according to the demand of employment and economic and social development, and pinpoint their orientation and characteristics, "bankruptcies" will become a reality for them. Some colleges and universities lacking of competitiveness shall take the path of intensive development as soon as possible and find the breakthrough of their own characteristic, and prohibit rushing headlong and craving for greatness and success in education. The educational philosophy of some non-governmental colleges and independent institutes is worth of venerating. They combine the cultivation of students with the demand of society for talents and demand of human resource market and take the development mode similar to "community college" in foreign countries.

Hence, quitting from college entrance examination and lack of student sources force the colleges and universities to run the school facing the demand, facing the society, rather than copy the mode of Peking University and Qinghua University unrealistically. For example, some colleges and universities will lay emphasis on the practicality of specialty setup and talents cultivation, truly realizing the division of research-oriented universities and application-oriented universities; the junior colleges shall not look to the universities and excessively pursuit scientific and technological achievements. In this kind of competition, the higher education will be put back in its right place to some degree.

3.2 Education Competent Departments Shall Attach Great Importance to the Size and Quantity of Colleges and Universities and Their Structure Layout in the National Education System

That quitting from college entrance examination will lead to the bankruptcy crisis of colleges and university in China is not sensational. Hai Liang Gu suggests that: the education competent departments shall attach great importance to the size and quantity of colleges and universities and their structure layout in the national education system. The director of the schools and the education departments shall learn from the experiences of Japan and other countries that once were confronted with the similar dilemma, cut short the recruitment plan timely and adjust the school-running direction and positioning, or even implement mandatory adjustment to avoid the social instability of student source decline and school close-down that might arise from students' quitting from college entrance examination [5].

At present, many universities are pursuing "high-level" and take the "world first-class university" as their targets. It is not unusual in the higher education development history of many other countries. After the education goes into the popularization and universalization phase, the colleges will focus on demand, and the classification, stratification and gradation of colleges will gradually emerge. For example, the most typical is the America "California Mode". California University does not only have the top universities such as Berkeley, Davis, and Los Angeles campuses, but also the junior colleges and community colleges. After World War II, California formulated very strict higher education structure and implemented the effective university layout planning mainly according to the demand of economical and social development for talents in California. Its university structure layout is recognized as one of the most important reasons for the burgeoning development of California economy in the twentieth century.

Hence, emphasizing structure and layout and emphasizing matching with the demand of employment and economic and social development, adjusting the specialty and curriculum setup according to the employment and economic and social development will be the important philosophy and inevitable orientation and the only way to avoid bankruptcy for the colleges and universities arising from quitting from college entrance examination.

4 Conclusions

The quitting from college entrance examination is on the increase. It might result in subsistence crisis but it might also bring opportunities for Chinese education reform. In order to turn the "crisis" into "opportunities", we must reasonably analyze the causes resulting in quitting college entrance examination: new regulations like implementation of new curriculum reform leading to the decrease of return students; the employment difficulties of university graduates; the number of students giving up domestic college education and choosing to go abroad for further education continues high in a row of years, etc. According to these causes, we should formulate positive countermeasures: higher education has entered into an era of brand competition. Only by enhancing school's quality, adjusting the teaching direction and positioning can they win student sources and appease the phenomenon of quitting college entrance examination; the education competent department should attach great importance to the size and quantity of colleges and universities and their structure layout in the national education system to turn the dilemma into opportunities for education development.

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Information Security in Network Finance and Its Countermeasures

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Abstract. The construction of financial informationization, which mainly depends on the modern computer network technology, is an inevitable trend of the development of modern financial management. Compared with traditional accounting methods, the financial system in the computer network environment is faced with many new risks. This paper makes an analysis of the information security problem in the network finance and puts forward some countermeasures about the information security of network finance.

Keywords: network finance, security issue, countermeasures.

Introduction

With the popularization and application of the computer, telecommunication and the Internet technology, the network finance is becoming an inevitable trend of financial development in large corporations and public institutions. The upsurge of e-commerce makes corporations shift from the traditional financial management desktop to the network finance. With new financial management ideas, patterns and methods, the network finance breaks through the limits of the traditional financial management theory and pattern. It makes full use of the advanced technology of computer and Internet and improves the process of financial management, thus greatly enhancing the efficiency of the corporate financial management. Compared to the traditional financial management, the network finance has inimitable advantages.

However, at present, many corporations, being lack of knowledge of the basic theory of the network finance and profound experience of its application, simply treat the network finance system as the construction project of the corporate accounting informationization. In the process of the design and construction of the network financial system, great risks exist in the storage and transmission of the network financial data, because of the poor function of the network system, the instability of the network performance and the data loss in the running process and so on. Therefore, it has been an urgent issue for the corporate managers to deal with as to how to make full use of the network technology, in order to construct a

L. Zhang and C. Zhang (Eds.): Engineering Education and Management, LNEE 112, pp. 651–656.
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management system of corporate network finance to meet the increasing demand of corporations.

1 Meaning of the Information Security in Network Finance

"Network finance" is an integrate part of the e-commerce. Based upon the network technology, it will help corporations realize the synergy of finance and transaction, make remote management including remote reports, account rendering, auditing and accounting and so on. With the help of the dynamic accounting, the on-line financial management and the usage of electronic document and cash, it can change the way of the obtaining and usage of financial information. The financial data will be developed into the web data, different from the traditional paper data and the preliminary computerized disk data. It brings about an overall change to the corporate financial management pattern and operation mode. The network finance has its incompatible convenience and advantages. It improves the work efficiency, the accuracy, comprehensiveness and timeliness of the financial information. But at the same time, it also brings about some security risks to the financial work.

The Internet financial information, which is mainly collected, stored, used and transmitted via computer system and Internet, is the study object of the information security in network finance. So we may just as well define it as: The information security in network finance is the countermeasures and relative activities which are taken to ensure the safety of the financial information in the process of the overall information management.

2 Problems Existing in the Network Finance Information Security

2.1 Imperfection of the Relative Laws and Regulations

Network finance is an emerging field of the accounting development, where exist many problems to be dealt with. As to whether the electronic accounting data can be valid evidence or certificate for the auditing and taxation inspection, there are no clear laws and regulations. Meanwhile, the protection of the intellectual property in cyberspace, the protection of personal privacy and copyright are still under discussion. Relative laws and regulations are not complete, thus it is difficult to solve all the problems and disputes existing in the network finance. The newly-enacted accounting law doesn't make any explicit speculations either, which brings great difficulties for the accountancies to correctly record and deal with various financial reports, increasing the uncertainty and risks of the network finance.

2.2 Security Risks Existing in the Computer Network System

2.2.1 Weak Prevention Awareness

With the advancement of the informationization construction in China, governments at all levels, enterprises and public institutions all set up their own websites. The e-commerce is developing at an unprecedented speed. But most enterprises have limited specialized knowledge about the Internet security. And their prevention awareness is weak. In the network establishment and running process, most enterprises, aiming to maximize corporate interests and minimize the running costs, have a common tendency of "emphasizing application and ignoring security".

2.2.2 Risks Existing in the Computer Itself

(1) Computer hardware risks. When the computer hardware has inappropriate configuration or hardware errors, the flow of the network information is affected. Even worse, there will be network paralysis, threatening the completeness of the information transmitted or even resulting in the information loss, which will cause immeasurable losses.

(2) Computer software risks. Software risks can be found in the improper design, defectives and shortage of the risk prevention countermeasures of the computer system. Meanwhile, because the network finance serves its function with the support of the financial software, the computer system will be destroyed if the financial software is not properly installed, maintained, or suffer damage deliberately or not.

2.2.3 Rampancy of Computer Viruses

In the network system, the dissemination of computer viruses does not mainly depend on disks or CDs, but on the network. With the quick development and wide application of the Internet, the dissemination of computer viruses is featured by various channels and fast speed, creating a big threat to the resources of network financial system and the security of accounting information.

2.3 Insiders' Operational Problems

2.3.1 Accounting Staff's Weak Safety Awareness

Due to some accounting personals' weak safety awareness and the lack of necessary countermeasures against Internet security, some people don't make necessary technical inspections and security tests when downloading e-mails or resources from the Internet. Many people even use their birthday and telephone numbers as passwords, which could cause safety problems.

2.3.2 Insiders' Deliberate Attacks

Corporate insiders' deliberate attacks mean that they illegally get the access of the financial information, make modification, leak secrets and destroy the system in deliberate. According to the collected data, most of the illegal accesses come from the insiders. These people always have a good knowledge of Internet. They make illegal access to the financial information, make modification, leak secrets and deliberately destroy the financial system. They annex corporate properties by practicing fraud.

3 Security Countermeasures of Finance Network

The security strategy of financial information system is the specific application of safety strategy of information system in the network finance. In term of the problems existing in the network finance, we should make countermeasures by taking composite factors into consideration. We should create a safe environment in the aspect of completing relative laws, advancing technology and enhancing management to resist the interferences and threats to the system.

3.1 Advance the Enactment of Laws and Regulations

Relative laws and regulations should be enacted to ensure the security and valid of the network finance. The e-commerce involves economic disputes and international arbitrations between corporations from home and abroad. Governments have to solve these disputes with no conventional laws to go to. Therefore, a complete international law system should be enacted. As long as relative laws and regulations concerning the e-commerce are enacted and completed, the on-line transaction is standardized, and the criteria of network finance is made, the security and valid of the network financial system can be ensured. Therefore, the enactment of laws concerning the e-commerce security is imperative.

3.2 Apply the Advanced Internet Technology

A comprehensive multi-level security system should be established. Each level of the finance network system should be protected and standardized, including the communication platform, network platform, operation system platform and the application platform. The financial software should provide powerful data protection, including the security of data storage, data operation, data transmission, data application, data search and data analysis.

3.2.1 The Firewall

The firewall is an access control system which sits between the internal network and the external network. It can filter the information that crosses the network border to resist the illegal intrusion and guarantee the normal work. It provides corporations with an electronic barrier.

3.2.2 Encryption Technology (Key Technology)

Data encryption technology has little influence on the network service and openness. It is the best choice to protect the transmission of information via public network and counter electronic eavesdropping.

3.2.3 Digital Signature

Under the Internet circumstance, electronic marks take place of the accounting data and the magnetic medium take place of paper. The traditional means of signing signature and seal in the process of data transmission will be totally changed. The digital signature should be adopted in the computer communication to proof identity and protect the data completeness.

3.3 Improve the Quality of Operating and Managerial Staff

As a hi-tech product of Internet technology and financial management, the network finance has high requirements of the operating and managerial staff. They should master the Internet technology, have a profound knowledge of financial theory and have skilled operation ability. They are required to solve common faults. They should have the ability of continued study, creation, professional judgment, information processing and analysis. Therefore, corporations should recruit or train highly qualified inter-disciplinary talents who have a good knowledge of Internet and finance. Meanwhile, corporations should strengthen operating staff's professional ethics to prevent them from cheating by using computer system to ensure the authenticity and completeness of the financial information and guarantee the information security of the corporate finance network.

4 Conclusion

As a new financial management pattern in the corporate practice of financial management, the network finance, combining the modern Internet technology and financial management, is not only a managerial behavior reform of a single sector, but also an overall innovation of the corporate managerial mode. Corporations should make all-sided consideration according to their actual situation, minimize the risks of network financial information and set up a reliable, multi-level information system in network finance.

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Research on Doctor-Patient Knowledge Transfer Model and Management Strategy Based on Patient Trust

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Abstract. Doctor-Patient Trust plays an important role in doctor-patient relationship and in Doctor-Patient Knowledge Transfer. This paper designs Doctor-Patient knowledge transfer model based on patient trust through literature review, interviews, questionnaires. Meanwhile, this paper does empirical investigations for the variables of the model, and modifies the model of Doctor-Patient knowledge transfer. At last, this paper finds the influencing factors of Doctor-Patient knowledge transfer: perceived hospital strength, medical environment, publicity of information, relationship strength, satisfaction, communication competence. What's more, this paper examines the mediating effect of patient trust in Doctor-Patient knowledge transfer. On this base, this paper modifies the Doctor-Patient knowledge transfer models. Finally, this paper proposes management strategy such as winning patient trust, training doctors communication skills by some means, Constructing standardized and public medical system.

Keywords: Doctor-Patient Trust, Patient Trust, Doctor-Patient Knowledge Transfer Model, Management Strategy.

1 Introduction

Tension between doctors and patients, the frequent occurrence of medical malpractice is one of the major social problems. There are many reasons for it. One important reason is Information asymmetry between doctor and patient. So Doctor-Patient Knowledge Transfer becomes more and more important.

Trust plays an important role in doctor-patient communication and knowledge transfer. Ommen, Janssen, et al. (2008) [1] indicated that in the treatment process, trust can enable better medical treatment, and treatment also can enhance patients' trust. When the patient does not have feelings about doctors' trust, openness, curiosity and sense of respect, physician-patient barriers to knowledge transfer will occur and affect the treatment (Quill, 1989) [2]. However, the commercialization of the hospital and high health care prices make the doctor's credibility been doubted. At this point, studies about trust in the doctor-patient relationship and how to enhance patient trust are significant both in theory and practice.

L. Zhang and C. Zhang (Eds.): Engineering Education and Management, LNEE 112, pp. 657–663.
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2 Model Propose

2.1 Indexes Propose

First level indexes propose

There are three main schools of thought about antecedent of trust: social cognition perspective, social exchange theory and the theory of economic exchange. This paper integrates the three views into a comprehensive perspective. The research results of antecedents of trust are trusted-side capacity, goodwill; Recipient's organization factors; strength of the relationship, mutual exchanges of experience. This papter combined the research about doctor-patient knowledge transfer, the factors are doctor, hospital and relationship strength, which are the independent variables of this research.

Second and third level indexes propose

As the medical industry has its own particularity, the paper proposes second and third indexes. This paper reads the existing literature, interviews senior consultants about hospital management , experts, hospital administrators, doctors and nurses. At last, this paper proposes the indexes shown in table 1.

Table 1. Indexes of Model

First indexes	Second indexes	References
Hospital	Perceived hospital strentgh	Doney & Cannon(1997) [3]
	Medical environment	Jin Yufang, Dong Dahai(2004) [4]
	Publicity of information	Tang Zhuangju, Wang Chunxiao Cen Chengde (1999) [5]
Doctor	Perceived professional competence	
	Communication competence	Mast, Hall et al(2007) [6]
Context	Relationship Strength	Granovetter(1973) [7]
	Satisfaction	Delgado-Ballester&Munuera-Aleman(2001) [8]
Trust	Cognitive trust to hospital	Ganesan & Hess(1997) [9] Tang Zhuangju, Wang Chunxiao Cen Chengde (1999) [5]
	Emotional trust to hospital	
	Cognitive trust to doctor	
	Emotional trust to doctor	

2.2 Theory Model and Research Hypothesis

This proposes hypothesis as follows:

H1: Hospital, doctor and context have a significant correlation with knowledge transfer performance.
H2: Patient trust has a significant correlation with knowledge transfer performance.
H3: Patient trust plays a mediating role between knowledge transfer performance and its influencing factors.

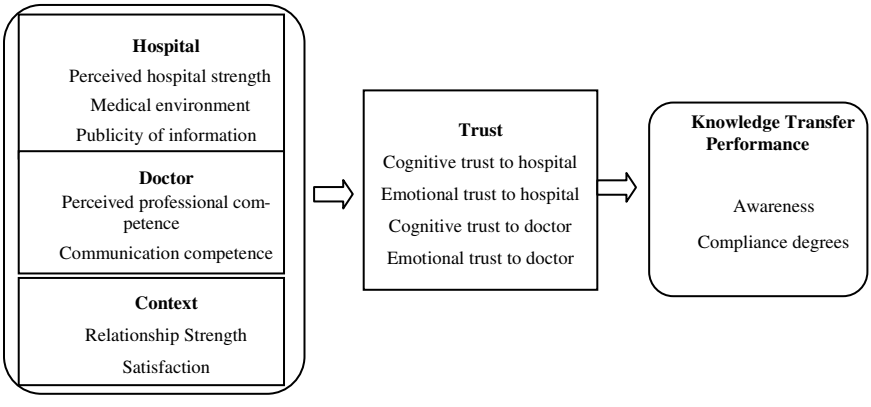

Fig. 1. Theory Model

3 Sample and Data analysis

3.1 Sample

In this study, 345 survey questionnaires were distributed and 304 were returned, 278 copies of valid questionnaires, 80.6% efficiency. During the process, investigators explain the relevant issues and donate gifts to patient to ensure the efficiency of investigation.

3.2 Data Analysis

Factor analysis
Each variable is suitable for factor analysis. After factor analysis, most of the dimension of variables by validation is correct, except trust. Trust dimension are divided into 2: trust to hospital and trust to doctor.

The patient perception of one aspect of the doctor will be expanded to cover other aspects of the perception that psychology called "halo effect." In daily life, "halo effect" often quietly influence our perception and evaluation of others. Therefore, this paper accept the results of factor analysis.

Correlation and regression

This section mainly analyses the relationship between independent variables and knowledge transfer performance through correlation analysis and regression analysis. The results are shown in table 2.

Table 2. Relationship between independent variables and knowledge transfer performance

Dependent variables / Independent variables		Awareness			Compliance degrees		
		Correlation	Regression	coefficient	Correlation	Regression	coefficient
Hospital	Percevied hospital strength	++					
	Medical environment	++			++		
	Publicity of information	++			+		
Doctor	Communication competence	++	√	0.502	++	√	0.310
	Perceived professional competence						
Context	Relationship strength	++			++		
	Satisfaction	++	√	0.350	+		

As table 2 shown, except perceived professional competence, other independent variables all have significant correlation relationship with knowledge transfer performance. However, only two independent variables (doctor communication competence, patient satisfaction) enter the regression equation. The regression coefficient of doctor communication competence and compliance degrees is 0.310. The regression coefficient of doctor communication competence and Awareness is 0.502, The regression coefficient of patient satisfaction and Awareness is 0.350. So doctor communication competence have a high influence to Awareness.

The mediating effect of patient trust

This paper verifies the mediating effect from tow aspects: trust to hospital and trust to doctor.

Regression equation of awareness and trust is shown as Eq. 1, so both trust can be predictive variables.

$$\text{Awareness} = 0.53*\text{Trust to doctor} + 0.24*\text{Trust to hospital} \quad (1)$$

After joining the trust to hospital, coefficient of communication competence and satisfaction are still significant. But there are respectively 26.7% and 37.1% declined. What's more, after joining the trust to doctor, coefficient of communication competence and satisfaction are stil significant. But there are respectively 44.8% and 44.9% declined. So the mediating effect of patient trust to awareness is verified.

Regression equation of compliance degrees and trust is shown as Eq. 2, so just trust to doctor can be predictive variables.

$$\text{Compliance degrees} = 0.34*\text{Trust to doctor} \quad (2)$$

After joining the trust to doctor, coefficient of communication competence is still significant. But there are respectively 58% declined. So the mediating effect of patient trust to compliance degrees is verified.

4 Conclusion

4.1 Revised Model

As figure 2 shown, this paper gets conclusion as follows.

Hospital, doctor and context are important factors influencing doctor-patient knowledge transfer performance.

Perceived hospital strength, medical environment, publicity of information, relationship strength, satisfaction, communication competence are the factors influencing Doctor-Patient knowledge transfer performance. All of them have high correlation with awareness. Medical environment, relationship strength, doctor communication competence have high correlation with compliance degree, others have low correlation with compliance degree.

Patient trust has an important influence to knowledge transfer performance.

Patient trust plays a mediating role between knowledge transfer performance and its influencing factors.

Trust to hospital has mediating effect between satisfaction and awareness, communication competence and awareness. Trust to doctor has mediating effect between satisfaction and compliance degree, satisfaction and awareness, doctor communication competence and compliance degree, doctor communication competence and awareness.

4.2 Management Strategy

On these conclusions, this paper proposes management strategy as follows.

The medical institutions and the doctor should try hard to win the trust of the patients.

The research results indicate that, patient trust play a significant mediating effect. The high trust makes higher knowledge receiving and absorption will, which makes the treatment result better.

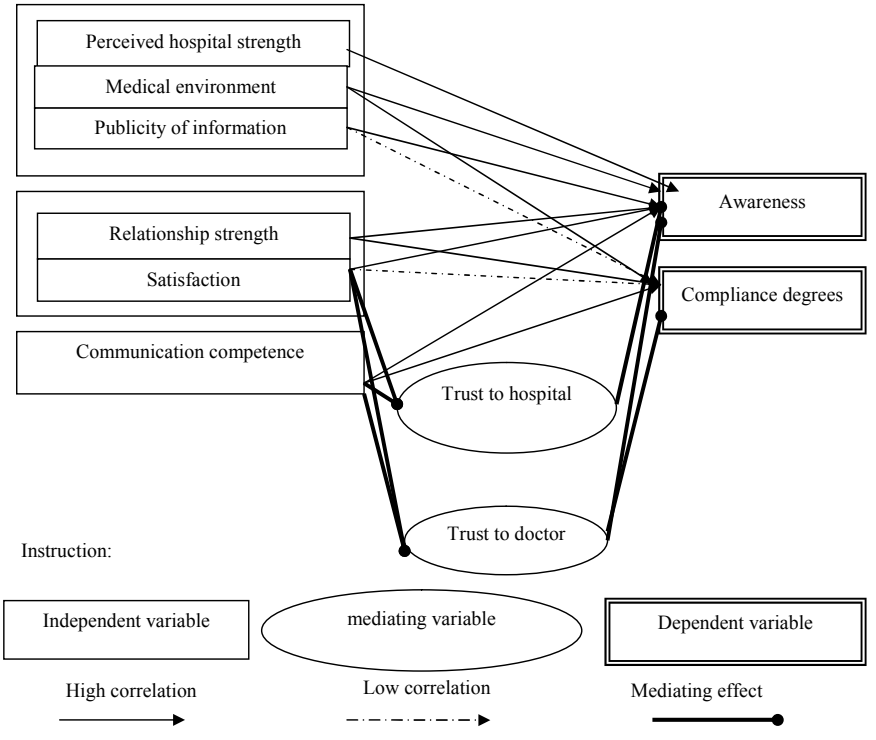

Fig. 2. Revised model

To improve the attention to doctor communication competence and patient satisfaction.

Only doctor communication competence and patient satisfaction enter and regression equation. So the importance of them is obvious. We could improve doctor communication from two aspects. One is training doctors' information understanding ability and language ability. The other is encouraging doctors give more care, listen to patients, which make higher patient emotional trust.

Constructing standardized and public medical system to improve patient trust.

In our medical industry, medical policies put too much consideration on efficiency, medical resource monopoly, and lack of credibility to the doctor make patients group whole produced distrust. So we should construct standardized and public medical system, make patient change their image about hospital.

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The Application of Subjective Teaching Method in Computer Programming Courses Teaching

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Abstract. The traditional teaching methods can not meet the age requirements for qualified personnel, a new round of curriculum reform requires updating teaching ideas, changing teaching methods, reflecting students' dominant position in the study, developing the innovative spirit of students, forming the lifelong learning awareness and capacity. Subjective teaching method's goal is training students' innovation spirit and practical ability, reflects and responds to the age needs of education, is an effective way to implement the new curriculum; it has been the general concern of educators, and becomes the focus point of future curriculum reform. This paper briefly describes the background, status and significance of the implementation of the subjective teaching method and the main theoretical knowledge of subjective teaching methods, and to detailed analyzes and explores the implementation target and organization and others of programming courses.

Keywords: ubjective teaching method, computer programming, teaching, curriculum reform.

1 Introduction

With the development of information technology, computers have been widely used in all area; computer education rises with it and has been paid more and more attention. Computer programming courses can not only improve the students' ability of computer application, but also help them to develop logical thinking ability and creative ability. Therefore, the importance of programming courses is self-evident. Universities have basically set up the programming courses for all professions as part of basic computer education; from the national to the provinces have also set up different levels of computer skills proficiency test, the programming is a compulsory element. By changing the status of receiving notification, rote, mechanical training, it advocates students to participate actively, be willing to explore and diligent in hands-on, training students' abilities to collect and process information, to access new knowledge, to analyze and slove the problems, and to communicate and cooperate. Education methods to train students the main spirit of innovate and practical. Based on careful study of the theory of subjective teaching, this paper proposes it to programming courses, hoping that it can guide the teaching of programming courses, thereby improving the teaching situation, increasing students' interest in learning and mobilizing teachers' teaching enthusiasm.

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2 The Theoretical Basis of Subjective Teaching Method

Subjective teaching theory thought, education should always be borne in mind that it is "people" in learning, learning is the progress of the learner to acquire knowledge, skills, and develop intelligence, form their own emotions and learn to contact with teachers and classes group members, clarify their own values and attitude, and realize their potential, achieve the best state.

The subjective teaching has the following five main characteristics:

2.1 Problem-Centered

The subjective teaching is not presented the learning contents directly to students, but resides in some of questions and let the students to discover and construct knowledge. The questions can be completely raised in a certain background or context by students, also can be raised under the guidance of teachers.

2.2 Student-Centered

Subjective teaching is the process of students' self-construction of knowledge, requires students to initiatively and actively take the participation, student-centered is the core theory. Embodied in two aspects: (1) the choice of the teaching content and activities designed should be closely related to students' interests and abilities; (2) In the inquiry process, students should be encouraged to give a forms expression for their own idea and to design their own inquiry program, to review what they are doing, using a variety of ways to verify your ideas. In other words, the form of inquiry questions, the design of inquiry program, the implementation of inquiry process, the obtains of inquiry conclusion and the reflection of the conclusions are completed by students independently. Of course, this does not deny the guidance of teachers, but in the subjective teaching, students do not have to strictly follow the teachers' pre-designed so-called "only right" line of thinking, the teacher's authority is no longer established on the basis of the passive and ignorance of students, but on the active participation of students and promoting their abilities' full development.

2.3 Open Type

The open type of the subjective teaching mainly shows in four aspects:

2.3.1 The Open Type of Teaching Goals

The subjective teaching turns the single cognitive goal of teaching to the multi-dimensional cognitive goals that contain emotional goal, capability goal, and cognitive goal.

2.3.2 Open Type of Learning Content

The contents students explored can come from textbooks, it can also be some practical problems in real life

2.3.3 Open Type of Inquiry Process

For the problem under investigation, in addition to some of the information provided in textbooks, students may need to go to the library or online to find relevant information.

2.3.4 Open Type of Inquiry Findings

Subjective education allows students according to their own understanding and ways of thinking to solve the problem, so the findings of the inquiry is not necessarily "the standard answer" required by books or teachers,

2.4 Interactivity

The model of traditional teaching is usually that teachers talk and students listen and there is a one-way transmission of information between students and teachers. The interactions in the subjective teaching include interaction between teachers and students, interaction between students, interaction between students with others, etc.

2.5 Focus on the Process of Inquiry Learning

The traditional teaching puts emphasis on whether the students master the knowledge and the requirements to all students are uniform, and the test score is basically the only reference of the evaluation. However, inquiry teaching pursuits for the harmony of learning process and results, in particular, focusing on the potential education factors and value in the learning process. Inquiry teaching is the process that students to discover knowledge and apply knowledge.

3 The Implementation of Subjective Education in Computer Programming Courses

Teaching objective is the expected result of students' behavior changes occurring in teaching activities. You can use the "What learned" to describe. This paper takes C language programming as studying example. The teaching objective discussed in this article refers to the curriculum objective of C language programming to be achieved in the use of inquiry teaching.

In program design inquiry teaching environment, teachers and environment are only to promote students' learning, only for the external roles and the students are the learning subject. Only when students are willing to learn and actively

participate in inquiry teaching activities with earnest hypothesis, validation and reflection, the inquiry teaching can be carried out. In contrast, in inquiry teaching, if students lack the enthusiasm and initiative, it will be a passive response, even they complete the learning task, but with no interest at all, let alone ability.

As for the choice to the program design inquiry teaching content, on the one hand, the difficulty should be appropriate. It should be within the zone of proximal development. If it is too easy, students will lose interest in the content; if too hard, they will lose confidence because of frustration; On the other hand, it should be operable, that is, the causal relationship between the conclusions and certain variables can be verified by the students' deductive reasoning under the existing conditions.

The organizational forms of subjective education in program design curriculum are generally four kinds: classroom teaching supplemented by individual teaching, cooperative learning groups, individual independent inquiry, combination of individual inquiry and collective discussion.

3.1 Classroom Teaching Supplemented by Individual Teaching

Classroom teaching, also known as collective teaching, is the most common form in the traditional teaching. The learning progress and content of all students are the same. The teaching behavior of teachers to all students is also the same. Inquiry teaching is one teaching method promoted by the new curriculum reform, but this is not a total negation of the traditional teaching, because that not all of the teaching content is suitable for exploring, and not all issues can be explored by students. And at this time teachers will need to explain in the collective. For example, at the beginning of program design study, it is difficult for the students to understand the allocation of memory space, and this part is invisible and intangible, students simply can not fully explore independently. For this more abstract knowledge that most students do not quite understand, the teacher's explanation is very important. It can be explained first by teachers. After having a rough idea about this part of contents, the discussion and exploration can be proceed by students. If there are individual students still do not understand, individual counseling needs.

3.2 Group Cooperative Learning

Group cooperative learning refers to an organization form which dividing the students in the program design inquiry teaching, mainly on account of differences between the students. The number of group members is determined by the inquiry need, usually with four to six members. When grouped, it can be according to the characteristics of the students, enabling making the complementary of learning ability of the team members; it can also be grouped on a voluntary basis, to ensure that the sincere attitude of cooperation among the members. Of course, teachers may need to fine-tune the grouping, so team members can learn from each other, encourage each other achieving the successful completion of learning tasks. The task of cooperative inquiry is distributed according to the teaching goals and the specific circumstances of groups.

3.3 Personal Independent Inquiry

Personal independent inquiry is usually longer or shorter time to the inquiry learning. For the open-type long operation, it usually takes a long time to explore and the content can be provided by teachers or students can find by their own; it can be that all the students have the same task or assigned separately varied with each one. The solving of such problems usually require to write a long program and students cannot complete the task in one classes or several. They can carry out the inquiry independently after school, with a month or even half of the semester to complete. As for some knowledge points in class that are not too difficult, most of the students can find the rules by exploring the law or take the form of personal independent inquiry. For example, in speaking of the invocation of printf function, the students already know the format specification "% d" is output in the form of a decimal integer, then what does the "3" in front of the format specification"% 3d"? What is the impact on the output result? The time required for the inquiry of the content is relatively short, and the students can basically independently find the effects of the number between "%" and "d" to results.

3.4 The Combination of Individual Inquiry and Collective Discussion

The combination of individual inquiry and collective discussion means that a number of students are around the same theme independently to search for information, to carry out exploration activities and to draw conclusions, and then through collective communication share their exploration results. and discuss the difficult problems in inquiry process and their solving methods making the cognition of the problem become more deeply in the process of thinking collision, and on this basis to supplement or complete their own conclusions.

4 Conclusion

Subjective education takes training students' innovation spirit and practical ability as target reflecting and responding to the needs of the times in education. It is an effective way to implement the new curriculum, so it has been the general concern of educators, and becomes the focus of curriculum reform.

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Analysis and Study on Teaching Methods about Steel Structure

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Abstract. With Chinese economics strengthened in recent years and the scale of civil engineering projects developed rapidly, steel structure has been an important structure which is widely used in civil engineering. In such historical conditions, the steel structure engineering courses which are related with steel structure projects have gradually become a civil engineering curriculum of main courses more closely linked with the practical engineering. It is very important for the steel industry to improve the quality of steel structural engineering courses. Steel course is a main course of civil engineering courses in college courses. Based on years of teaching experience of the steel course, this paper shows the analysis of the condition of steel course and teaching methods of the steel course to achieve training goals.

Keywords: Steel structure engineering courses, Condition of Steel Course, Methods.

1 Introduction

Steel structural system has light weight, high strength, ease of industrial production, sleek, good seismic performance characteristics. Compared with the reinforced concrete structure, steel structures have the development of three unique advantages such as high, large, light. The steel structure with a very good environmental performance, is an environmentally friendly energy building material, to recycle the building structure, to ensure sustained and healthy economic development. With the advantages, the steel structure has been widely used, such as in energy, transportation, metallurgy, machinery, petrochemical, and other important sectors of the construction. Require a lot more urban construction steel, such as high-rise buildings, stadiums, exhibition halls, theaters, convention centers, subway, urban light rail, flyovers, green buildings, public facilities and temporary construction. In recent years, China's steel industry has a huge building development. There is the emergence of a group of outstanding steel structure buildings, such as Olympic Bird's Nest, the Capital Airport. Construction steel industry, as part of a modern city has made an important contribution to the city[1-3].

Currently, the skills of the steel industry of China in the research, design, manufacture, maintenance and related fields have still far behind with the international advanced level of steel industries. To enhance the overall the strength of the steel

L. Zhang and C. Zhang (Eds.): Engineering Education and Management, LNEE 112, pp. 671–674.
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industry, there are not only the formation to meet the needs of national economic construction and development, but also a new internationally competitive steel industry, but also in steel structural design, calculation, analytical software and automated manufacturing, lifting technology equipment, etc. to accelerate the pace of development. With the rapid development of the steel industry, lots of steel structure companies have emerged and colleges and universities need to cultivate a large number of good steel professional quality talent. Colleges and universities should seize this opportunity of the steel industry booming to reform the teaching of steel to meet the market demand[4].

2 Analysis of Condition of Steel Course

2.1 Strength of Theory and Practice

As the special steel material, the formula derivation of steel structure analysis occupy a larger space in textbooks, especially for the stability of a steel structure. For example, steel structural stability to occupy much space in the textbooks. The stability theory is very systematic, very difficult and there are a lot of the derivation. There are hundreds of the formula of this chapter only. Theory derivation is based on resources such as materials mechanics and elastic-plastic mechanics. There are a lot of derivation characters, letters and more related meanings with a strong theory.

Steel structural engineering course is a very practical course. Usually after the end of the teaching classroom, there is one-week course called steel structures designed as a practical teaching. Any structural design-related contents belong to the parts of the steel structures designer, from the load type, load value, selection of structural system type, architecture models to simplify the calculation, the calculations of inner forces of the steel structure under wind or seismic load, the stability of structural components calculation, material strength and deformation and structural construction measures. It is not only related to the knowledge of the mechanics of materials, structural mechanics, elasticity mechanics, plasticity mechanics and other basic mechanical knowledge, but also related to the knowledge of the structural system, and the knowledge of the reinforced concrete structure. For undergraduates, the course is not easy to learn, steel course is a difficult course to be taught.

2.2 Close Ties with Design Documents

As a design professional course, it must be associated with the design and construction specifications, closely. Steel structure design specification, seismic design of buildings, structural load specification, steel portal frame light-house technical specifications, high-level steel structure design specification, steel concrete structure design and construction procedures, technical regulations rectangular steel concrete structures, steel-reinforced concrete structural design procedures, steel concrete

composite structure technology, procedures and other related provisions are closely related to the teaching content of the steel structure design. Through the teaching of professional courses, students can master a lot of contents about design documents. There are lots of calculations during the steel structure design. Some formula can be derived by the theory, and others are summarized by a large number of experiments. Therefore, a series of charts for flexible use of data calculation is also very important for the steel structure design. In addition, there are specific rules and regulations described in the steel structure design specification.

2.3 Contradiction between Class and Content

The steel structure course includes steel material properties, various types of building components, such as axial tension components, axial compression components, bending components, shear components, torsion components, of the force characteristics and design calculations, the design of connection and architectural steel design calculation. Due to historical reasons, there were steel shortage in the past in our country. There was rarely encountered in engineering to design and construction of steel structure. According to the principle - thick foundation, wide caliber, heavy quality, the teaching of university education is mainly steel structure design principles after curriculum reform. The degree is also limited to the steel structure component design level. Currently there are the contradiction between the course content of much and difficult to teach and teaching time and less contradictory, leading to some schools teachers to select the parts to teach , which will affect the student's learning.

3 Teaching Methods of Steel Course

3.1 Blackboard Combined with Multimedia Technology

Traditional teaching methods that teachers use blackboard teaching, has the advantages that teaching of teachers and learning of students are simultaneously, and the analysis of problem is detailed. Years of teaching experience show that the traditional teaching method is suitable for the vast majority of the content of teaching, and can achieve better teaching. The steel structure course can not be rejected this obvious advantages for the traditional teaching methods. Combination of characteristics of the course content for teaching the important and difficult issues, such as steel force analysis, steel and concrete composite structural strength and stiffness, etc., traditional teaching methods are used to guide students to think, involved in specific derivation to deepen understanding. With the rapid development of computer technology, there are more and more multimedia courseware in the classroom teaching. Multimedia courseware is intuitive, informative and the use of multimedia courseware presentation of the steel from the program to develop practical engineering, technical design, construction design to construction completion of the whole process of the content of the explanations, and some of

the complex plane and three-dimensional graphics simulation, guide students to thinking in images, to enhance the whole process of the steel structure design awareness and understanding.

3.2 Improving Teaching Methods

The use of comparative law teaching enhance students' understanding. In teaching, greater use of comparative law teaching, enable students to understand the ability and to analyze problems. For example, in explaining the basic components of steel calculation method, the relationship with other structural elements to compare and contrast, explain the prominent characteristics of steel components, and it get a better teaching results. The use of images and graphic teaching is easy to accept. As the steel structure of the node structure is more complex, made of a variety of view the use of multimedia, so that students can quickly accept the complex structure. Steel structure are more complex than concrete structure, and there is no uniform pattern, while connecting the various parts of the evaluation order and the use of formula are calculated according to force transmission connection with the forces. Class discussion is the organic combination of teaching and learning.

4 Conclusions

University courses must adapt with the development of society, not lagging behind in the development of society. There must be some new ideas, new concepts in university courses. The training goal should aim to meet the needs of the community, to develop the abilities that the students should focus on practice, and emphasize the application, and attach importance to ideas, and be good to look for information and solve problem. The development of steel from the current perspective, steel courses should be strengthened in civil engineering.

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University Open Teaching Platform Construction Exploration

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Abstract. Nowadays, China's graduates are situated in a competitive environment of great changes taking place in social and economic development, the traditional universities are commonly facing the issues of construction and improvement in practice teaching system, it has been the key link in university teaching. Most of practice links in China's university teaching belong to the open teaching scope, how to construct a good open teaching platform among students, teachers and social needs has become an urgent issue for universities. The article on this issue launches a systematic exploration from the perspectives of the construction of innovative cooperative education operation model, the introduction of external experts' lectures, the establishment of international education communication channels and the providing of open space for learning and communication. We hope it can make university graduates meet the needs of current society better.

Keywords: Colleges and universities, Open teaching platform, Cooperative education, International communications.

1 Introduction

In recent years, with the rapid development of higher education and the increasing trend of internationalization of higher education, the competition between the different universities and graduates has been growing in intensity, which requires that our universities have to face the current competitive situation and take various reform measures to achieve the school's development. In China, higher education in the development of more than a century has gone through four status—"Copy Japan Model", "Copy USSR Model", "Copy USA Model" and "Current Times Model", its characteristics of dependent development is very obvious. China's current higher education system can be consider as a copied and mixed complex of different foreign higher education systems, as some scholars have pointed out, "Compared with 'Continental Model', 'American Model' and 'Japanese Model', China's current higher education still can not form a complete higher education system with Chinese characteristics model "[1]. How does the university develop in the 21st century, how to grasp the way forward, the key solution is to fix the target market of school education, according to the school's status and the market

L. Zhang and C. Zhang (Eds.): Engineering Education and Management, LNEE 112, pp. 675–680.
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needs to fix a clear school development position. In highly developed in human society today, with the increasingly close relationship between university and society, our country and society raise more demands for university education, higher education practice should more and more directly service at different levels of society and meet the needs of people at different levels. These social demands offer a wide range of development space for higher education in universities, each of them can find its own school development area and target market in this demand. In order to survive and develop in the competition, we must use the limited resources to form the subjects of comparative advantage, educational concepts and characteristics in running schools, so the full range of open education system reform has been the key focus, the research on the open teaching concepts, models and principles are also positively occurring. University open teaching platform construction exploration will be the major choice of China's universities in future development.

Practice links in China's universities all belong to the open teaching scope, so build the open teaching platform to introduce the high-quality social teaching resources, expand students' horizons, enhance the student's main body sense, expand exchange spaces between students and teachers, improve the teaching content and the overall quality of students has an important significance. How to build a platform for open teaching in university? This article focuses on the issues to launch a systematic exploration.

2 Innovative Cooperative Education Operation Model

Cooperative Education (Produce, Education and Research) is important model to train men for engineering profession, the difference of this model compared with the traditional education mode is that it has a close link to the market, economy and society, is major innovative measures to accelerate the socio-economic and technological development, enhance the competitiveness of co-operation. Since the 1960s, this model has developed rapidly in North America, Europe, Australia and Japan, four universities in the USA — California University in Berkeley, Harvard University, MIT and Stanford University, are examples of successful research cooperation. For example, Germany Applied Sciences University has a "dual system" training model, teaching activities in the enterprises and universities are alternate, that is, enterprises undertake the task of practice training, universities organization students' job training courses in accordance with the requirements of enterprise, the enterprise is the practice site for students learning in school, student's graduation thesis is commonly aim at solving the actual project problems which we call it "real topic, really do" mode, the teacher requires a certain amount of corporate work experience, and also have a higher research ability to excavate issues from the enterprise, so that launches the deep production and research cooperation with the enterprise. Graduates not only have a solid theoretical knowledge, but also have practical application abilities, so graduates will be able to adapt to work quickly, with widely welcomed by enterprises. In recent years, a number of universities, enterprises, research institutions dedicated to cooperative education, "Joint education, prospering the enterprise with science and education "

has made some achievements. With the development of modern manufacturing, the society demands of applied undergraduates are increasing. Under the pressure of competition and efficiency, more and more enterprises need graduates to be the status of potential workers to jobs. The model of independent education and training for creative application talents in traditional universities shows the defect that there are gaps in the demands between university and enterprise. People gradually realize the subject integration and cross — a cooperative “3 in 1” training manner of university, industry and research institutions would be the inevitable trend of engineering talents training to meet the needs of today's job market for universities. Promote and deepen the cooperation education between enterprises and universities, must be thinking first, fully understand the high importance of establishment of "open and cooperative thinking system" [2]. Cooperative education in higher education turns the single school subjects into the several school subjects, all of the school objects join up the complete training process. Colleges and universities should initiatively transfer educational services, technology and information to enterprises, according to the enterprise needs to enhance human resources development structure, create the multi-level, multi-type, various continuing education activities; actively participate in the technological transformation, new product development, and consider gains and losses of enterprises in order to ensure sustainable development of "co-education" in "win-win" manners, and emphasis the dominant body of enterprise in corporate training of application talents.

3 Introduction of External Experts' Lectures

From the view of China's current higher education, it always pays much more attention and emphasis on book knowledge learning. Most of Students rely on gain information access to book knowledge, however, with the advent of information age for students to get a lot of information from both books and networks, it enables students to only pay attention to the knowledge representation study, neglect investigation, lack of the awareness of depth, detail on the importance of fieldwork links, make the book knowledge separated from practical links. The key aim to building university in social needs is high-quality talent, whether in training professional talent or professional subject construction, the relevant professional experts play an important role, the introduction of external experts' lectures to students can avoid the theoretical knowledge separated from the practical links, they are the valuable asset to maintain the advantages of subjects and profession characteristics in many universities. But the concept of open education gives us an inspiration: playing the role of experts does not necessarily require schools to own an expert, the key is to build an easy platform or way for experts to give full scope.

In China, many of current university teachers are taking on heavy teaching or research tasks, causing them to reduce the chance to contact with enterprises, their engineering practice is relatively weak, so the ability to solve practical problems in the production is also weak, and the limited ability to transfer technology into actual product and so on. Teachers lack of capacity in this regard directly impact on students' combination of theory and practice. Therefore the introduction of

external experts' lectures and relevant professional experts to participate in classroom teaching can remedy this defect partly. Classroom teaching is based on school teachers, external experts without affecting the main premise of the work may take a more flexible form part of the participation in classroom activities. For example, School of Architecture and Planning of Beijing Industry University hold "Architectural Culture Week" every year, their first "Architectural Culture Week" was co-sponsored with China Institute of Architecture Design and Research, during the week, it included a series of expert lectures, architectural design exhibition, the discussion seminar among school teachers, students and the experts of China Institute of Architecture Design and Research. "Architectural Culture Week" makes the design masters come to campus, it creates more contacts opportunities to masters for teachers and students, the master's speech, the master's style and charisma and professionalism has caused a strong response in campus. It also greatly enriches the connotation of campus culture and has a profound impact on students' learning experience.

Therefore, the introduction of external experts' lectures does not only ease the heavy teaching pressure of university teachers, but more importantly to make students and teachers understand and grasp the development and application of high technology timely, keep abreast of today's society human resources requirement, and combine the theoretical knowledge and practice together better.

4 Establishment of International Communication Channels

Our universities locate in the social center, the requirements of different social stakeholders on universities range more and more widely. Especially after joining WTO, universities can not only look to stay in the country, but also to invest in international, and more to create the international exchange platform for higher education in China; only integrate resources of wide range better, universities can win in the enrollment competition, win the better policy, win the widespread support and required resources for development, and then form a comprehensive competitiveness. The establishment of international cooperation and communication channels is also is an important aspect of open teaching platform. In order to broaden students' horizons and learn from foreign university teaching strong points and experiences, our universities should strive to establish exchange programs and encourage overseas visiting scholars.

On one hand, the communication between China and foreign universities can create an operational school-enterprise training model for international competitive talents. The case of Shanghai, China, it is an international metropolis with a center of economy, finance and trade, which attracts all national brands station and development. According to the information provided, the current majority of the world's top 500 enterprises have settled in Shanghai. These international enterprises need multi-level, strong adaptability, settlement international competitive talents, which would be attracted by the international application talents from the university combined by Chinese and foreign enterprises. Shanghai Institute of Technology has implemented some of students international practice for many years, it is exploring the new model with the French Enterprise Training Center

and French University of Application Science and Technology recently, that means the personnel training programs is developed jointly by three parties, the three parties jointly provide the training environment, teachers resources, the aim is to supply suitable type of talents to France enterprises in Shanghai. In this model, students can get Chinese diploma, foreign programs certificate and enterprise job qualification certificates, it has prominent features in application talents training, deeply welcomed by foreign companies. Tsinghua University promotes an internationalization of undergraduate education to meet the increasing internationalization of the professional requirements for students in recent years, it make more efforts to expand international business practice base than before. School of Architecture of Tsinghua University has sent a total of 27 students to abroad from 2008 to 2010, respectively to Singapore, the United States, Spain, France, they practice in these design institutions. The establishment of this platform not only has an important significance to improve the professional competence of students, but also leads their employment ways facing the world directly.

On the other hand, we can carry academic communication activities with foreign higher education institutions as many as possible. Academic communication activity is an important links to enliven exchanges of academic ideas, is an effective way for cultivate innovative talents education. Because most of the current university students in our country have no conditions to go abroad to practice and learn, then the communication with foreign universities and other research institutions and academic as an important means for students to broaden their horizons. For example, the academic communication activities of the Transformation Design of St. Zhong in Shenyang between Institute of Architecture of Shenyang Architecture University and University of Chiba University in Japan[3]. School of Architecture and Planning of Nanjing Industry University has launched a joint teaching with Germany architecture faculties. The establishment of these academic exchange platforms is helpful for college students to broaden their horizons, improve interest in learning and stimulate the creative potential. In the joint process of teaching, students can also understand the different cultural backgrounds, different ideas and methods of teaching, teamwork and collaboration capabilities. While our college and university teaching team has also been trained. In addition, it can also promotes the teaching reforms, make the teaching method more colorful and characteristics. In the communication between us, the higher education will develop broadly in the future in this way.

5 Providing of Open Space for Learning and Communication

Open teaching respects and reflects the dominant position of students. First, it changes the one-way transfer of knowledge to the students' in closed teaching and learning before, which adapts heuristic and discussion teaching modes, and more to mobilize student participation. For example, the implementation of an open operation commenting, it can lead students to argue different points of view, more conducive to inspire students to think, we can fully mobilize the enthusiasm of students and develop their initiative and creativity, and also improve their comprehensive abilities to comment, analysis and find problems.

On one hand, Universities should also encourage the communications and exchanges between students from different departments, different grades, such as high school students in school for several years, have ready a certain amount of professional knowledge, and have some of their views, these can have a good guide role in the lower grades students professional learning. To create opportunities for communication and exchange them, college should support to students be established academic journals and website, where the students are free to express their views and discuss, debate academic issues, exchange ideas and experience. On the other hand, universities should encourage students to organize "Academic Salon" activities, which provide a good communication platform for the dialogues on academic issues and learning from each other. At the same time, holding interschool, school work and award-winning works exhibition regularly is conducive to exchange student's learning experience and summary. These activities not only enliven the learning atmosphere, but also are beneficial to complement with each other and increase the interest of students in active learning.

In teaching organization, firstly, we arrange team work links consciously to develop students ability to teamwork, the team is an organic whole, team members should not only have a independently work ability, but also have a suitable team work ability. This changes alone, focusing instead on the past, student who completes a job with a lack of communication habits. We in the teaching process should be arranged group research, group presentation, individual reporting, centralized respondent and other classroom teaching links. Based on teamwork, each student has his own personal work, the two factors are complementary and inseparable. This model is helpful to improve the efficiency of classroom teaching, to stimulate the student's initiative, it will enable students to adapt to the social division of labor, improve their research ability in practice.

6 Conclusions

All above is the construction exploration on university open teaching platform, it is not only an abandon of traditional teaching and an exploration of new teaching methods, but also a pursuit of higher education characteristics and a perfection of modern application talents. Only when universities create a variety of ways to build practice teaching environment and make full use of internal and external campus resources can truly achieve the training aim of application talents education.

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The Application of "Visualization Teaching" and "Network-Based Teaching" in Engineering Graphics

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Abstract. In order to adapt modern education development and cultivate more application talents for society, many actual problems existing in engineer graphics has been analyzed and new teaching model has been proposed. "Visualization Teaching" has been put out by merging teaching cases and practice teaching into the classroom. "plastic injection molding machine" was used as the teaching case for professional of material forming, and "CNC lathe" was used as the teaching cases for mechanical design and automation."Network-based Teaching" was carried out by accumulating teaching gallery, establishing the mapping virtual model bank and establishing the intelligent exercise system. Basing on the traditional teaching mode and combing with the advanced teaching equipment under new situation, classroom learning result can be improved efficiency and effectiveness, and student's graphic skills and spatial imagination can be improved.

Keywords: Visualization teaching, Network-based Teaching, Engineering Graphics, Spatial imagination.

1 Introduction

In order to adapt the development of modern period, we make a comprehensive planning for the "Eleventh Five-Year Plan" to build an innovative country and human capital power. National economic development and international exchanges are reflecting the strong demand for high level, innovative talents more and more. As the training base for talents, higher education must walk in front of the times and assume the historical responsibility to cultivate new talent[1]. Engineering graphics is an important special basic course of professional engineer. It is based on graphics and expresses the thinking subject by graphic designing. By engineering graphics studying, not only the engineering expression skills can be improved, but also some other aspects such as the development of spatial thinking, design innovation, engineering practice, improving the comprehensive engineering quality and so on. Thus, in the process of teaching engineering graphics, we want to sum up experience in teaching methods, and should develop students who are good at drawing to adapt the development and demand of social and economic.

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2 Many Actual Problems Existing in Engineer Graphics

As an important professional basic course, the teaching method of current engineering graphics is still using traditional teaching method. Although multimedia instruction can increase the graphics into the image, but the overall form of teaching is still relatively rigid, single. So it is difficult to mobilize students' enthusiasm and initiative, and not conducive to creative thinking ability of students. Thus it is difficult to improve the integrated use of knowledge and problem-solving ability. Students trained under this teaching mode should improve their reading capabilities of graphics. As students have less capable of independent learning and creativity by this single teaching mode and the cultivation for creativity is far from teaching target, the students will have more difficulty in future study. Therefore, it is necessary to reform teaching methods and to make some adjustments for engineering graphics. So "visualization teaching" and "network-based teaching" can be merged into classroom education to enhance students' classroom learning efficiency and effectiveness.

3 Specific Measures for Implementation

"Visualization teaching" and "network-based teaching" is the teaching methods to adapt to new situation. The "visualization teaching" includes the case and practice merging into the classroom, Specific implementation is as the following.

3.1 Teaching Cases into the Classroom

Two typical cases will be introduced throughout the "engineering graphics" in the teaching process. Where, the professional of material forming brings "plastic injection molding machine" as the teaching case, and mechanical design and automation brings "CNC lathe" as the teaching cases.

Both devices are two major equipments in future study for the students. Introducing the two devices for freshman just before they contacting the professional study can make them go into the professional role as soon as possible. Then the students can form an initial outline of their own future direction. The introduction of two teaching cases of specific process can be started as the following.

Firstly, the most standard equipment graphics (including parts and assembly drawings) should be demonstrated to the students. Then they can understand their own tasks, objects and course requirements by learning this course. This is benefit for some abilities cultivation, such as basic mechanical design and drawing ability, graphic reading ability, spatial imagination ability, responsible work attitude and rigorous and meticulous work style training.

Secondly, use an easy way to explain the case of equipment, composition and working principle, etc. As freshmen just entering college, the expertise knowledge is relative lack. So in the early stages, teachers should explain the teaching case in

simple language, then the working principle of the device structure can be understood preliminarily. In future study, the professional learning vocabulary introduction and explanation can be gradually increased.

Thirdly, before each chapter study, the teacher should explain the significance and importance of the curriculum to guide the students by using the teaching case. Then in the following study, students can combine textbook knowledge with actual knowledge. In the course of study, they can realized the importance and significance of their learning, which not only help students to enhance their imagine space ability but also improve their learning initiation. And by using the teaching case, students can think positive during the learning process and their ability for knowledge application can be increased greatly.

Fourthly, combing with the case in the teaching process, and citing other teaching equipment and other typical cases, we raise new questions constantly and consciously. The teacher should try to cultivate the self-learning ability of students, and try to avoid following blindly with the progress. Therefore, the students' ability to analyze and solve problems can be improved and further more their creativity and aesthetic can be improved accordingly.

3.2 Practice Teaching Merging into the Classroom

As a technology-based course, "Engineering graphics" is for professional services ultimately. Therefore, it is necessary to strengthen the interface between applications and professional. Most of the current teaching and research departments of graphics are running independently, and are lack the necessary communication with other disciplines, such as mechanical design. As a single subject, the teaching objectives may be better implemented, but in the professional courses, its graphics program can not satisfied with the professional teachers in course design period. The above result comes not only from lack of practice courses but also from lack of professional practice communication. And this cannot be ignored. So in the practice teaching period, the teacher should combine these two aspects simultaneously.

Firstly, the practice course in the teaching curriculum. As the saying goes that seeing is believing, when the teacher describes the machining method, such as the formation of internal and external thread processing, students always in a state of half-comprehension for lack of personal experience. But after processing or viewing themselves in the workshop, this problem is easy to explain clearly. Therefore, the practice of the curriculum should throughout the teaching process and enable students to master the theoretical basis while obtaining validation and support from the practice. And in the contacting process and practice, students' imagination of thinking has been strengthened.

Secondly, the practice of interdisciplinary teaching is necessary. Considering for the student, professional courses are interrelated. But teachers always tend to focus on their own courses, while neglecting the communication-relationship with other courses. Which is harmful for students to grasp knowledge overall, and the related courses should be established close and independent contact relationship.

Many teaching methods are carried out by certain means. Going with the times, to maintain the diversity of teaching methods and advanced teaching methods, new techniques of Internet-based teaching should be pulled in. We plan to introduce some of the hardware and software development platform, and then combine with the specific teaching content, to develop the corresponding applications. Then by advanced network technologies, our advanced educational philosophy, thinking method and new teaching methods can be combined together to form a more advanced teaching platform. Therefore, better teaching results can be achieved.

Our school focuses on application-oriented training of technical personnel, and the character is special. As current engineering graphics is still using traditional teaching method. So it is difficult to mobilize students' enthusiasm and initiative, and not conducive to creative thinking ability of students. Students trained under this teaching mode have less capable of independent learning and creativity by this single teaching mode, and the cultivation for creativity is far from teaching target. Therefore, it is necessary to reform teaching methods and to make some adjustments for engineering graphics. So "network-based teaching" should be merged into classroom education to enhance students' classroom learning efficiency and effectiveness[2].

Poor capacity of application means acknowledges from courses cannot be used freely in practice. The reason is complex, but we can emphasize using in the courses, and combine engineering in the course of teaching. And the course design should be integrated design. Then the theory is related to practice, the knowledge and skill can be improved at the same time.

Course teaching should be integrated with courser design for each period. By course design, we lead the students to apply their acknowledge synthetically. Whether they can get high scores is according to their application level of the knowledge points. In course design, most students' design ability can be improved. The course design of "Mechanical design" merged the knowledge of "Mechanical design", "Basis of Mechanical Manufacturing", "Interchangeability and technical measurement". In course design of "Mechanical design", the students should not only learn how to design the structure of a part, but also learn to choose the material, to manufacture or choose the blanks, and to mark the roughness of the parts' surface. Course design of "Machinery manufacturing technology" and "Machine Tool" not only merges related contents, but also notices the relationship among course designs. In two course designs, each student should select a process to design special fixture and machine proper tool according to the process planning requirements. In this kind of course, the students engineering ability can be improved efficiently.

The period course design enhanced the combination of teaching and practice. By using this method, students' design ability and quality has been improved and meanwhile, the students learn more about their courses, which help them study actively and becomes more and more interest in the professional courses.

3.3 Teaching Reform to Achieve the Overall Network Design

3.3.1 Teach the Accumulation of Examination Bank

Teacher should make preparation of topics selection and establishment combining with existing materials. Then engineering graphics can be put into computers by AutoCAD and the data can be managed. According to the knowledge master situation, the heavy work of teachers can be reduced by taking advantage of online teaching means, and then the rationality and scientific of teaching and examination can be improved[3].

3.3.2 The Accumulation of Teaching Gallery

According to knowledge characteristics of the students, appropriate materials should be selected at first, then a typical example of two-dimensional graphics should be set up. All this graphics are used for "network-based teaching", and the number of them is not less than 200. The teacher should put the images data into computers by scanners. After preliminary processing, the information of pictures can be managed by computers. In practical teaching, these resources can be used as material and may also be transferred out for teaching.

3.3.3 The Establishment of Mapping Virtual Model Bank

As the course of Mechanical graphic has its own specificity, students should develop spatial thinking skills in the learning process to by physical models. But the traditional teaching models used in classes are always made in wood, which are easily to be damaged and are difficult to be carried and storaged. As the network used in mechanical graphics brings virtual reality to classes, this advance technology can be used to establish virtual reality model bank, so the shortcomings of traditional teaching models can be avoided.

3.3.4 The Establishment of Intelligent Exercise System

With the development of engineering graphics, number of teaching hours have been reduced in colleges and universities. As the course hour is reducing, students lack proper training and the process of digestion. Exercises practice is a very important part in the teaching process[4]. The teaching practice is arranged by teachers, and students always exercise according to projection rules in the mind, and then draw engineering graphics with a pencil. By this exercise mode, the teachers should mark the assignment only on the paper. This traditional mode of teaching cannot mobilize students' spatial thinking skills and self-learning ability effectively, and teacher's workload is very heavy accordingly. With the development of computer technology and the popularity of applications, especially with the network technology and the rapid development of online education, more independent learning is required.

3.3.5 The Drawbacks of Network-Based Teaching

Firstly, reducing the emotional communication between teachers and students

Secondly, network of teaching can divert the attention of teaching. Although network-based teaching depends advanced technology, but technology is means and not the aim. The use of advanced technology, making teachers tend to focus on the use of tools and techniques and always neglect the organization with the content, so that the quality of teaching will be affected[5,6].

Thirdly, as the network information is so rich, observation of student information and awareness requirements is high. All teaching and teaching content information can be obtained from the network, which the students independent thinking and ability to identify the information is a challenge. In addition, the lack of effective supervision of teaching effectiveness is largely dependent on the consciousness of students.

Fourthly, network-based teaching can not replace traditional teaching method. Although network technology can be used animation, pictures, sounds and other media, a variety of test simulation, and the scene of some real or virtual, it often can not accurately convey some knowledge, but for students to create cognitive errors, and the abilities of students are not given good training.

And finally, multimedia network teaching effectiveness depends on the application level. Not every media has a general applicability, multimedia technology and teaching content, teaching process, teaching activities, student characteristics, and course characteristics, etc. The network-based teaching should be coordinated together, only by adopting appropriate teaching methods and means to effectively achieve the purpose of improving teaching effectiveness.

Computer network technology for teaching has brought new development, but should be noted that the traditional teaching methods and modern teaching methods have their own strengths, teachers used to organically combine the two to complement each other and, ultimately, the best teaching results.

4 Conclusions

"Engineering graphics" is a professional compulsory technology-based course for mechanical engineers. Basing on the traditional teaching mode, and combing with the advanced teaching equipment under new situation, the teacher should improve their teaching methods continually. As the "visualization teaching" and "network-based teaching" merging into the classroom education, classroom learning result can be improved efficiency and effectiveness, and then the student's graphic skills and spatial imagination can be improved.

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Teaching Methods about Civil Engineering Professional English Courses

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Abstract. With Chinese rapid economic development and the rapid development of civil engineering technology in recent years, international civil engineering project have been an important part of civil engineering projects. So the importance of civil engineering professional English demonstrated gradually which is used to exchange the information in the work. It is very important for the construction companies to improve the quality of civil engineering professional English courses. Civil engineering professional English course is a civil engineering undergraduate education in a civil engineering industry. It is of importance for civil engineering graduates with international exchanges and cooperation enhanced. Based on years of teaching experience of the steel course, the author of civil engineering research analyzed the current status and problems of civil engineering professional English teaching and put forward the basic teaching methods of civil engineering professional English.

Keywords: Civil engineering professional English courses, Teaching reform, Methods.

1 Introduction

With the accelerating process of global economic integration and increasing international exchanges, a high-quality civil engineering professional with professional quality of English, is indispensable. Especially as China's rapid economic development, there are a large number of major civil engineering projects in the international public tender, the output of China's civil service to expand and the increase in international aid projects held from time to time, etc. With international engineering increasingly frequent exchanging and cooperating, civil engineering economic globalization is being accelerated. English of civil engineering as a medium of communication and information to transfer has become a useful tool for employees. It is very important to train a number of people with good foreign language skills to meet the fundamental goals of social development reality. In practice, more and more people realize that lack of English proficiency will be a block made a huge obstacle to career development. We believe that more and more people are joining the professional learning of English.

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As we all know, the most fundamental purpose of learning a language is to exchange information. The basic English learning is to train students to master this tool, and students can skillfully use it for everyday life, while the professional foreign language learning allows students to master a foreign language which can rely on learning their professional knowledge, reading and translating the information, the professional scientific literature and abstract in order to better future absorption and exchange of expertise and advanced technology. English for specific purposes in civil engineering is generally put in the third year in college on the semester. In this phase, students have completed the two-year college English courses, the basic course is nearing completion, and the professional courses are starting to be learned. In the process of learning civil engineering English there are still some problems, I made a deep analysis of teaching practices in civil engineering English and a number of characteristics of English teaching reform measures.

2 Analysis of Condition of Civil Engineering Professional English Courses

Civil engineering professional English courses are put in the last century. Its main purpose is to enable students to read a simple literature reading, write an essay and translate work of the professional literature based on professional knowledge. According to the survey, this course shows relatively high rates of absenteeism, and classroom atmosphere is not active, the effect of learning knowledge is not good. English courses in Civil Engineering are obviously inadequate and specific performance is as follows:

2.1 From Students

Students' attitude is not correct and they don't know the purpose of learning a foreign language, leading to not learning enthusiasticly. Some students believe that the course is only useful to continue their studies and they could be used rarely later for use in the engineering units involve leading to lack of interest in this course. So they only hold the purpose to pass the exam. For English is not good basis, even a small part of the students simply gives up the study of civil engineering professional English.

For a different basis of English language, teaching is difficult to guarantee the results with the same professional level of English. The teachers believe that it is difficult to grasp the rhythm of teaching combined with this course scheduled school hours limited. The main teaching way is that the teacher select the material contents to translate and explain. For the mastery of professional knowledge, the translation of classroom teaching is undoubtedly the tip of the iceberg and it is difficult to achieve good teaching results.

The professional learning of English is the most important tool to use of English access to expertise, to expand their expertise in the field of vision and scope of knowledge. From another perspective, it is very necessary for students to acquire a

certain professional knowledge to better learn of civil engineering English. At this time if the students do not understand or grasp the professional knowledge, it will seriously affect the understanding to the content of the text, resulting that students in the learning process, know some of the contents of the vocabulary, sentence structure can understand, but do not understand the overall meaning or cannot be expressed in terms of a professional situation.

2.2 From Teachers

In most of the college and university, civil engineering professional English courses are held by professional teachers of civil engineering. English teachers bear the English civil engineering curriculum, since its familiar with the professional vocabulary, their expertise has a strong background and good ability to comprehend. But these teachers relatively neglect the explaining of the basic knowledge of English. The characteristics of a sentence of civil engineering professional English are complex and there are more long sentences in this paper. There are some differences between English teachers and teachers of civil engineering in the technical method of explaining and teaching English. And the ability of a teacher of civil engineering to exchange professional ideas and to teach students how to use the English expression, is weak, and so it is unattractive enough to make the curriculum for engineering teachers in the language class. Therefore, the combination teachers of professional knowledge and English are ideal for teaching civil engineering English teacher, but there is a shortage of these teachers in this category.

3 Teaching Methods of Civil Engineering Professional English Courses

3.1 Correct Attitude towards Learning English

Due to various reasons, the employment of students is now a lot of pressure. With the international economic and technological development, Chinese many large civil engineering companies go into the international market gradually and there are a large number of foreign contracts of road, rail, infrastructure projects and other large-scale projects with huge amounts of investment. And the companies need the worker that could understand technology and management and master a foreign language professional expertise. Many students lack of attention to this area lost good opportunities. Therefore, the attitude towards learning English for students should be corrected.

3.2 Reform of Classroom Teaching

Graduates pay more attention to the improvement of English proficiency. Teachers should be reflected in the teaching of humanism, not do just the inculcation of knowledge and should guide students to self rather than the students as passive recipients of knowledge of the container. However, the previous English teacher-centered teaching is the inculcation of the main and people-oriented activities are rarely the subject of teaching.

Every time before the first class teacher tells students to discuss topics, and content can be advanced construction technology, frontier dynamics, English architecture map, design plans, international bidding contracts, advertising and consulting expertise in foreign expert interviews, etc.. Students can access relevant information through a variety of ways to help understanding. Classroom discussion can be grouped. Teachers ask questions, and then answered by the group (all in English), and then refer to the answer to compare. The English summary of the literature can be arranged, or write a small essay, etc.. So that students can exercise the professional writing skills, the most direct benefits are standard in the graduate design summary writing.

4 Conclusions

Civil engineering professional English courses as a civil engineering medium for knowledge expression and information transmission, is an indispensable tool for practitioners. Particularly with Chinese reform, civil engineering graduates either working on the project design, construction, management or other professional technical work, is inevitably exposed to high levels in English as the main carrier of the professional literature.

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The Study on Supervision of PPP Project Tender with Game Analysis

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Abstract. PPP is an important financing pattern of quasi-public project. PPP project tender is of great significance to the entire project's success. This paper analyses the characteristic of PPP project tender and its supervision. Basing on above analysis, it introduces game theory to this study, analyses the relationship of various participants in the tender process, and establishes supervision compliance game model between the government and bidders and rent-seeking game model between the government and the executor, which provides a theoretical foundation for government supervision in the bidding process. Accordingly, it proposes some targeted recommendations at last.

Keywords: PPP projects, corporation tender, tripartite game, supervision.

1 Introduction

In recent years, the development of public projects in China is rapid, but the problem such as the insufficient of government funds is also increasingly and it has become a bottleneck which constraints the further development of public utilities. The PPP model is on the basis of the cooperation between the public sector and private sector, and has become a kind of positive means to break the monopoly supply of traditional "public goods", improve service efficiency of public infrastructure projects, activate private capital and reduce pressure of government finance. However, the most essential characteristic of private capital is driving profit, because of the opposition of the interests of public sectors and private companies, the game may occur in the bidding process between them, and it can bring the rent-seeking behavior of the executors. Therefore, the study on the behavior and interaction between the government and bidders and between the government and executors in the process of PPP project corporation tenders has important theoretical and practical value to perfect the methods and systems of governmentïï management and supervision to the PPP project corporation tender.

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2 The Model of Game

2.1 The Game of Violations supervision in PPP Project Corporation Tender

In PPP project corporation tenders, though governments and the bidders do not make action at the same time, they can not know the opposition sides' action content each other. Because the bid programs are private information of bidders, it can be considered as incomplete information static game between two sides. Now, this paper will establish game model of supervision between governments and the bidders.

2.1.1 Presupposition

Presupposition 1: The information is asymmetric between the participants of game.
Presupposition 2: Governments and bidders are all rational.
Presupposition 3: When governments do not constrain and bidders are compliance with rules, the utility is U_0 and the loss of governments is B ; when bidders violate rules, the cost of governments for their constraints is C_1 and when bidders are compliance with rules, the cost of governments for their constraints is C_2, and $C_1 > C_2$; if there are violation behaviors, the Positive effect of government' successful constraining the violation behaviors of bidders is A ,and the Probability of gaining success is λ, the Probability of failure is $1-\lambda$, and $0 < \lambda < 1$; the loss of bidders for being punished of their violation is M_1; and when bidders survive from punishment for their violating rules, the utility of bidders is M_3;and when bidders are compliance with rules, the utility of bidders is M_2 ,and $M_3 > M_2 > M_1$.

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2.1.2 The Model of Game

According to the assumptions above, establish the model of game matrix shown in Figure1, the game utility analysis is shown in Figure 2.

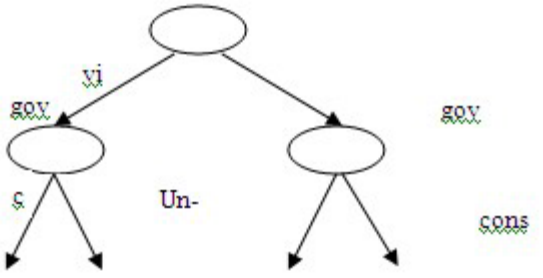

Fig. 1. The Game Model of Tender Supervision in PPP Project Corporation Tenders

		bidders Violation (P)	com-pliance(1-p)
governments	constrain(q)	U-C1+λA, -M1	U-C2, M2
	Un-constrain(1-q)	U-B, M3	U, M2

Fig. 2. The Analysis on the Utility of game between governments and bidders

2.1.3 The Analysis on Game Equilibrium of Mixed Strategy between the Government and the Bidder

Under the analysis on game equilibrium of mixed strategy, the government's expected utility is:

$$EU = p[q(U - C_1 + \lambda A)] + p(1-q)(U-B) + (1-p)q(U-C_2) + (1-p)(1-q)U$$

Make first derivative to q, $\frac{\partial EU}{\partial q} = 0$, gain: $p^* = \frac{C_2}{\lambda A + B + C_2 - C_1}$

When the bidders violate as p>p*, the best choice of governments is to constraint. Otherwise, when the bidders violate as p<p*, the best choice of governments is not to constraint.

The bidder's expected utility is:

$$EV = -pqM_1 + p(1-q)M_3 + (1-p)qM_2 + (1-p)(1-q)M_2$$

Make first derivative to p, $\frac{\partial EV}{\partial p} = 0$, gain: $q^* = \frac{M_3 - M_2}{M_3 + M_1}$.

When the probability of government's constrain to bidders is greater than q*, the bidders will not violate; When the probability of government's constrain to bidders is less than q*, the bidder will choose to violate.

2.1.4 The Conclusion of Game

From the analysis above,we can conclude that in the PPP project bidding process, whether bidders choose compliance or not depends on the intensity of government's supervision, and whether the government is bound to supervise the bidders depends on the cost and effect of constraint and the loss of un-constraint. To government, PPP projects usually need many investment funds, involve wide range of things, have long cycle, and related closely with social public interests and peoples' lives. Therefore, if the government attempts to alter and make up when it realizes that the investor is not suitable after having selected co-investors, the government will lose greatly. That is to say the loss is great when government dose not supervise. Thus, paying some costs by a certain system and measures to avoid violation behaviors of bidders in project corporation tenders can make the gain of government greater than the loss. In the other hand, coupled with the characteristics of PPP project itself, it is essential to depend on supervise to keep the illegal act of PPP project corporation away. It is the only way to find and solve the problems effectively, and prevent from them by effect of strong frightening before they occur. Therefore, in order to make PPP project corporations' behavior in tender more scientifically and reasonably, it is necessary to carry out strict supervision and management, clear responsibilities and assign obligations.

2.2 The Game of Supervision to Rent-Seeking Behaviors of Project Corporation in Tender

When there is possibility of rent-seeking of executor, the two sides of participants in game only know the choice of potential action and can not know the exact action each other. So the game between the government and the executor is still the static game of incomplete information.

2.2.1 Participants

The model assumes that there are two participants: one is the government as principal and supervisor; the other is the executor as agent of the government who has tendency of rent-seeking. Government and bidders are all rational.

2.2.2 The Program of Implementing

On the supposition that there are two programs of implementing-constraint and not constraint, the probability of constraint is q0 and the probability of unconstraint is 1- q0. There are also two kinds of executor's action, rent-seeking and not rent-seeking. The probability of rent-seeking is$\theta$and the probability of not rent-seeking is 1-θ. That the action of participants is in no particular order is the static game.

2.2.3 The Utilities of Participants

When there is no supervision of government and rent-seeking of executor, the utility is U0. If government dose not constrain the rent-seeking behaviors of executor, the loss of government is D. In the case of executor doing rent-seeking, the supervision's cost of government is C3, and the opposite case is C4, and C3>C4; to executor, the profit of not rent-seeking is 0 and the profit of rent-seeking is R; when the rent-seeking is found, the loss of executor is L, and L>R, the probability of being found is$\lambda 0$, and the opposite probability is 1-$\lambda 0$.

2.2.4 The Game Model between Government and Executor

The established analysis on the game model is shown in Figure3.

	Executor rent-seeking (probability: θ)		Executor not rent-seeking (probability: 1−θ)	
	Constraining successfully $q_0\lambda_0$	Not constraining $1-q_0$	Constraining q_0	Not constraining $1-q_0$
government	$U_0-C_3,-D_4$	U_0-D_4	U_0-C_4	U_0
executor	R-L	R	0	0

Fig. 3. The Game Model of Supervision to Rent-seeking Behaviors of Project Corporation in Tender

2.2.5 The Analysis on Game Equilibrium of Mixed Strategy between Government and Executor

Under the game equilibrium of mixed strategy, the government's expected utility is:

$$EU_0=\theta q_0(U_0-C_3-D)+\theta(1-q_0)(U_0-D)+(1-\theta)q_0(U_0-C_4)+(1-\theta)(1-q_0)U_0$$

Make first derivative to q_0, $\frac{\partial EU}{\partial q_0}=0$, gain: $\theta^*=\frac{C_4}{C_4-C_3}$.

If the executor acts to rent-seeking with θ>θ*, the best choice of government is to constrain. Otherwise, if the executor acts to rent-seeking with θ<θ*, the best choice of government is to give no constrain. When the executor acts to rent-seeking with θ=θ*, he best choice of government is to choose constraint or not at random.

The executor's expected utility is:

$$EW=\theta q_0\lambda_0(R-L)+\theta(1-q_0)R$$

Make first derivative to θ, $\frac{\partial EW}{\partial \theta}=0$, gain: $q^*_0=\frac{R}{R-\lambda_0(R-L)}$.

If the government acts to constrain with q>q*0, the best choice of executor is to play no rent-seeking. Otherwise, if the government acts to constrain with q<q*0, the best choice of executor is to act rent-seeking. When the government acts to constrain with q=q*0, the best choice of executor is to choose rent-seeking or not at random.

2.2.6 The Conclusion of Game

From the perspective of game theory, institutional arrangements are the rules of game. What kind of institutional arrangement lead to what measures Participants should take and what the corresponding equilibrium results would appear. So we consider that it should give punishment to the rent-seeking behavior. In the other hand, government must strengthen the construction of its own ability of supervision for ensuring the successful implementation of PPP project corporation tender and prosperous building of PPP project.

3 Conclusion

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Deepening the Reform of School Physical Education to Enhance Students' Quality

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Abstract. School sport is an important part of school education is to achieve "quality education" goal of the basic ways. Establish the guiding ideology of school sports, physical education settings to adjust, to carry out various forms of extra-curricular sports activities, deepening the reform of school physical education to enhance students' quality education.

Keywords: Quality education, school sports, education reform.

1 Foreword

School sports have their own uniqueness[1]. In school education, sports development bears a perfect body, enhance the physical task, with Germany, Chile, the United States is closely related to education, to develop cross-century talents together to achieve educational goals[2]. School education for the new century, should focus on a comprehensive physical education, so that it can better meet the needs of social development. Physical education to "dilute the focus on sports and physical fitness," to fully teach physical culture and sports content and training methods. Let students know but also know why, life-long exercise to improve student self-awareness, develop self-training capabilities, to develop lifelong exercise habits of self, so that will last a lifetime. To this end, emphasis on school sports discussions, sports, education reform, new initiatives to enhance the students quality education.

2 Updated Guidelines Established Ideas

School sports is a comprehensive discipline, is a development of the body as the core process of education is the student's character, morality, the will of the training is overall development of students embodies[3]. All students in school sports is sports. Enjoy physical education, every student in the school authority, cannot be denied or violated. To this end, we simply reform the long school sports to enhance the physical fitness-based guidelines, the physical fitness, education,

L. Zhang and C. Zhang (Eds.): Engineering Education and Management, LNEE 112, pp. 699–706.
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entertainment and other features integrated, require students to master certain sports knowledge, skills, technology, based on education students understand the significance of fitness, learn to use the knowledge of their physiological and psychological changes in evaluation methods to master the science of physical exercise, to develop good exercise habits, to develop students 'life-long sports' consciousness, so that more students enjoy to the fun of sports, in sports activities to be sentiments of the mold, and established school sports "health first", "for all students," the guiding ideology.

3 Adjust the Curriculum to Optimize the Teaching Process

3.1 Common Course Added to Improve the Overall Quality of Students

From 1996 onwards, we had the physical education curriculum has been restructured, breaking the old hospital into a school student for special elective courses on teaching methods, set up base in the first grade physical education.

Common Course content set in, in order to avoid teaching materials and more, fewer teaching hours, "platter-style" Common Course, the individual is easy to implement, the role of exercise are better able to lay the foundation for the student's school life sports traditional project, ""a kind of traditional Chinese shadowboxing -24" " and the development of students Endurance "Run" as the main content; to active, confrontational, group and strong basketball, volleyball, football as teaching aids; to reflect the physical condition of students' standard "project will be measured as the content.

Taught in the general assessment on the different materials in accordance with the contribution of physical fitness of students and taking into account the size of the future needs of the special elective courses in assessment methods, requirements and other aspects of the proportion of scores are different. Such as: ""a kind of traditional Chinese shadowboxing -24" " and "Run" key test; "standard" items must be taken; ball games for reference.

3.2 Increase in Specific Electives to Meet Student Needs

Elective subjects in the arrangement, according to the students physical and psychological characteristics, basic motor skills, sports knowledge and interest in the project in sports and hobbies in combination with the specific conditions of the school, in the original basketball, volleyball, soccer and gymnastics on the basis of the project gradually increase the table tennis, martial arts, aerobics, yoga and aerobic kick-boxing and other projects to enrich the contents of a special elective course.

In the special teaching content, teaching becomes a simple exercise techniques to sports for the sports-oriented, practical to keep fit Yang Xin Tai Chi and development of cardiovascular system functions best as a complement of fitness to run a comprehensive physical education. Students learn specific techniques, based on

cultivating cultivation also mastered the art, to adjust the tension of the learning atmosphere, spirit and body relaxation purposes, to achieve the spirit, active muscles, physical fitness, strive for the purpose of "health first" guiding principle.

3.3 Development of Extra-curricular Elective Courses to Supplement the Inadequacy of Physical Education Compulsory

With the further deepening of education reform, required students to improve human quality, the content of elective courses offered by the school can not meet the special needs of students. To this end, we find ways to create the conditions to open a number of extra-curricular elective. To this end, we find ways to create the conditions to open a number of extra-curricular elective. In addition to the conditions of teachers in schools set up with various "rules of the game and the referee method", aerobics, martial arts classes such as: boxing, sword endures, we also use "Please come in and go" approach to enrich the content of elective courses. "Please come" is the use of school grounds, play social forces, not being able to open the school, such as "Taekwondo" project "invited" to the school; "going out" is the use of social conditions of the site, the students sent out, such as Sports Commission's swimming pool for the use of "swim" in elective teaching. Take many forms, the creation of different electives, subject to good teaching.

3.4 Set Up Health Classes, to Take Care of Individual Students

The specific conditions for students to take care of the individual student's body due to congenital deficiencies or physical defects, so that they can enjoy the fun of sports, physical education should reflect "all the students," the guiding ideology, the creation of a health class. In the teaching content and methods, assessment requirements and standards and other aspects reflect the special nature of health class.

3.5 Emphasis on Teaching Materials, Strengthening the Theory of Teaching

With the deepening reform of teaching, curriculum re-adjustment in order to ensure "health first", "for all students," guiding the further implementation of the teaching, the students have the purpose of systematic theory and a wide range of sports Health care education, has a very positive meaning. Skills will always subside, physical will decline, but a solid theoretical knowledge will always be with and to cherish forever, this is the true role of knowledge and power. In order to avoid "re-light management technology," the phenomenon, so that students get considerable theoretical knowledge to guide the future of self-training, life-long fitness of purpose, we led by the Department under the leadership of the original

single subject of special teaching materials based on the backbone of teachers in collaboration with other institutions, prepared jointly by the publication of "theoretical teaching physical education and health" and "Sports and Health practice teaching." The publication of these two materials, for our better health education for students, played a catalytic role.

Our theoretical teaching and assessment had also been reformed. To gauge theory teaching, the first outline of the teaching plan and was revised and based on the outline, write out the special theory test and basic theory test question bank and reference the answer. Second, in theory teaching, we give full play to the school of the more advanced teaching facilities, the special theory of an optical recorder, combined with animation to explain the content, both to stimulate the students interest in learning, but also to improve teaching efficiency. Final exams in theory, the content and form have also been adjusted, to expand the students knowledge, combined with the physical characteristics, using a form of open-book exam. In the special theory of assessment content, required not only to assess what they have learned the special knowledge, but also involved in.

4 Innovative Activities to Increase the Number of Entries in the Form

With full autonomy, in the form of lively, joyous play of emotions and enjoy the talents of the main features of the after-school physical activity, is to achieve "quality education" goal of the basic ways. In the training process to learn the knowledge and application of knowledge; to master skills and apply skills; development capacity and test capacity; mold character and the formation of quality. For the full extra-curricular sports activities in the "quality education" in the role, we are the organization of extra-curricular sports, activities, contests, scoring and other reformed.

4.1 Change to the Unified Organization of the Sports Department Faculties, Students, Jointly Organized by the Associations

To make a real practical results in extra-curricular sports activities, we in the activities of the sports department's role has been adjusted, change the leading role of the sports department for the counseling role, give full play to various departments, student unions, the associations of enthusiasm.

① Harmonization. Sport arrangements are specifically responsible for faculties, students, coordination of individual activities of the Association, held early each semester, faculties Sports Minister, President of the Association and the School of individual sports minister will participate in activities planned for hospital-wide harmonization of sports activities, summary of activities will be held end of the semester, and the work of prominent associations and individual faculties and student leaders to recognize, and in the "Journal of China Airlines" on the

great publicity. ②Division of labor. College has eight individual associations arranged by the Sports Ministry to assist the work of dedicated teachers, from time to time give to explain the rules of the game, arranged to help the organization, site equipment support to ensure the smooth progress of the work of individual associations. ③ Mutual cooperation. Organized by the Sports Institute of the larger sports activities such as "Student Sports Festival", is the strong collaboration of the faculties of the successful completion of the next. The "Sports Festival" some of the content such as shuttlecock competition, collective and individual jumping rope, parallel bars, arm flexion-extension, sit-ups organized by the faculties of the first stage of the game, the semi-finals by the Sports Ministry to remove the final individuals participate in the Games or collectively, not only to reduce the work pressure of the sports department, and to mobilize the enthusiasm of various departments has also increased the number of entries.

4.2 Change Traditional Single Track Meet for the Multi-sports

① Cancel difficulty scale projects and to relax the rules of combination. Games canceled in the highly technical and difficult projects such as the discus throw, javelin throw, etc., while there are some difficulties, but the students prefer, strong competition and other items such as hurdles, we have taken measures to reduce the bar high reduce the difficulty of the project, thereby enhancing the enthusiasm of students to participate in reducing the incidence of sports injuries. ② Add additional fun projects with traditional project combined; popular traditional items such as rope skipping, shuttlecock, etc. Action is easy, simple rules, and restrictions on number of entries is not easy to carry. In order to increase the fun of games, we also own some interesting items, such as strong games together, running and other obstacles. Traditional public projects and fun games of the project greatly increased the number of entries increased, contrast of the Games atmosphere. ③ Set the collective project with a combination of additional non-formal programs. Set group projects, such as tug of war, such as skipping class and additional non-formal projects, such as 8 x 100 medley relay, etc. The purpose is to increase the number of entries, and these group projects is to stimulate the student's sense of honor classes, the students all gearing up sentiment , activities, results significantly.

5 Adjust the Appraisal System to Promote Quality Education

5.1 Rrigorous Examination of Traditional Project

To make "a kind of traditional Chinese shadowboxing -24" has become a truly traditional items, and form features of the school, the school provides shadowboxing taught in addition to general learning and examinations, specialized elective

courses are also included in the auxiliary content, further improve and enhance the whole action, and requires special elective each semester examinations must be to increase the intensity of the examination.

Exam requirements in strict control of shadowboxing, different times, proposed a different assessment requirements and standards, and does not pass the physical implementation of shadowboxing fail vote veto system, urging students to study hard. In the examination form, with the teaching-learning process, respectively four four-way, two opposite direction, individual single test several forms. Not only can urge students to independently complete the entire action, and the students to face all students to perform independent, psychological training of students is a rare opportunity to exercise. Shadowboxing on the large-scale performances at athletic meets to achieve good results, is an excellent test of our strict return.

5.2 General Test Content Designed Elective

The traditional special physical education, in the content, mainly in competitive sports; in approach, focusing on technical details and processes; the requirements, ask students to run faster, jump higher, farther to vote; in assessment, the student-run speed, shooting the hit rate and various competition results, to judge the student's physical performance, the ability to judge them, this is the consequences of physical education: one student for the exam, but may not have been forced practice exam contents, practice the lack of initiative. On the other hand, some students are interested only interested in a particular technology, such as football practice shooting, basketball shooting, etc., and for other special technologies and the corresponding quality of practice is inadequate attention. In order to avoid learning the contents of a single, overall quality of practice phenomenon neglect to urge overall development of students in special classes of examinations, we are not only limited to the technical assessment of individual technologies and standards, but on the quality and the special techniques and special shadowboxing, long-distance running together a comprehensive evaluation. On the one hand the students interested in the content and quality of the content can be combined to promote the student's comprehensive ability to use technology to improve, to avoid "physical examination" passive situation exists. On the other hand, can promote students' attention to the content of other teaching practice, to achieve comprehensive development.

5.3 Sub-test the Quality of the Project

To train students to develop good physical habits, urge students usually exercise, to achieve the purpose of running fitness. We long-distance race (men's 1,500 meters, the women's 800 meters) into the physical content of each semester examination. During long-distance test form, once we shift from the traditional final exam for the combination of "standard" sub-semester test, so that one can urge students

to adhere to long-term exercise to improve endurance. Two students may be better to avoid physical exercise usually do not pay attention, just waiting to pass final examinations of the phenomenon. Encourage the poor quality of students Buzhi Yu can lose confidence and exercise. After several years of teaching practice, the new examination system has achieved significant results. Not only school students have significantly improved compliance rates; and did not open the high school physical education students to develop good exercise habits, but also to graduate "college sports eligibility criteria" test achieved good results.

5.4 Usual Morning Exercise Performance and Attendance as a Reference

In physical education, there are still a few students their innate good qualities alone, just waiting for the final exam spot to play, but not of the usual emphasis on teaching, "in Cao Ying, the heart in the Han," lack of initiative to learn, negative sabotage. There are some students only practice exam content or technology of interest, but not for other technology and quality attention. In order to fully mobilize the enthusiasm of some students, so that they develop good sporting habits, on the one hand to strengthen the ideological education, raising awareness, improving teaching methods. On the other hand we have the usual student learning, thinking and as a performance assessment of one of the elements, strict attendance, take Jiangyoufalie policy. This can only dilute the content of the exam will only work, not the content of the examination of the phenomenon does not work, but also to urge the students to value the usual sports activities, and develop their sense of good sportsmanship.

Morning exercises, students in extracurricular sports activities are an important part, but also students will, and establish good habits of good physical form[4]. The morning exercises for better play its due role, so that students in the morning with energy to learn, the morning exercises of attendance also included physical assessment content. School students under the Xuegong Chu morning exercises strict attendance statistics, does not meet the attendance standards for students in physical education a deduction of total score points. On the one hand to urge students to value the morning exercise, it also enriched the content of physical examination, and truly reflects the student's overall quality.

6 Conclusions

To update the ideas, clear guiding principles for the guidance of school sports; to adjust PE curriculum, teaching process, focusing on innovation in the form, content-rich extra-curricular sports activities as a means of deepening the reform of school physical education to improve their overall quality, as training qualified personnel service.

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An Ecological Perspective on the Cultivation of Specialists with Diversified Capabilities

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Abstract. In an age of social transformation, a major concern in the educational field is the inconsistency between tertiary graduate supply and the diversified social requirements of specialized workers suited to particular lines of work. A new strategy to resolve the problem is to approach it from an ecological perspective. This essay attempts to follow this line of thought from four aspects: the tendency and characteristics of the requirement and employment of diversified specialists during the social transformation period; the construction of a diversified ecological education system for the cultivation of diversified specialists; the establishment of a *green passage* interconnecting the growth and cultivation of diversified specialists; and the consummation of the assessment mechanisms in keeping with the growth and cultivation of diversified specialists.

Keywords: Ecology, Diversified Specialist, Requirement, Growth and Cultivation, System Construction.

The word ecology is derived from Greek, initially meaning the study of habitat. In modern days, the word refers to a science for the study of the relationship between organic body, or groups, and its/their surrounding environment. [1] Ecology has evolved into a burgeoning science which provides advanced concepts and methodologies for the solutions of issues such as harmonious coexistence and coordinated development between man and his surroundings, as well as among various sectors of human society. It is the purpose of this essay to find out a solution from ecological theories to balance and coordinate the relationship between diversified laborer requirements and diversified higher education, so as to speed up the transformation of our economic pattern and convert our higher education system from an elite-oriented pattern to a commonality-oriented one.

1 The Status and Characteristics of Diversified Specialist Requirement and Employment in the Social Transformation Period

For three decades since the implementation of the reform and opening up policy, China has made such dramatic social and economic progress that its GDP has

L. Zhang and C. Zhang (Eds.): Engineering Education and Management, LNEE 112, pp. 707–714.
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ranked Number Two in the world, and its total foreign trade import and export value has ranked Number One, as has its foreign exchange reserve. China has already established a market economy of its own characteristics. Having expanded its student enrolment quotas and enlarged its campus sizes, China's higher education has entered the commonality-oriented stage of development, where the pattern of economic growth is increasingly dependent upon scientific and technological innovation, enhanced labor quality, expanded internal needs and the initiation of green economy. Correspondingly, the social requirements for specialized talents, and the cultivation and employment of such personnel have been diversified in three new ways.

1.1 Diversified Requirements of Laborers with Specialized Capabilities

With the implementation of the Reform and Opening-up Policy, and with the rapid tempo of economic globalization boosted by information technology, new job opportunities emerge in information industry, network economy and service industry, which leads to the ramified requirements of workers with relevant knowledge and capabilities. On the other hand, diversified requirements are raised because of well-developed market economy, coexistence of multiple economic elements, and the side-by-side development of national, cooperative and individual economies. In addition to these two factors, economic globalization has transferred some labor-intensive industries and markets to China, turning it into a "world factory" and a "world market". As a result of increased channels for international brain exchange, both the types and numbers of skill-oriented specialists have been multiplied.

1.2 Diversified Pipelines for Personnel Development

Diversified requirements for specialized workers lead to diversified pipelines of personal development and employment. Some specialists graduate from formal institutions of higher education, including overseas study, while others acquire knowledge and skills through other training pipelines, e.g. self-education, military service, on-the-spot work experiences, etc. According to statistics, of the newly employed workers in recent years, 57% are college graduates, 21% are experience-taught, 13% are self-taught, 5% are taught overseas, and 4% are taught through other channels. What is more, since more and more alternative training pipelines are available for the growth of young people, the number of candidates for college entrance examination is dropping year by year.

Such an ecological environment with diversified training pipelines and job opportunities has provided a broader range of choices for educational institutions to adopt diversified training programs aimed at students with different training objectives, effectuated at different echelons, executed in different forms, and designed for different job positions.

1.3 Diversified Structures of Needs and Supply

After the national education has entered the stage of commonality-oriented pattern from an elite-oriented one, the enrolment of college students has increased by large margins, and, consequently, large quantities of graduates with high diplomas have been injected into all circles of social life. In contrast, discrepancy widens between the diversified needs of laborers and the types of graduates supplied. On 14th April, 2011, the China Youth reported a major "laborer shortage" in the southeast China. According to the Chief Personnel Supervisor of Jiansu Provincial Private Enterprises, it has become a common phenomenon that quite a few enterprises are in urgent need of intermediate-level vocational school graduates. Although the needs and supply of higher vocational school graduates are basically in balance, bachelor degree owners greatly exceed the required quotas, and master degree owners are unwanted by any employers.

The China Human Resources Market Monitor Center predicts that in the five years to come, China will need about 75,000 managerial personnel capable of working in international markets. Unfortunately, only 5,000 will possibly meet this demand.

Several factors contribute to this paradox in the needs and supply of laborers. A direct factor is due to the rapid social and economic development, which has left the training and supply of laborers far behind. This may be considered as an objective, or a superficial, factor. A more deep-rooted factor may be attributable to the discrepancy between the patterns of training and the requirements of the society. In fact, current higher education systems offer teaching programs not exactly needed by the students' future positions. Subsequently, the levels, types, structures, and capabilities of graduates from various colleges do not match the diversified needs of the latter.

2 The Construction of a Diversified Ecological Education System for the Cultivation of Diversified Specialists

The nuclear concept of educational ecology regards the world of education as a complicated and consistent organic system. Each element in this system, i.e. a student, an institute, a society, etc., is organically connected to other elements. The relations among elements fluctuate along a continuous scale of contradiction, balance and imbalance. [2] Problems such as biased relationship between diversified requirements and cultivation, irrational structures of needs and supply, can only be resolved by means of ecological education theories, which call for an ecologically balanced laborer cultivation system based on three measures of improvement, i.e. to readjust and optimize the education configuration, to reorient the objectives of specialized education institutions, and to re-mould the pattern of cultivation for creative laborers, so as to eventually satisfy the diversified social demands.

2.1 The Construction of a Diversified Education Configuration to Meet the Diversified Social Requirements for Laborers of Specialized Capabilities

It is pointed out in the newly published The Scheme for Medium-and-Long Term National Education Reform and Development, 2010–2020 that "a classification system should be established for higher education institutions as per their own characteristics. Policy guidelines and resource allocations should be applied to promote the reorientation of higher education institutions, avoid homogenous training objectives, formulate diversified training concepts and styles, and create first-class achievements at various echelons and in various sectors of education."

Currently, four national criteria are adopted for classifying China's higher education institutions. The first is the attribute criterion, which classifies them into four categories, i.e. the teaching-centered institutions, the teaching-plus-research institutions, the research-plus-teaching institutions, and the research-centered institutions. The second is the discipline criterion, which classifies them into five categories, i.e. the specialized education institutions, the liberal arts education institutions, the science education institutions, the liberal arts plus science education institutions, and the comprehensive education institutions. The third is the training objective criterion, which classifies them into three categories, i.e. the higher vocational education institutions, the colleges offering four-year undergraduate programs, and the universities. The fourth is the sponsor criterion, which classifies them into four categories, i.e. the public sponsored institutions, the public sponsored institutions partially supported by private funds, the private sponsored institutions, and the institutions jointly sponsored by Chinese and foreign funds.

Ecological education theories encourage exchanges among various types of institutions and call on them to exert their influences upon the society through interactions with the latter. [3] What we need to do now is to launch a top-down reclassification of these institutions solely based on the criterion of diversified social requirements for specialized laborers. Institutions of different categories should focus on the training of their particular type of laborers. Only in this way can a diversified ecological education configuration be established, which is balanced and harmonious, and promises to meet the social demands.

2.2 Reorient the Training Objectives on the Basis of the Attributes and Historical Traditions of Education Institutions

An important factor in the establishment of a diversified education system is how to reorient the specialized training objectives of each institution. While the requirements and growth of laborers are individualized, no less is the orientation of training objectives in various institutions. For example, Qing Hua University is known for her rich S&T traditions. Bei Jing University is featured by her comprehensive education. Jiao Tong University boasts her broad engineering disciplines,

and the China Science and Technology University is proud of her precise and profound S&T courses. Enlightened by the theory of diversity of species, institutions should take advantage of their own traditional strength and step on a path for uniqueness, excellence, prominence, and sophistication.

2.3 Create Individualized Patterns of Education in Accordance with Diversified Specifications of Laborers Required

Since it is very difficult to cultivate workers of diversified capabilities via only one pattern of education, an important channel to reach this end is to create new training patterns. [4]The present patterns still follows the tradition of the industrialized age, marked by passive book reading and indoctrination. The quality and standard of laborer education are limited for lack of individuality, creativity and open-mindedness.

It is pointed out in The Scheme for Medium-and-Long Term National Education Reform and Development that (education institutions) should endeavor to meet the demands of national and social development, obey the law of talent cultivation, deepen education reform, invent new teaching methodologies, explore diversified training patterns, and create favorable conditions for the growth of various types of topnotch specialists.

Ecological education theories state that, stimulated by their own training objectives, individual students always interact with education institutions, leading to various educational processes and results. [5] Training specialized laborers can be compared to cultivating plants. The trainees go through a process of budding, growing, and maturing nurtured by appropriate amounts of sunshine, water and fresh air. Different types of laborers should be trained with different doctrines of education, which presuppose different patterns of training. For example, topnotch creative students can be trained with the elite-education concept, by pooling up first-class educational resources to absorb them into experimental classes, research classes, or multinational classes. General purpose students can be integrated into the liberal education system. Specialized workers can follow a program for their particular needs. And skill-centered trainees can take a career-oriented course, which combines classroom teaching with field apprenticeship.

3 The Establishment of a Green Passage Interconnecting the Growth and Cultivation of Diversified Specialists

When an ecological education system for diversified specialists is established, greater margin should be available for their leapfrog development. “Fast lanes” and “cloverleaf junctions” will allow for excellent trainees to skip conventional phases of growth and directly engage in higher echelons of training.

3.1 Conduct Lateral Composite Training across Different Majors

According to the multi-intelligence theory, every student has his independent multiple intelligence structure, which foretells his potential for comprehensive development across lines of capabilities. [6] From this point of view, it will be necessary to create conditions for leapfrog development. For example, a talented student may be permitted to register for a second major. With the knowledge and skills gained from both his first and second majors, he may not only improve his adaptability to a variety of professional careers, but also get accredited for more than one Bachelor's degrees.

3.2 Erect Vertical Transitional Ladders across Different Echelons of Training

Apart from cross-discipline development, students may also jump vertically over echelons of training. In other words, a student at a lower echelon may continuously move upward to higher levels of training. Such promotions can be speeded up through a green passage designed to uplift excellent students. If a skill-centered student has demonstrated his potential to study at a higher echelon, he may shift upward that level of training intended to turn him into a designer or an engineer. Accordingly, a student with an associate degree can apply for programs of a Bachelor's degree, an undergraduate student for a Master's degree and, further up the ladder, for a Doctor's degree. In addition to this, the credit-hour system, which breaks the boundary between school terms and gives freedom to individual potential, can also be launched to encourage leapfrog development.

3.3 Build Cloverleaf Junctions for Exchanges across Different Education Institutions

Greater opportunities for leapfrog development are more likely realized through exchanges across institutions and countries. The current of exchange mainly flows from average institutions toward key ones, from lower echelons to higher ones, and from domestic institutions to overseas ones. Such exchanges should be intensified on condition that both the types and the standards of scholars to be swapped are kept within strict limit. Presently, several autonomous enrolment alliances have been founded to recruit university students. For example, the Hua Yue Alliance and the Bei Yue Alliance headed by Qing Hua University and Beijing University. By adopting allied entrance examinations, they have successfully reduced their enrolment costs and heightened the standards of selection. However, resources should not only be shared for recruiting students, but for the learning process as well. Lateral and real-time exchanges should be encouraged among various types of students. Cloverleaf junctions should be built up to facilitate exchanges in the forms of a cross-curriculum selection system, a credit-hour cross-accreditation system, and a tutor alliance system, etc.

4 The Consummation of the Assessment Mechanisms in Keeping with the Growth and Cultivation of Diversified Specialists

A major yardstick used to evaluate specialist cultivation is the quality of education. A scientific and diversified quality assessment mechanism plays a key role in the selection of excellent workers, as well as in the practice of autonomous learning. [7] Assessment is most objective when government officials, educational staffs, parents, and representatives from the community jointly participate in it. A scientifically designed, socialized assessment mechanism should be based on job responsibilities, and directed by moral codes, capabilities, and accomplishments. The current quality assessment criteria and systems should be further consummated under the guidance of ecological education theories. Individualized criteria for assessment, independent accreditation mechanisms, and open-ended assessment mechanisms should be compatible with the principles of diversified specialist cultivation.

4.1 Set Up Diversified and Individualized Assessment Criteria

Assessment criteria must be individualized, for it is unreasonable to fathom the capabilities of talented people with one single yardstick. Assessments should be directed to the special qualities of each type of persons and differentiating criteria should be applied to the selection of students endowed with particular aptitudes. Now that there are common ethic and moral values accepted by the entire society, there should also be individualized assessment criteria for different types of talented people at different echelons.

4.2 Set Up Independent Accreditation Systems for Objective Assessments

Independent assessment criteria and mechanisms should coincide with the established standards accepted by the society, and consequently provide an objective yardstick for the assessment of the growth and education of specialists. At a time when the assessment mechanism is being socialized, vocationalized, and professionalized, the job can be entrusted to a specialized organization free from administrative influences, with a purpose to ensure objective and fair results of independent assessments.

4.3 Set Up an Open-Ended Dynamic Assessment Mechanism

The result of education must be rated by the employers and the professional communities. It must be able to stand the test of social practice and the progress of times. Therefore, whether a person is specially endowed cannot be predetermined

by any one. Talented people should be thrown into the society to withstand storm and difficulties, where a horse with extraordinary capabilities is no longer determined by Bo Le, an ancient expert who had a sharp eye for good horses, but by fair competitions under public supervision and open to public participation. Instead of determining the lifetime achievement of a student by one examination alone, emphasis should be laid on process-oriented tests, which will keep track of all dimensions, all processes, and all members in an education system. In a word, assessment should be synchronized with the paces of personal development.

5 Conclusion

It is a complicated systematic engineering project to maintain balance between diversified education environments and diversified social requirements. Such an equilibrium resides not only in the coordination among the growth, training, assessment and employment within an ecological education system, but also in the larger social, political, economic and S&T environments, in which education programs should continuously compromise with the change of times to enable comprehensive, coordinated, and sustainable cultivation of talents with specialized capabilities.

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Medical Physics Curriculum Reform

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Abstract. With the advancement of science and technology, medicine obviously depend on physics. With the content and quality requirements increasing continuously, it is an urgent need to accelerate Medical Physics curriculum reform. In this paper, some explores and practices of thereform in the Medical Physics are discussed. We assume that we should consider enough professional knowledge with clues when we organize the teaching contents. In the experimental teaching, we try to make teaching with more medical applications. We should create teacher-centered online teaching platform for increasing the exchange of information in the network. Through curriculum reforming, We will improve teaching quality and optimize the knowledge structure, and train students to be eligible doctors. Medical Physics curriculum reform task is urgent and necessary.

Keywords: Medical Physics, Curriculum Reform, Teaching Pattern.

Introduction

Medical Physics is a public foundation course in the medical colleges, which chiefly researchs the most basic laws in life activities. Physics is the cornerstone of the natural sciences to study the fundamental nature and the basic laws of substance. Medical Physics emphasizes particularly on medical applications, and mainly introduces the basic theoretical knowledge of Physics, as well as the important contributions to the development of modern medical science. In medical education, Medical Physics is not a common basic courses. Human, as the object of medical researching has the basic properties of the material, and the life law of human are built on the basic properties of the material. Since Physics is the most logical and scientific subject, so there is a latent effect in learning Medical Physics which is training students scientifical and rigorous way of work and thinking.[1]

With the advancement of science and technology, Medicine obviously depend on Physics. Physics went with any sides of medicine. Along with the demands for medical services improving, it increase that the requirements of some knowledges of physical laws and applications. One of the most important character of Medical Physics is continuously updating knowledge content, developing and progressing continuously. The Medical Physics education in modern medical education is clearly not meet the new requirements. In addition to rigescent management

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mechanisms and behindhand curriculum system, there is also the problem of the teacher's slowly knowledge update.

In recent years, China's economy has been a steady growth rate of 8% of the development. people's living standards keep rising, and the demand for medical services is also rising. The requirements of Medical Physics teaching have been increased. Medicine is the new technology fastest applied in Medicine. Introducing new technologies and new means of modern physics in the clinical diagnosis and treatment, is an important part of Medical Physics course. With the requirements of content and quality increasing continuously, it is an urgent need to accelerate Medical Physics curriculum reform. This article focuses on some issues and thinkings in curriculum reform in Medical Physics, in order to promote Medical Physics curriculum reform accelerated, so that Medical Physics teaching can be more responsive to the requirements of the new era.

1 Problems

Chinese medical education is generally low-level training model of community doctors. They attach importance to clinical but not basis, as well as many key institutions. There is a great relationship that a lot of experts were trained by this low-level training model. Another reason is that Chinese population is too large, so that the first problems to solution is community health in a very long time. It will inevitably lead to neglect of Medical Physics and other public foundation courses in medical schools. It makes the Medical Physics hours reduct repeatly. Curriculum is very unreasonable. However, as the development of Chinese economic and the better livng standard of people, the health insurance requirements will gradually increase. On one hand, there is the strong momentum of development of medical equipment, and the total of medical equipment increase, 0n the other hand, new medical equipment continue to emerge, changing the pattern of traditional medicine and making modern medical treatment more dependent on modern high-tech. Exaggerately speaking, the doctors could be lacked but advanced equipment could not be lacked. In this situation, the Medical Physics is not only a basic course but also a new subject to people. Calmly analyze the situation, sudden change is can not be done, and have to go step by step.

Let us analyze the current problems of Medical Physics education:

1.1 How to Get a Right Orientation of Medical Physics?

It is closely related to a right orientatio of medical college. As application-oriented colleges or research-oriented universities, emphasis extent is certainly not the same on Medical Physics. As it is long-term condition lacking community doctors in our homeland, medical education are eager for quick success and instant benefit. In Western countries, to become a qualified doctor, it is necessary to finished science education first, further medical education,until being a doctor. Because they think that any things related to human life is the most serious. But it only needs four to five years in China. These students only learn 30-100 hours for the

most basic and universal laws of physics. Different needs, different orientation. It will directly affect the distribution of Medical Physics course's hour, teaching contents and teaching requirements.

1.2 How to Improve the Medical Physics Education?

Because it is not been regarded as an important course and it is only a public foundation course, so that the teachers of Medical Physics are very difficult in attending in an advanced studies and scientific researchings. They have fewer opportunities for education and exchange. They have no money, no conditions of researching and experiment. It is very difficult to get a project. They are long-term in the closed environment and can not improve themsevles. Contrasty, the Medical Physics knowledge changes with each passing day, and new theories and technologies are emerging continually. A lot of new equipments lead to the higher modern level of hospital. Teachers are limited, so do students. Teaching quality can not be guaranteed.

2 The Reform Ideas

2.1 About the Organization of Teaching Contents

Medical Physics is combined with physics medical applications. Its contents is extensive including with physical and medical applications. It must focus on the emphasis in limited time. Previous teaching contents are usually organized as a framework by physical systems. Though it seems to be more complete knowledge, but the contents is abstract and difficult and students are not interested. In recent years, we have been apply ourselves to optimize Medical Physics curriculum, and try to resolve this contradiction. We get some elicitations from the case study which is a teaching reform issue[2]. We are inspired by the small-scale experiments. We found that if the teaching contents were combined with the professional knowledge, the students would feel more interested in it. Shen Yaping in Nankai University has said, "Let the students study in interest with enhancing their consciousness of the problems and innovative thinking." Therefore, we assume that we should consider enough professional knowledge with clues when we organize the teaching contents.

2.2 About Experimental Teaching Organization

Physics has always been an experimental science. The experimental mathematical methods which been used frequently shows physics scientific. Medical Physics experiment courses is absolutely necessary. How to organize it is worth exploring. Our current Medical Physics experiment courses is divided into three parts, the basic physics experiments for the general contents; the integrative experiments for

the medical applications; the open experiments for innovative contents. From learning, students enhance the understanding of the principles of the experiments. The mastery of experimental operation rules, the ways of analyzing problems and the ability of unity and cooperation have been increased. Along with the laboratory building, the Medical Physics experiments have a lot of medical characteristics. The degree of students satisfaction and participation is gradually improving. Somethings should be adverted such as not to discourage students self-confidence, to communication with students timely, and to pay attention to solve some of the problems in time.

2.3 About the Network Organization of Teaching

For less class hours, learning conditions after school are more important. Usually curricular learning reflects the quality of teaching, and extra-curricular learning shows the quantity of learning. The network teaching for the teaching system of Medical Physics is an important supplement. Many tring have been done, but failed. It has bad effct because they only aimed at the building of network teaching contents and not knew the effct of the networked environment. When any good ideas or good contents leads to a good result on the network, it must have been enough traffic of the network. The student-centered teaching platform would become easily information acnodes because of lacking professional knowledge and personal influence. It is difficult to achieve the default target. Only creating teacher-centered online teaching platform can authentically increase the exchange of information.

3 The Conclusion

In the new situation, Medical Physics curriculum reform is imperative. Medical Physics in medical education system will certainly play a more important role. Medical teaching education services for people in the end. People oriented; We should adapt to the new requirements for education of medical science and technology, and meet the increasing health needs. Through curriculum reforming, We will improve teaching quality and optimize the knowledge structure, and train students to be eligible doctors. Medical Physics curriculum reform task is urgent and necessary.

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Application of Peer-Instruction Pedagogy in Curriculum of Packaging Technology

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Abstract. Peer-Instruction (PI) pedagogy focuses on self-access study, cooperation, communication and interaction, the critical factors of the PI pedagogy are how to stimulate the consciousness of students and guide students to explorative study. In our bilingual course, ie., *Packaging Technology*, which was awarded one of the national bilingual teaching demonstration courses in 2010, the PI concept is introduced, in which teachers play key role in controlling and guiding in teaching. Such teaching methods as heuristics, participation and research-based learning are adopted to stimulate students' ability in self-access and improve the quality of bilingual teaching.

Keywords: Peer-Instruction, Pedagogy, Interactive teaching, Oral training, Bilingual teaching.

1 Introduction

Peer-Instruction pedagogy was originated by Professor Eric Mazur at Harvard University in1990s, the paper about PI teaching method, "Farewell, Lecture", was published in Science in 2009. This method alters the traditional force-feeding teaching into self-access and cooperative learning mode, it pays attention to inspire students' subjective initiative and realize the interaction of the diversified main body [1, 2, 3]. The core of Peer-Instruction teaching method is that achieves the purpose of self-access ability through encouraging students cooperative learning [4], hence, instructional design of PI emphasizes learners to cooperate with others.

Under the influence of reform ideas of "equal stress on theoretical teaching and practical teaching", teaching plan was revised. The two curriculums, "*Packaging Introduction*" and "*Packaging Engineering English*", were merged into bilingual curriculum "*Packaging Technology*" in 2001. In order to expand students' international horizons, improve their international competitiveness and enhance the self-access ability, peer-Instruction was introduced to teaching process and achieved good results [5, 6].

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2 Application of Peer-Instruction Pedagogy

Application of PI pedagogy is that builds interactive learning environment, avoids staying in the position of self-centered and lacking of understanding different viewpoints. Most of all, cooperative learning mode under the concept of PI pedagogy is designed for students in the classroom, it can provide opportunities that students can argue, discuss, exchange with each other and finally jointly solve problem [7, 8]. The following contents are concrete practices in bilingual education curriculum.

2.1 Research Ability and Oral Training

The aim of this whole process trains students basic scientific research ability, while improves the English communication, presentation, organization and team cooperation ability. The training tasks of research ability and oral training was designed including surveying literatures, working out an academic paper, presenting oneself in public and cooperating with each other. Mainly, the method adopts research activity by group, schedule as is shown in table 1.

Table 1. Schedule of PI teaching research by group

Due Date	Tasks	Notes
WK3	Team division	E-mail
WK5	Topic and sub-topics done	E-mail
WK9	Draft done	E-mail
WK11	Final paper done	E-mail, Turn in
WK13-WK16	Presentation under way	By team

The specific procedure is as follows:

- *Define Groups (basically 3 persons per team)* Taken into account the communication convenience of members, the groups were determined by interest according to expertise subject. The member lists determined inform teachers by E-mail.
- *Determine a Specific Topic* This process includes three phase: (1) Individual investigations phase: Members of the group separately search for data and literature in library or online. After screening and analysis of the required information, each member provides valuable content for other members of group; (2) Team discussions phase: Team discussions are most important part of this

phase and reflect significant ideals of PI teaching method. Each member explains his viewpoints and analysis issue from a different angle; (3) Oral report phase: After students complete the previous links, they will do five-minute report in the classroom. It not only promotes students' expression ability, but also offers opportunity for other group to learn from different viewpoints.

- *Write a academic paper* (1) Writing a paper outline phase: Paper outline includes the prodrome, main part and conclusion, moreover, schedule of work must be attached; (2) Submitting a final paper phase: Final paper includes incorporating title, names, abstract, body (introduction, analysis, data & graphs, pros & cons), conclusion, bibliography. Words is required at least four pages (the page settings: A4, 20 lb spacing and default page-up).
- *Make a presentation* (1) PPT making phase: Using the computer software, every team organizes data and makes slides that show by PowerPoint, slide number amounts to approximate 20 pages; (2) Presentation phase: Students are required to wear the business casual, and to speak and answer questions in a limited time. Generally, speaking time limits between 15～20 minutes and answering time limits within 10 minutes per group.
- *Evaluation* Students' representatives and teacher involve in assessment and every team is arranged as a unit. The evaluation criterion bases upon the following: (1) Section of research papers and contents: The item includes evaluation of topic, draft and final paper; (2) Section of group presentation: Skills, articulation, pose, slides and coordination are considered by students' representatives and instructor.

2.2 Interactive Teaching

The great advantage of interactive teaching is that can inspire the students to think problem [9]. The following manners are mainly used: (1) Appropriate chapters are selected and assigned one week in advance, students watch teaching video on class web site. In class, teacher explains the key points of the course, then some questions are put forward to students. After discussion with English, part of students openly answer questions in five minutes. Simultaneously, teacher encourages other students' free comments. At a last, teacher does summary comment; (2) On the basis of reading English literature, students make a list of all obscure terms on literature for teacher and classmates commenting on; (3) Quiz is adopted within ten minutes in the classroom that inspects master degree of professional vocabulary or major knowledge. Results will be published on BBS of the *"packaging technology"* course wed site, students can access to information of quiz results and then the errors are assigned as the homework; (4) Establishment of online course network provides an interactive communication bridge between teacher and students. It shares high-quality resources, everyone has opportunity to exchange different viewpoints and obtains knowledge who wanted. The role of network platform in teaching show in Fig. 1.

Interactive teaching not only promotes the consciousness of students in learning and strengthens the professional vocabulary of memory, but also stimulates the students in-depth thinking and interests in reading.

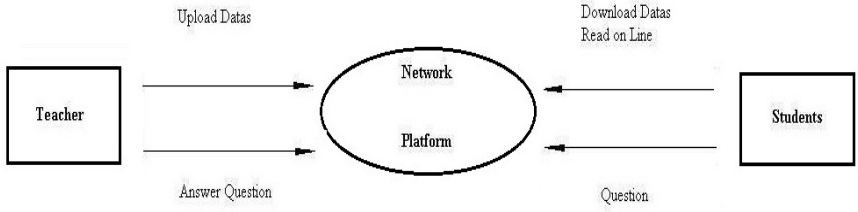

Fig. 1. The role of network platform in teaching

2.3 Evaluation of PI Pedagogy

Evaluation process is time-consuming work. Through the questionnaire of 2003 grade, 2004 grade and 2005 grade students of packaging engineering, amount to 152 individuals, the survey research found that attendance ratio attains more than 98% in the *"packaging technology"* bilingual teaching course and 11 items of evaluation index are improved along with the understanding and PI teaching methods gradually updating gradually, The scores of evaluation are shown in Fig. 2.

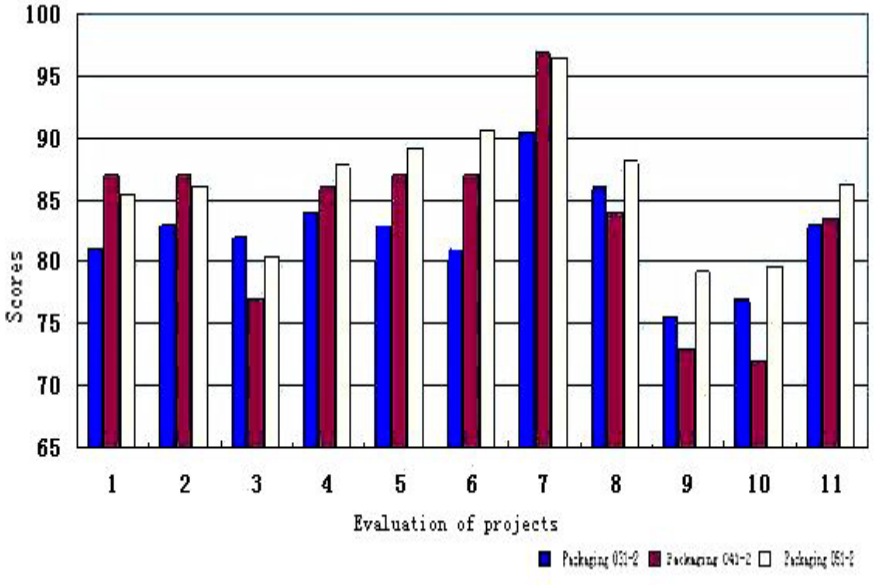

Fig. 2. Evaluation of *"packaging technology"* bilingual course by students
1. Evaluation of selected foreign language textbook; 2. Teaching materials evaluation; 3. Difficulty degree of teaching content; 4. Evaluation of the overall level of foreign language; 5. Comprehensive evaluation of professional knowledge; 6. The proportion of foreign language application; 7. Multimedia and courseware; 8. Evaluation of pedagogy; 9. Impact of foreign language proficiency; 10. Mastery of professional knowledge; 11. Applications of network platform.

Obviously, the teaching method of PI scores above 80 points among three years. The students' remarks are: very suitable, innovative, breaking the traditional teaching methods, merging west teaching philosophy to teaching and learning, allowing students to actively express themselves and reflecting the student's dominant position in the classroom, studying advanced packaging professional knowledge and also adding to our interest in the curriculum. Nevertheless, the number of students in specialized course is limited, sample size is too small and teaching experiment cycle is very long. Hence the effect of PI pedagogy, in scientific qualitative and quantitative, must be confirmed by further experiment.

3 Summary

Due to application of PI pedagogy, the bilingual teaching of *"packaging technology"* has made some achievements. But course construction is a intricate system engineering and still need a lot of work to do, such as teaching outline, teaching material, teaching content, teaching methods and teaching management etc. Present trends in tertiary education advocate ability of self-access and develop lifelong learning habits [10]. Therefore, application and innovation of bilingual teaching approach are essential and long-term process in order to adapting to these trends.

Acknowledgements. The authors wish to express their gratitude to members of Shaanxi provincial-level teaching team of packaging engineering for their helpful support, and also thank national-level bilingual teaching demonstration course of *"packaging technology"* to subsidize.

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The Reform of Local Geographical Education under the Background of Globalization in Chinese Universities

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Abstract. Globalization is the background and the basic trend of the development in the world today, which is a global localization process. We know it clearly that the world can't exist alone without local, the research for the relationship between globalization and localization has become a hot issue in the academic circle. In this paper, the author regards the native culture of source of local geography education as the research target, analyzing the current local college geographical education, discussing the necessity and main contents of the local geography education under the background of globalization, and putting forward the main strategies of college local geographical education reform in the angle of globalization.

Keywords: Globalization, University, Local Geographical Education, Reform.

Introduction

Nowadays, *globalization* is a significant trend of the world development. According to Robeson's globalization theory, globalization is not single but a global localization process, in which global and local permeate and influence mutually [1]. From the multidimensional viewpoint, it is clearly globalization occurs not only in economic, political and cultural domain, but also in domain of higher education, while the local geographical education in universities can best reflect the local characteristics. Obviously, it's significant to discuss how to *reform* the local geography education in universities under the background of globalization, and realize the ties between local geography college education and globalization.

1 Current Situation of the Local Geographical Education in Universities

1.1 Current Situation of the Local Geographical Education Development

1.1.1 Weakness in Local Geography Theoretical Research

Look from the subject classification system, local geography is “comprehensive geography of a specific small range ", its main research is "Categories of the study

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of the regional geography in specific small range" [2]. If consider in a high aspect from the development of the discipline, local geographical education should first reflect in its theory research. At present, the theory research about the local education is more mature, such as the *local education introduction* [3]and *Chinese local materials about One hundred years* [4],etc. By contrast, the theory research of local geography is weak, just now in the *local geography teaching research* [5].

1.1.2 Contents of Local Geography Education Embodied in Other Geographical Courses

As a regional geography in the study of the geographical scope of under provincial administrative units, Local geography is the extension and empirical of China geography course and bears the main practice tasks of the Chinese geography [6]. Local geography is a deep comprehensive, developmental, and educational regional geography course. It is the organic part of college geography which runs through geographical synthesis problems and set theory, practice, skills in one. Hence, in the practical teaching of the course, such as *China geographic, world geography, geographical area, city analysis and planning*, etc., teachers usually use local geography knowledge in the theoretical analytic and case analysis.

1.1.3 Much Attentions Be Paid To the Practical Teaching Indirectly

Most of the colleges attach great importance to the setup of the various professional practical course of Geography. And make the practice courses, which consisted of a certain portion of the required credits, independently in the list in of the teaching programs, for instance, the geological and geomorphological field practice, weather and climate science internship, human geography field practice, "3S" integrated practice, plant soil field practice and so on. Because of the intimate relationship of the local geography and the geography course, usually we take the local areas, as well as the place where the colleges lies in, as the Internship place, the local geography provides the internship conditions for getting geographical knowledge and deepening the theoretical knowledge of other related geography courses, making the practical teaching of local geography received indirect attention.

1.2 Existent Problems in Local Geographical Education

1.2.1 Separated Local Geographical Course Not Being Found in Most Universities

According to incomplete statistics, in 2010, China has about 186 colleges and universities recruited undergraduate geography, in addition, there are nearly 159 colleges in which junior college students are permitted, but only 32 colleges has independently set local geographical course, accounting for less than 9%[7]. These mainly because when in the year 1998, local geographical course was not enrolled

into the major course in colleges and universities, while this transition of teaching plan has generated the result that in many colleges and universities the volume of professional course has been condensed while the general teaching course was increased, they no longer continue to open "Local Geography" course or arrange lessons inadequately. In some colleges which are absent of the separate set of higher local geography courses, local geographical course just be in the integration of China geography, world geography, and other geography curriculum.

1.2.2 Lack of Local Characteristics in Local Geography Textbooks

As the teaching content of local geographical course must possess the characteristics of being authentic and epochal, local geography textbooks also should be endemic. According to the survey, in most colleges and universities which have opened the local geography curriculum, the "*local geography teaching and research*"[5] is chosen as their textbooks. Using this book do can enable students to master the methodology of the studying of local geography, but can't make its local features being prominent. As we can find that the provincial geospatial range is too large, the native style is down and down, there is less or even no sense of "homeland", in this circumstance, students' interest and enthusiasm absolutely cannot be aroused.

1.2.3 The Teaching Model of Local Geography Education Remains Teacher-Oriented

In most colleges and universities, the process of teaching local geography still stuck in the classroom-based teaching, the students are lack of the ability to explore their own study, they just emphasis on grasping knowledge, or the language of symbols and concepts of cognitive memory. Teachers ignore the practical side of local geography, and seldom or never relinquish the students to do a single or a combination of geography or social surveys outside, while this is quite productive.

1.2.4 The Backward of the Practical Teaching Base Construction of Local Geography

Local geography teaching practice base cannot be found in most colleges and universities, only in few colleges which insist on the practice of teaching and cultivating the local geography, but also has the features of being unset and short-term. And the students has no comprehensive knowledge structure, or the combination of structure of thinking and values, even the synthesis of geography and other disciplines such as environmental course, and social integration between disciplines and comprehensive learner. Therefore, the construction of teaching practice and the integrated teaching base for local geography is necessary and urgent.

2 The Necessity and Main Contents of the Local Geographical Teaching under Context of Globalization in Universities

2.1 The Local Geography Education Reform in Universities Is an Inevitable Requirement of Globalization

2.1.1 The Local Geographical Reform in Universities Conforms To the Character of National Education

Trend towards globalization must be maintained and we should promote the development of local culture, reflecting in education area is to keep a balance on the localization and internationalization of education. Local colleges and universities have unique educational geography education and ideology, through the description of the home by the students of the natural environment and cultural landscape elements such as geographical description of objective reality, to summarize, interpret, and integration dialectical analysis, and then hit the height of theory, enhance students' sense and understanding of local culture, exploit rationally the local resources, use and protect the environment and find the right way to the construction and development of their home to improve their professional standards, in order to comply with the context of globalization, the characteristics of national education.

2.1.2 Local Geographical Educational Reform in Universities Meets the Requirements for the Disciplinary Talent

Economic globalization and the rapid development of science and technology trends requires corresponding much higher in the quality of workers, in order to hit the target of training highly qualified talents as a main objective of institutions of higher learning, be corresponding with the increasingly globalized market for college graduates, we should explore a new model to keep the balance with the international market. Local geographical education can improve student's own local research level, which can lay a solid foundation to work for the future do research, also can help the students to become the versatile talents, to meet the global demand for talent.

2.1.3 Local Geographical Educational Reform in Universities Meets the Cultural Globalization and Regional Demand for Innovation

Globalization is another opportunity for regional economic development stepping into modernization. To be corresponding, we must reshape a new regional innovation culture, which is mainly for students to cognize different styles of things. The spirit and consciousness of innovation is not depend only on IQ level, but also on the long-term studies of an innovative practice of the students the habit of thinking. Because local home is the place students can easily get close, it is their most familiar place, and it is most likely to stimulate students to seek knowledge and

improve their interest in learning the spirit, the local geography education can help students to cultivate the innovative spirit and the ability to seek knowledge and spirit, to improve learning ability, what's more important is that it has adapted to the needs of the globalization of regional culture of innovation.

2.1.4 Local Geographical Educational Reform in Universities Meets the Trends of Comprehensive Study in Small Areas

In the 21st century, special attention is paid to the comprehensive study for small areas, the regional economic structure, type, nature affects the structure of the regional cultural development, type, nature, and as a small regional geography, the local geography is the minimum level or basic level, which has its object of study and unique content and methods, its theories and methods are a necessary complement to the regional geography and perfect, therefore, the reform of university education is in line with the trends of the local geography research.

2.2 The Main Contents of the Local Geographical Teaching Under the Background of Globalization in Universities

2.2.1 The Curriculum Construction of Local Geographical Education of Universities

The curriculum of local geography has great flexibility in various colleges and universities can fully consider its relationship with other courses. For example, in regional geography teaching system, according to the principles like by far and near, the first general after general, it can be placed after the *"China geography*" and *"World geography*". The local geography curriculum is set after curriculum of physical geography and human geography curriculum, which can deepen the theory and has a better combination of knowledge and practice. Usually the local geography teaching content should include the local geography, geography and the basic knowledge of local geography research practice, from the college geography education professional training objectives, local geography curriculum of the total class should be about 30 and was assigned to the corresponding three sections.

2.2.2 The Teaching Material Construction of Local Geography in Universities

The local geography teaching material belongs to the multi-level teaching material system, it includes four levels like province, city, county and township. Therefore, in accordance with each level of regional geographic elements of tissue materials, according to location, geography, climate, hydrology, soil, vegetation, population, national, industry, agriculture, commerce, traffic, city and other elements of the system described, and write it from the high level to the low level .This teaching material allocation method is clear, clearly, students learn knowledge systematically but the form more rigid, failed to highlight the local geography teaching personality. At the same time, the outstanding problems and important geographical

features within the local regional system can be as center to organize the teaching material; complex material is selected from the most essential and the most representative materials, to reflect the local geographic features. This topical preparation method of novel form, smoked points can reflect quite prominent, local geography teaching material characteristic, but insufficient system; it did not favor the student to form the complete knowledge structure.

2.2.3 The Construction of Teaching Practical Base of Local Geography

Local geography practice base selection and construction plays a very important role in the local geography field practice teaching plan, and directly affects the teaching tasks and practice effect. In the teaching process, it should be combined with teaching content, organizing students to local geography based on field research and social investigation, so as to select the long-term practice base, at the same time it also requires the construction of practice base of the information base and material base, teachers should enhance the familiarity in practice base, to instruct students on practice base, expand the cognitive degree for topic selection, for security paradigm of practice teaching are carried out smoothly.

2.2.4 The Construction of the Network Teaching Platform of Local Geographical Teaching

Internet promotes the globalization development. Based on the field practice teaching, network teaching can be supplemented by consolidation and Security Paradigm of teaching learning effect. To construct the course of network teaching platform, in addition to basic online courses (including the course orientation, teaching notes, submitted to the operating), online discussion module, it also needs to provide two functions: First, accumulate the students' respective hometown geography courseware and teaching practice base material, and collect high school teaching as an important classroom resource module for students inquiry. Second, provide a "virtual field practice" practice platform to online practice Network teaching platform can enrich the teaching contents and practice for a limited range of regret, which makes a teaching demonstration effect on students.

3 The Main Strategy about the Reform of Local Geography Education under the BackGround of Globalization in Chinese Universities

Through the analysis of the present situation of the local geography in universities, combine the existed problems and the main content of the reformation. In this paper, we think that the reform of the local geography has the following three main strategies based on the background of globalization.

3.1 Perfect the Policy Supporting Issues of the Local Geography in Universities

Local geography education is an indispensable education form among the cultivation of students who majoring in geography in the age of globalization. In order to guarantee the continuously development in theory and practice of the local geography education. We must rule the status and functions as well as the implementation in the policy level. Therefore, the relevant departments should perfect the policy supporting of local geography education in universities. Through the various forms to local geography education, let teachers and students realize local geography education is the important part of the modern geography education. The training of the talents should not only have international awareness and global consciousness, the more need to cultivate their local consciousness. The time when training their participation in various confidence and courage of international affairs, it's also need to pay attention to training the rural society as a member of the rural society to have the identity, acceptance and belonging, strengthen their local social culture and with mental contact. Only these talents can put his own intelligence to the social contribution, it's more meaningful no matter to the world or local.

3.2 Build the Incentive Mechanism of the Innovation to Local Geography Teaching in Universities

To realize the connection of the globalization and localization about the local geography education, we should outstanding teaching innovation, so need to have in support. The present development of geography teaching is lack of clear direction; the academic research is lack of sustainability, and the teaching lack of innovation. In scientific research and teaching subjects and review process applications at present, the research achievements of recent tend to stress the social and economic benefits, and for the basic scientific thinking, and scientific method and the importance of scientific tools, that need not enough attention, so it's need to strengthen innovation in local geography teaching and scientific research subject.

3.3 Strengthen the Academic and Teaching Exchange in Domestic and International of Local Geography

The local geography education abroad develops earlier than our country. Not only the theory construction, the basic knowledge system, research practice, education function, teaching material and curriculum construction and so on are more mature. But when learn from the foreign countries, we must base on our own local culture, take the essence to development the local geography education. At the same time, domestic local geography education exchange also capable of cooperation and comparative study.

4 Conclusions

The local geographical education reform under the context of globalization is a process of local globalization. During this kind of process, some global factors and local dimensions of geographical education in colleges and universities mutually influenced and restricted. In order to adapt the local geography education in colleges and universities to the trends of globalization, and then to achieve the beneficial goals of local globalization, it is quite necessary to make some big reforms on local geographical education which based on the analyzing the current situation. This paper ultimately comes up with the concrete contents and main strategies of local geographical reformation under the era of globalization in colleges and universities, no doubt all the issues can further promote the development of local geographical education in the trends of globalization.

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The Innovation of the Ideological and Political Education Should Be Combined with Technological Innovation

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Abstract. The ceaseless innovation of science and technology make the ideological and political education work faces a hitherto unknown opportunities and challenges to the innovation of Ideological and political education work of the task is more urgent. The work of Ideological and political education innovation only combined with technological innovation, open up new approach, explore new approach to enhance the sense of the times, strengthen the work of Ideological and political education pertinence, effectiveness and initiative.

Keywords: ideological and political education innovation, technology innovation, combination.

Ideological and political education is the Communist Party of China family heirloom is achieved victories of revolution and construction is the fundamental guarantee and one of the important conditions. Comrade Deng Xiaoping pointed out: "in the past our party no matter how small, regardless of the difficulties encountered, there has been a strong fighting force, because we have Marx and communism belief. Have a common ideal, also have iron discipline. Regardless of past, present and future, this is our real strength." The "CPC Central Committee on strengthening the construction of socialist spiritual civilization on the resolution of the problem" point out: "the ideological and political work is our Party s fine tradition and political advantage of the construction of spiritual civilization, is a basic work and do a good job in two civilized construction is the basic guarantee, in the new situation should be enhanced." While the current ideological and political education is facing what kind of new condition? Enter the twenty-first Century, the rapid development of science and technology, science and technology innovation is caused by the mode of production, life style and mode of thinking and concepts of great change, similarly to the ideological and political work to bring a lot of new situations and new problems, the ideological and political education work faces a hitherto unknown opportunities and challenges to the innovation of Ideological and political education work the more urgent. The innovation of Ideological and political education involves square respect area, affect the overall situation, it is a huge and complicated system engineering, is

L. Zhang and C. Zhang (Eds.): Engineering Education and Management, LNEE 112, pp. 733–738.
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an urgent and realistic task, it is a world without end practice process. But nowadays, excluding the "science and technology" innovation could not find the scientific meaning of point blank, of course no occupational commanding elevation, it is the times is calling our ideological and political education work innovation and development must be combined with technological innovation. Ideological and political education innovation and innovation of science and technology is the combination of science and technology innovation to actively explore the ideological and political work under the condition of the characteristics and laws, open up new approach, explore new ways to further strengthen and improve the ideological and political work, thereby enhancing the sense of the times, strengthen the pertinence, effectiveness and initiative.

1 Science and Technology Innovation on Ideological and Political Education of the Opportunities and Challenges

Facing the technological change rapidly, we should make a careful study of the latest achievements of science and technology in-depth understanding of innovation of science and technology to the ideological and political education of the opportunities and challenges.

1.1 Innovation of Science and Technology to the Ideological and Political Education Opportunities

Innovation of science and technology to the ideological and political education opportunities, prominently manifested in four aspects: science and technology innovation for ideological and political education play a dominant role in opened up a new way. With the Internet as an example, if we make full use of the network platform for propaganda and public opinion, can draw on the advantages and avoid disadvantages, and constantly enhance the online propaganda influence and fighting capacity, to become the National Party and ideological and political work in the new position, become our external propaganda of new channels. Therefore, continuous innovation and development of network technology will inevitably become the ideological and political education play the leading new development space; science and technology innovation to enrich and develop ideological and political education content system. On one hand, the information network has greatly increased in the ideological and political education information, to overcome the traditional ideological and political education content is drab, the paucity of information on the problem; on the other hand, the network moral education becomes the new topic of Ideological and political education. The virtual network, free and open features, so that the network moral anomie phenomenon is relatively outstanding, such as hackers, network security has been seriously threatened. While law enforcement and technical barrier to guard against network security behavior always has certain limitation and lagging; science and technology innovation make the ideological and political education of leading role produced new change. As in the Internet interactive communication environment, the ideological

and political educators and educational objects position, identity, age is blocked, so that the exchange of both shorten the psychological distance, the exchanges between the two sides have more reality and immediacy, this will be helpful for the object of Ideological and political education in the equal exchange come very naturally to accept education the guidance, improve the effectiveness of Ideological and political education; science and technology innovation to improve the effectiveness of education. As the Internet with its fast search, processing and information transmission speed, the ideological and political education into a space-time unrestricted instant sexual behavior. Ideological and political education can also be dynamically grasp and understand education thoughts object changes, to develop targeted and effective ideological and political education, to the correct guidance of public opinion to guide the education object of thought and behavior of healthy development.

1.2 Science and Technology Innovation for Ideological and Political Education Challenge

Innovation of science and technology to the ideological and political education brings opportunity, also brought enormous challenge. Outstanding expression is in: the innovation of science and technology desalt the mainstream ideology and the dominant value orientation of dominant position. As a plurality of information network to the right information, neutral information or even false information are intertwined, which leads to the mainstream ideology and the dominant value orientation for the dominance of the desalination, even by the plurality of submerged. At the same time, the information network beyond space and time characteristic, breaking the state and region between the social system and ideology of constraint, easily lead to national consciousness desalt, the patriotism education challenge. Widespread negative cultural products and yellow culture, and also on the socialist ideology and collectivistic value orientation of dominant position to bring severe impact; science and technology innovation to weaken the education authority and leading role. Ideological and political education as the implementation of the national and social will an organized, planned and systematic education activities, authoritative source characteristics, and the development of information network and information equality, work characteristics, change of Ideological and political education the original authority source of the traditional position, weakening the ideological and political education authoritative and educators' leading role; science and technology innovation to weaken the educates' subjectivity. Ideological and political education from the perspective of educational objects, subject, is also a kind of dominant sex. In real life, people's behavior is behavior standard and social public opinion and the legal provisions of the constraint. But in the network world, people's identity, behavior, behavior can be hidden and change, people could conceal his true identity, to one or more virtual identity in the online activity and intercourse, but does not have to bear the corresponding responsibility. If things go on like this, will lead to social responsibility, legal idea is thin.

2 The Innovation of Ideological and Political Education Should Be Combined with Technological Innovation

2.1 *The Concept of Ideological and Political Education Innovation Should Be Combined with Technological Innovation*

“People's thought idea transformation is the transformation of all the pilot ", any reform and development is updated from the idea to begin with. Ideological and political education should also be breakthrough behind the conservative, old ideas, has a wide field of vision, active thinking, quick thinking and real-time response ability. The innovation of Ideological and political education is first of all the concept of innovation, continuous progress in science and technology conditions of Ideological and political education to establish the consciousness of science and technology is particularly important.

2.2 The Contents of Ideological and Political Education Innovation Should Be Combined with Technological Innovation

Innovation of science and technology will promote the ideological and political education innovation. Marx's theory of Ideological and political education is the basic theoretical foundation and powerful ideological weapon, is the core of Ideological and political education content, to achieve the contents of Ideological and political education innovation, must take Marx theory as the guide. Therefore, the contents of Ideological and political education innovation combined with technological innovation, one must first master the Marx doctrine of scientific world outlook and methodology, strengthen pair of Marx theory study, research, conduct propaganda and use, the Marx doctrine -- Deng Xiaoping Theory armed person, education person. Secondly, to enrich the content of science and technology progress, not only to strengthen the strategy of rejuvenating the country through science publicity and education, and to increase the content of Ideological and political education culture and the content of science and technology, the science popularization education ideological and political education as the new content, improve people’s scientific and cultural knowledge. To the development of science and culture knowledge of the function of Ideological and political education, ideological and political education in the education of science and culture, the dialectical materialism and historical materialism education more lively, more easily accepted by people, thereby greatly enhancing the ideological and political education of the attraction and persuasion.

3 The Ideological and Political Education Methods and Means of Innovation Should Be Combined with Technological Innovation

Deng Xiaoping thinks " at different times, in different conditions, different object, so the problem solving methods are also different." The ceaseless innovation of science and technology has changed people's learning and accepting knowledge and way of thinking. The "digital revolution" has changed the way we used to record and transmit knowledge symbol; the network so that we can share the knowledge and information; multimedia technology to text, data, image, voice integration to achieve the integration of graphic, these changes profoundly affect the ideological and political education methods and means, so the ideological and political education methods and means of innovation must be be combined with technological innovation, to improve its effectiveness.

Above all, want to rely on science and technology development constantly updated equipment education, make full use of scientific and technological achievements to realize the ideological and political education methods and means of innovation. The development of science and technology makes the world culture is becoming increasingly fierce, people's value idea multiplication, and personality is more prominent, self awareness. Therefore, if in the background of science and technology infusion or leading too obvious, people will feel their freedom of choice is restricted, easy to arouse the information to the resistance. Therefore, the ideological and political education should make full use of scientific and technological achievements to the mass media for the traction, set shape, sound, image, text in one, to create a certain atmosphere, the educators the intent and purpose hidden in the associated with the carrier, on the road without preaching, the physical but not stiff. The educational philosophy for education through the form of love to see and hear quietly into the educates heart, in their heart accumulated, so that the educators in intoxicated, pleasure, excitement, suggesting that such emotions unconscious access to education and edification, imperceptibly into the education condition. This will be the real technology into the field of the ideological and political education, play to the modern information technology and mass media effect, carry out rich and vivid form of Ideological and political education, to enable the broad masses in Ideological and political education of the strong social atmosphere, the ideological and political education of radiation to the family, extended to eight hours away, thereby expanding the field of Ideological and political education in the realm of ideology, strengthen the construction of coverage and penetration, the ideological and political education from the thought of the unidirectional flow into the interaction between subject and object, from the single "indoctrination" to "participation", in which people live, work, entertainment when consciously accept the ideological and political education, variable Sermons for the role change physical education law as the invisible education law.

Secondly, absorb and draw lessons from other emerging interdisciplinary theory and method, realize the ideological and political education methods and means of innovation. Modern technology of highly differentiated produced many branch disciplines and marginal discipline of modern science and technology,

highly integrated and produced many subject. In particular system theory, information theory, control theory, game theory dissipative structure theory, synergetic and the emerging discipline of generation and development, formed a systematic method, information methods, control method, structure function method, the model method and many other new methods of Ideological and political education is a comprehensive application disciplines, it should constantly absorbing new knowledge and methods to further enhance the effectiveness of Ideological and political education and adaptability. For example, chaos theory or "Butterfly Effect" not only for meteorology, science has great significance, but also for us to strengthen and improve ideological and political education has important enlightenment and draw lessons from action. It enlightens us must attach importance to advance education, should be good to people's state of mind on the basis of investigation and research to predict people's thought development trend, with good insight into people's ideological problems of budding, proper lead to do the ideological education and transformation work.

4 Conclusion

The methods of Ideological and political education and the method innovation and innovation of science and technology of combining ideological and political education, we should make full use of technical supervision, "leaving management education is weak and feeble." Comrade Jiang Zemin in moral education and management of the close relationship that: we must take the basic moral requirements in the relevant laws and regulations and the policy, in social management. Technical supervision is a kind of management method, it has the object of supervision heteronomy function, to the indisputable fact corroborating its immoral, illegal acts, "forced" to its start with a clean slate, Quecongshan, comply with ethical and administrative law. Technical Supervision for illegal, immoral business has inhibition.

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Corporate Governance and Audit Fees-Based on A-Share Listed Companies Data Analysis

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Abstract. This article uses A-share listed companies' data from 2006 to 2007, from the board size, board composition, management shareholding and independent directors in the proportion of all directors, etc., described the company's governance structure and the relationship between audit fees. Also, we analyzed corporate governance impact on audit fees. These results indicate that efficient corporate governance can not only control of the company's agency problems, but also to reduce audit fees charged by accounting firms.

Keywords: Audit Fees, Corporate Governance, Listed Companies.

1 Background

Audit expense, as the remuneration that charged when accounting firms providing professional auditing services for legal organizations, such as companies, and other organizations, embodies the supply and demand relation of audit services between accounting firms and companies. Whether Audit expense standards are determined reasonable, can directly or indirectly affects the independence of audit and the financial report of audit quality. Audit quality is the core problem in audit market. It relates to the fairness, consistency and legality of audit work and report. Therefore, the audit expense standards become the focus of wide interest recently. The research demonstrates that Audit expense is influenced by complexity of the business, the financial condition of a company and the characteristics of certified public accountants, etc.

Although the determination of audit expense standards is significantly affected by factors mentioned above, the corporate governance structure should also be taken into account. It is well known that some kind of separation between ownership and right of control in the property right structure is the typical features of modern companies. This also causes the relatively outstanding agency problems. In the view of Contractual Theory, the effective corporate governance structure can solve the agency problems and reduce the audit risk of certified public accountants. The audit risk reduction can lower audit expense. So the corporate governance structure has important influence on audit expense.

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2 Literature Review

In recent years, many exports and scholars were analyzed on the issue of the audit fees. From the beginning of eighties of the last century, it has begun the research for the audit fees. By constructing the multivariate regression model, Simunic analyses the influence factors on audit fee. The main influence factors include: risk and loss allocation mechanism, firm scale and its production function, etc. After nearly 30 years of development, the research on this problem has formed a comparatively mature field. Each experts according to regression analysis model of Simunic evolution and more hypothesis analysis from different angles, analyzed the factors affecting the audit fee.

Chen Ying, Zhang Jixun, Wu Xuan, based on the model with Simunic, discuses that accounts receivable turnover ratio and the size of listed companies has significant influence on audit fees; Yin Dequan, Song Yandang, with the breakthrough point of Certified public accountant changes, make a conclusion that CPA taken over use different standard for audit fees, which bases on the different types of company; Ezzamel、Johnson、Walker and Westergaard, based on the model with Simunic, show that charge-premium exists in small and medium-sized customers, but not in large customer premium.

3 Hypotheses and Data Analysis

3.1 Research Hypothesis

3.1.1 The Hypothesis of the Scale of the Board of Directors and Audit Costs

The Board of Directors of validity depends on the size and structure of the Board of Directors. Some scholars believe if the scale of General Assembly is too large will lead to organizational costs and the company would operate inefficiently, which is not conducive to corporate governance. And other scholars believe the larger scale of the Board of Directors can meet more needs of extensive management, which is very beneficial to corporate governance.

H_0: The size of the board has uncertainly relation with audit fee

3.1.2 The Hypothesis of the Duality of Chairman or Member and CEO and Audit Costs

According to agency theory, the separation between president and General Manager will increase the board's independence. The higher the independence of the board of directors is more the management is likely to oversee. The more likely to hire high quality auditors are, more likely to expand the scope of the audit. In both cases will result in increased audit costs. Based on the above analysis, we make the following assumptions:

H_1: The duality of chairman or member and CEO is in a negative correlation between audit fees

3.1.3 Large Shareholders Proportional Relationships with the Audit Costs

In General, the higher the proportion of shareholders is, the stronger its own supervision of offensive interest maintains. This subjective to pursue their own interests will reduce proxy conflicts in the companies. Therefore, the existence of large shareholders can help increase the efficiency of corporate governance. However, it is to be noted that, although the largest shareholder of governance can reduce company agent problem, but also poses major shareholders and small shareholders of conflict of interest. Thus, we propose the following hypothesis:

H_2: A large shareholding ratio and audit fees exist uncertainty relation.

3.1.4 The Relationship between Proportion of Independent Directors and Audit Fees

Under normal circumstances, we believe that a higher proportion of independent directors of the Board can reflect the independence of the board, thus, it could further regulate behaviors of governance, effectively suppress the random management, reduced the opportunities of to make mistakes in the financial reports, and lower the risks of material misstatement audit unit, audit costs may decline.

H_3: The relationship between the proportion of independent directors and audit costs is negative.

3.2 Data Selection and Sources

To ensure the significance and accuracy of research, using the two years 2006 and 2007 A-share listed company's annual report audit fees as the object of this study.

3.3 Data Analysis Model and Variable Description

According to the theory of the above analysis, and data for the filtering criteria that this article for 2006 and 2007, a two-year analysis of the year, taking A sample of company shares, and learning from traditional Simunic classic model analysis model, The following is the regression equation:

$$\ln Fee = \beta_0 + \beta_1 \ln DSH + \beta_2 DLDS + \beta_3 DSZJZ + \beta_4 DSCG + \varepsilon$$

Where: β_0 to intercept, $\beta_1 \sim \beta_4$ as the regression coefficient, ε for random errors,

The model design variables have the following meanings:
(1) Dependent variable:
LnFee-- audit fees for the natural logarithm form
(2) Test variables
Table 3-1 Statistics for the test variables:

Table 1. Meaning the control variable

Symbolic	variable name	variable meaning
lnDSH	The size of the Board	he Board of the natural logarithm of the number of forms
DLDS	independent Director scale	Independent Director of the total number of the Board of Directors
DSZJZ	the duality of chairman or member and CEO	for the chairman to take part in the shareholders "1", not part-take "0",
DSCG	the percentage of shares hold by board members	account for the total number of board members holding company the ratio of number of shares

3.4 Data Analysis

3.4.1 Sample Data, Descriptive Statistics Analysis

By filtering out of a list of sample data, do the following descriptive statistics analysis, see table 3-2.

According to table 4-2 as the descriptive statistics variables, we can see the following behavior:

(1) In 2006 and 2007, accounting firms charged an average of 469,518.31 Yuan listed company audit fees, but vary greatly between different companies (standard deviation 325,786.48).

(2) Nearly 10 directors in Board of directors on average (mean of 10.2666).

(3)Independent Director System Formalism (average percentage of independent directors to 33.57%, little difference between the company, just to meet the provisions of the CSRC), and some companies have not properly followed the relevant provisions of China Securities Regulatory Commission (independent Director Scale minimum is 0).

(4) The Board of Directors holding overall level is not high (average of 9.74%); however the different are between different companies, the highest proportion can reach 79% of the company's total share capital.

Table 2. Descriptive statistics analysis table

Project	maximum value	minimum value	average	the standard deviation of the mean
Fee	4351629.60	100000	469518.31	325786.48
DSH	16	6	10.2666	2.1618
DLDS	0.5	0	0.3357	0.0519
DSZJZ	1	0	0.12	0.31
DSCG	0.79	0.0117	0.0974	0.2295

3.4.2 Multiple Regression Analysis of Sample Data

We use multi-regression analysis to test the hypotheses according to the collected data.

Regression model:

lnFee = 8.880532 +2.104564 lnDSH +2.205239DLDS-0.782268DSZJZ-53.7976DSCG

Here is some of the major process of analysis and conclusions. See Table 3-3:

Table 3. Regression results

Model	standardized	value T	value Sig
Constant	8.880532	3.083142	0.0049
LnDSH	2.104564	2.332825	0.0280
DLDS	2.205239	0.631888	0.5332
DSZJZ	-0.782268	-1.637821	0.1140
DSCG	-53.7976	-2.164574	0.0402

The following is a multiple regression analysis results of explanation:

(1) The table shows that board size and audit fees at 1% level a significant positive correlation, when the number of directors increased by 1%, the audit costs 2.104564. Shows number of directors on the audit fees of listed companies has a very important influence, and changes in the same direction...

(2) The duality of chairman or member and CEO and the audit costs are negatively correlated in the 10% level.

(3) Table shows the proportion of ownership of the board 1% increase in audit fees relative increase 53.7976, the Board ownership and audit fees than the 1% level in a significant negative correlation. So in the lower range than ownership of the board, the more can reduce treatment costs, helps reduce audit costs.

4 Conclusions

(1) By the model, it shows that the conclusions and hypothesis 0 is positively related to changes in direction. Within a certain range, the larger board of directors is, the company's accounting information may be more, and the internal control system settee up by companies may also be more complex. Auditor control testing and substantive tests' time and energy will be more and charges will be higher.

(2) Through the model, it shows that the conclusion is consistent with the hypothesis 1. The separation between President and General Manager increases the independence of the board. Such high independence demands higher audit quality. It is likely to expand the audit scope, increase the audit process, resulting in increased audit costs.

(3) Proved by the model, the conclusion that hypothesis 2 is a positive correlation. To some extent, increasing the ownership of the board can enhance the operation management of the majority shareholder of the company's supervisory role; give the board a stronger sense of responsibility to improve the efficiency of corporate governance, reduce audit risk, thereby reducing audit costs.

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Assessment of Technology Economy and Management Doctoral Programs in China: Ph. D supervisor

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Abstract. To better understand the national comprehensive situation of the construction of doctor Programs provides empirical data and reference information, using internet-based survey data of Ph. D supervisors (211) of Technology economy and management Doctoral Programs in China, including the number, age structure, education structure, gender structure and Journal articles number etc., this paper assesses the quality of 37 Doctoral Programs in China from PhD supervisor with addition-multiplication hybrid Synthesis. The results show some units having master program do not give further education and research provide strong support for echelon of talent, the construction of doctoral programs nationwide do not produce a corresponding scale, and institutions with engineering background superior to finance economics colleges.

Keywords: Technology economy and management, Doctoral programs, Supervisor, Additive synthesis, Multiplicative synthesis, Addition-multiplication hybrid synthesis.

1 Introduction

The significance of doctoral education is to develop high-tech, innovative talents for a country, and the assessment of Doctoral Programs is for effective supervision of discipline construction and postgraduate training work, to consolidate and constantly improve the quality of postgraduate education, ensure the healthy and sustainable development. Raymond Hughes (1925), the President of Miami University, first unveiled doctoral prelude of the evaluation [1]. Attach great importance to this world, especially the U.S. government, 80 years almost every five years a nationwide survey of doctoral quality and evaluation [2-7]. Since 2005, Academic Degree Commission of the State Council of China decided to periodically evaluate doctoral programs. Some scholars also have investigate and assess from discipline, such as Clinical, Counseling, and School Psychology Doctoral Programs[8-10].Chinese Scholars have proposed a national assessment of doctoral proposal from the historical evolution of the evaluation methods in the Quality Assessment of American Doctor Program[11-13] and the NRC rankings of quality doctoral experience[14].

This paper choose supervisor of Technology Economy and Management Doctoral Program to discuss the development and construction of the discipline with

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Chinese characteristics. This paper discusses it from three aspects as: 1) Survey of PhD supervisor of 37 doctoral Programs in China, 2) Assessment of Doctoral Programs in China form Ph. D supervisor with Addition-multiplication hybrid Synthesis, 3) Some experience and a conclusion.

2 Survey of Ph. D supervisors

By using network, this paper detailed survey of supervisors of all 37 doctoral programs in China, mainly collected information of them such as the number, age structure, gender structure, education structure, paper presented situation and the research direction or fields so on.

According to the results of the survey, a total of 211 doctoral supervisors (Table 1) are in Technology economy and management Doctoral Programs in China. Only 197 supervisors found out the date of birth, accounting for 93.84 percent of the total. The average age of them is 51.37 years, the biggest 79, and youngest 37. As we can see that the age of the tutor concentrated in 43-54 years old, including 46-48 years have 59. Sex ratio is 176:35 and the ratio of instructors with doctorates is 74.5percent.

We query and statistics papers of all the supervisor, since 2005, published in journals and conference (in Chinese) in the Chinese Journal Full-text Database

Table 1. Supervisor number in Doctoral Programs

No.	Univ.	Num	No.	Univ.	Num
1	HHU	22	20	SCU	5
2	DLUT	20	21	LNU	4
3	CQU	13	22	THU	4
4	HIT	12	23	SWUFE	4
5	TjU	10	24	BJTU	3
6	NCEPU	8	25	FDU	3
7	JLU	8	26	JNU	3
8	HNU	7	27	NJU	3
9	WHUT	7	28	DBUFE	2
10	XJTU	7	29	HZUST	2
11	FZU	6	30	TJUFE	2
12	HUT	6	31	XMU	2
13	TJU	6	32	ZUEL	2
14	WHU	6	33	ZSU	2
15	ZJUT	6	34	NKU	1
16	RUC	6	35	SHUFE	1
17	GSCASS	6	36	ZJU	1
18	HRBUST	5	37	CSU	1
19	SHJTU	5	Total		211

(CNKI). Search range in two ways: one is in all journals, another is in core journals. Among total of 9026 papers published, 3835 are in core journals, core ratio is 42.49 percent. There are 12 units more than the value of the core. In order to introduce the paper index with in comparability in assessment, average number of different units (articles/person • years) also be calculated, for an average of 7.17.

2.1 Index Selection and Process Based on the Investigation

Combined with the previous online survey, four indicators were selected (number, age, education, paper) to evaluate the doctoral programs with addition-multiplication hybrid Synthesis. Due to the different dimension of different indicators, in order to comprehensive analysis must be standardization before use. Processing dimensionless formulas for the data:

$$\text{Positive index: } X^* = \frac{X_i - X_{\min}}{X_{\max} - X_{\min}} \tag{1}$$

$$\text{Reverse index: } X^* = \frac{X_{\max} - X_i}{X_{\max} - X_{\min}} \tag{2}$$

Where, X*is the value of dimensionless index, Xi is the primitive statistical data, and Xmin, Xmax respectively is the minimum and maximum of data.

Number indicator (X1) is supervisor number of unit. As the number differ greatly, the average relative to the evaluation of this article does not make sense, comparability with other indicators is not strong, at the same time, the greater the number indicated that the greater doctoral program of scale, and highlight the doctoral level of inputs, so the indicator treat as a positive index.

Age indicator (X2) is the average age of all supervisor of unit. Age index is selected to display the deviation between the average age of supervisors and the maximum, the higher the degree of deviation shows young tendency obviously, more conducive to the development of doctoral programs. It is the only one reverse index treated with formula 2.

Paper indicator (X3) is the average value of education be quantified, also a positive index. The more the supervisor, the probability will be bigger which the number of paper published in the unit, if using paper number as indicator would cause deviation of index value too large. So articles/person • years as the index has more comparable and will reduce the impact of supervisor number to the evaluation.

Education indicator (X4) is above as the average paper number of different units, the third positive index. Survey results show that a high proportion of supervisors with doctoral degrees (74.5%), and a certain proportion of supervisor who conducted postdoctoral research. Quantification of the education degree is in the following methods: (experts with special government allowance, post doctor, doctor, master and the following)----(5 points, 4 points, 3 points, 2 points, 1 point), if he has a dual role to take "The High Principles."

2.2 Evaluation Method

AS we did, four indicators selected above have some correlation more or less, so an addition-multiplication hybrid Synthesis is used as follow:

$$f_i = (\sum a_i * x_i + \sqrt[4]{\prod x_i}) / 2, i = 1, ..., 4 \quad (3)$$

Where, ai is weight of index, xi is the value of dimensionless index, {a1, a2, a3, a4} = {0.392, 0.201, 0.299, 0.108}.

2.3 Evaluation Results

According to the previous indicator approach to calculate the value of each index (Table 2), while the order of the table is the order by using additive synthesis evaluation. Then, in order to compensate for the lack of different methods of evaluation, this paper using three evaluation methods were compared (Table 3), the table lists only the top 16.

After comparison, we see that the top six is HHU,CQU, DLUT, TJU, NCEPU and HNU, they comprehensive strength remain far above other institutions. Simultaneously, having national key disciplines, XJTU and THU was ranked the second group, and even the use of multiply composite analysis, THU ranked in 19th. Above shows that after years of construction and development of the doctoral programs undergone great changes, and some units come from behind, while some agencies gradually decline.

Table 2. Data sheet for additive synthesis of evaluation

No.	Univ.	X_1	X_2	X_3	X_4
1	HHU	1.000	0.672	0.770	0.657
2	CQU	0.571	0.678	1.000	0.784
3	DLUT	0.905	0.600	0.440	0.600
4	TJU	0.429	0.726	0.880	0.660
5	NCEPU	0.333	0.655	0.948	0.750
6	HNU	0.286	0.653	0.858	0.943
7	HIT	0.524	0.587	0.544	0.400
8	HZUST	0.048	0.762	0.958	0.600
9	WHUT	0.286	0.748	0.529	0.943
10	XJTU	0.286	0.705	0.479	0.857
11	JLU	0.333	0.682	0.393	0.825
12	NJU	0.095	0.706	0.630	1.000
13	SCU	0.190	0.567	0.606	0.900
14	THU	0.143	0.536	0.793	0.450
15	ZJUT	0.238	0.639	0.561	0.500
16	HUT	0.238	0.722	0.350	0.700
17	HRBUST	0.190	0.667	0.365	0.840
18	SHJTU	0.190	0.635	0.373	0.840
19	FZU	0.238	0.746	0.207	0.900
20	TJU	0.238	0.726	0.285	0.600

Table 2. *(Continued)*

21	WHU	0.238	0.774	0.196	0.720
22	GSCASS	0.238	0.533	0.214	0.700
23	CSU	0.000	0.762	0.608	0.000
24	LNU	0.143	0.839	0.061	0.900
25	ZSU	0.048	0.643	0.401	0.600
26	RUC	0.238	0.671	0.073	0.700
27	ZJU	0.000	0.738	0.362	0.600
28	NKU	0.000	0.500	0.479	0.600
29	JNU	0.095	0.619	0.207	0.600
30	SHUFE	0.000	0.881	0.104	0.600
31	FDU	0.095	0.579	0.367	0.000
32	XMU	0.048	0.714	0.117	0.600
33	ZUEL	0.048	0.690	0.104	0.600
34	BJTU	0.095	0.333	0.186	0.800
35	SWUFE	0.143	0.512	0.126	0.200
36	TJUFE	0.048	0.536	0.168	0.300
37	DBUFE	0.048	0.512	0.000	0.600
	Average	0.224	0.655	0.425	0.645

Table 3. Comparison of evaluation results (TOP 16)

No.	Add-Syn	Multi-Syn	Hybrid-Syn
1	HHU	HHU	HHU
2	CQU	CQU	CQU
3	DLUT	TJU	TJU
4	TJU	NCEPU	DLUT
5	NCEPU	HNU	NCEPU
6	HNU	DLUT	HNU
7	HIT	WHUT	WHUT
8	HUST	XJTU	XJTU
9	WHUT	JLU	HIT
10	XJTU	HIT	JLU
11	JLU	SCU	SCU
12	NJU	ZJUT	NJU
13	SCU	NJU	HUST
14	THU	HUT	ZJUT
15	ZJUT	HRBUST	HUT
16	HUT	SHJTU	THU

3 Conclusion

Survey shows that the discipline of education or very uneven: 1)157 units having master program do not give further education and research provide strong support for echelon of talent, and the construction of 38 doctoral programs nationwide did not produce a corresponding scale, 2) The development of existing key disciplines is unfavorable, institutions with engineering background superior to finance economics colleges, 3) Some institutions teachers echelon lean, in this investigation nearly half of them less than 5,even only one existence such as ZJU,NKU, SHUFE and ZNU.

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Promote the Development of Professional Education in Military Academies to Meet the Needs of Education Transformation

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Abstract. With the steady progress of education transformation in military academies, transformation from academic education to professional education has made positive progress. In the implementation of professional education, we should grasp the connotations of professional education, innovate the teaching mode, set up a suitable curricular system and develop faculty members that can meet the demand of professional education to attain coordinated and sustainable development of professional education and academic education.

Keywords: Military Academies, Professional Education, Education Transformation.

1 Introduction

Transformation from academic education to professional education in military academies is to meet the demand of new revolution in military affairs. It is an important measure to scientifically integrate the limited educational resources so as to intensively and efficiently run a school on a large scale. It's also the necessary way to accelerate the training of highly qualified military personnel. Therefore, it has great significance for promoting the development of professional education to grasp the characteristics of professional education, consummate professional education system and construct a new military personnel training system.

2 Connotations of Military Professional Education

Based on higher (or secondary) academic education, professional education of military academies is directed by the demand of post requirements and focuses on the professional ability training with the distinct features of military professional education. Its connotations can be summarized as:

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2.1 Military Professional Education Is a Vocational Education for National Defense

Military qualified personnel are not ordinary talented people. As the main body of national defense, military forces is a special group. That determines that soldiers are a special occupational group. They have special responsibilities in the protection of national security. Therefore, the education they receive to fulfill their duties has the unique professional traits.

2.2 Military Professional Education Is an Ability Education to be Qualified for a Post

Officeholding means being qualified for a certain post. Its significant quality is that one can always find an effective solution to a new situation or a new problem and fulfill his duties. To achieve this goal, professional education focuses on the generation and application of professional abilities as well as the instruction of knowledge and the accumulation of qualities.

2.3 Military Professional Education Is an Education of Specialist Knowledge for a Post

The educating course of an officer (or a sergeant) includes academic education stage and continuing education stage. The aim in academic education stage is to enable the trainees to develop their personalities, knowledge, senses and sensibilities harmoniously and form good comprehensive qualities while professional education aims at specific post and distinct specialities. Therefore, professional education is a deep-processing education on the basis of academic education to train specialists.

2.4 Military Professional Education Is a Lifelong Continuing Education

Professional education in military academies builds on higher academic education. It is a continuing education to help military officers (or sergeants) to quickly update their knowledge and improve their post competencies and post transfer capability. Therefore, professional education in military academies has not only the properties of military vocational education, but also the properties of continuing and lifelong education. It is a new form of education in the development of education.

3 Characteristics of Professional Education in Military Academies

The purpose of professional education is to enhance diathesis, pursue innovation and upgrade trainees' ability. Characteristics of professional education mainly include:

3.1 Outstanding Military Occupation

The purpose of implementing post professional education is to reinforce national defense and maintain national security. Military property is the soul of professional education in military academies. Professional education in military academies should always embody the military occupational characteristics, keep trace on the development of military reform and maximally adjoin to the practice of troops. So the investment in education can be directly and quickly transformed into operational capability.

3.2 Outstanding Post-Directivity

Based on higher academic education, professional education is a specialist education. With outstanding directivity, the trainees have specific post requirements. Therefore, military professional education should insist on being guided by the requirements of the training subjects, focusing on the development of trainees' post capability.

3.3 Outstanding Practice-Orientation

Since the professional post education aims at the trainees' post capacity, it is not adequate to just pay attention to the update of knowledge in such an information age. In the implementing of professional education, special attention should be paid to the pre-practice session and the leading role should be given to practical teaching. Emphasize the increase of application ability and practice ability and promote the rapid formation of trainees' post competencies.

3.4 Outstanding Holistic Integration

Professional post education is not isolated. From vertical perspective, it is systematic and hierarchical. From lateral perspective, it coexists with academic education. From three-dimension perspective, it closely links with regular higher education, scientific research institutes, departments and armed forces. From

individual perspective, military personnel are also the combination of knowledge and ability, theory and practice. Therefore, when planning professional education, we should think systematically, make overall plans and take all factors into consideration, integrate the education resources scientifically to strive for the maximization of efficiency.

4 Significance of Implementing Professional Education in Military Academies

4.1 Implementing Professional Education Is a Great Innovation in the History of Chinese Military Academies

The development of Chinese military academies can be divided into three stages: The first stage is from the founding of military academies to the late 1970s. During this long period, although military academies offered a small amount of academic education, the overall situation displayed a strong military professional education color. After the Third Plenary Session of the Eleventh Central Committee Sessions, military academies entered the second phase. During this period, academic education and professional education coexisted at the same time. The third stage is from l999 when the fourteenth meeting of military academies was held. Professional education began to take shape. In the fifteenth meeting of military academies, separating professional education from academic education was put forward, which confirmed the important status of professional education in Chinese military academies. A new military academies system was set up since then. It is an important breakthrough and a major innovation in the history of Chinese military academies both from theoretical and practical points of view.

4.2 Implementing Professional Education Is a Great Move to Promote Military Transformation with Chinese Characteristics

The rise of a new revolution in military affairs has posed a severe challenge on all aspects of Chinese army construction. The field of education and training bears the brunt of transformation. Separating professional education from academic education in military academies means meeting the challenges of new military revolution actively and consciously adapting to the requirements of military personnel for the future information war. Implementing the professional education is an important part of military transformation in military academies. It has a crucial significance for promoting the military transformation with Chinese characteristics.

4.3 Implementing Professional Education Is the Necessary Way to Train High Quality Military Personnel

In present society, new technologies come out thick and fast everyday. The speed of knowledge innovation is faster and faster. At the same time, high-tech plays a more and more important role in military weaponry. Knowledge and talented personnel become the dominant factors in combats. The one-education-for-life practice does not fit for modern science-and-technology progress or requirements of social development any longer. It does not fit for the developing requirements of weapons and equipment either. In addition, military field is full of creation. A rigid military commander can't win on the battlefield. Learning and practicing are very important for developing creativity. It is not enough just relying on several years of basic academic education. We should rely on the post professional education based on practice to train high-quality military personnel, which is also the common practice of the world's major military powers.

5 Some Issues to Be Paid Attention to in the Implementation of Professional Education

It is a complicated systematic project to promote military professional education. It involves all aspects, levels and links of military construction. Some issues should be grasped:

5.1 Adapt to the Characteristics and Innovate Philosophy of Professional Education

The change of concept is fundamental. With the difficult task in the transformation of military academies, not having new concept means not having new idea or new development. The teaching philosophy of academic education since the 1980's doesn't have obviously military occupational characteristics. Professional knowledge and skills required for post are paid little attention, which directly leads to the weak working capacity of graduate students. The implementation of professional education provides a very good platform for establishing new concepts of professional education such as people-oriented concept, for-the-post concept and focus-on-capacity concept. And these concepts will guide the comprehensive construction of military academies.

5.2 Set the Target of Personnel Training Scientifically Based on the Demand of Post Qualifications

The personnel training design should be created according to the nature and characteristics of teaching activities of post professional education. Disassemble the training objects layer by layer; scientifically set the targets of personnel

training and transform them into the course teaching objects in the personnel training project.

5.3 Set Up a New Curriculum and a New System of Teaching Content, Highlighting the Characteristics of Professional Education

Distinctive curriculum and teaching content system should be established in professional education.

1. Create a professional curriculum system

Professional courses are those that closely related to certain post. The new professional education curriculum system should generally be composed of three types of courses: 1) the vocational courses pointing to the ability formation; 2) military science courses adapt to the development requirements of the command posts; 3) the implicit courses needed to form a correct professional attitude and professional qualities.

2. Optimize the educational content system.

Professional education needs to meet the requirements of information warfare and weaponry development. New tactics and training methods should be absorbed in time. New theories, knowledge, and techniques should be constantly added in the teaching process. Theoretical depth and scientific content should be increased continually to reflect the advantage, effectiveness and comprehensiveness of teaching content.

3. Strengthen the pertinence of teaching content.

Strengthening the pertinence of teaching content is the key to the innovation and consummation of professional teaching content system. Clear differences should be specified between different training levels and training interfaces should be given attention to. As the training time is short and the teaching content is new, post requirements military characteristics should be highlighted. Emphasis should be places on the practical ability of the trainees.

5.4 Focus on the Generation of Professional Ability and Continually Innovate Teaching Methods

The content of professional education should have a clear focus. In professional education, highlight the practical teaching, increase the professional operation, scientific experiments and comprehensive exercises. Strengthen the simulation and the practical post training in order to achieve the transformation from knowledge-based education to competency-based education. Therefore, we should focus on the generation of professional ability and continually innovate the teaching methods such as learn-guiding model, researching-and-discussing model, case-based teaching model. Other teaching methods can also be used in the professional education to inspire the divergent thinking and enthusiasm of trainees, such as teaching-and-viewing model, manipulation exercise model,

simulation training model, competition model and designing seminar model, etc. They are very useful in developing the trainees' awareness of innovation and innovation capability.

5.5 Strengthen the Construction of Faulty Members to Meet the Demands of Professional Education

The implementation of post professional education has changed the functionality and properties of the original type of education. Teachers are faced with new teaching task, new teaching objects. Teaching content and methods have also changed fundamentally.

At present time, there is a large gap between the actual teaching team construction in the military academies and the requirements of professional education. Ideology lags behind the development of situation. The importance of professional education is not paid enough attention to. The roles and the characteristics of professional education lack deep understanding and grasping. New knowledge upgrades slowly. Practice experience, especially military practice experience are lacking seriously. In order to change this situation and ensure the quality of professional education, four measures should be taken. First, establish a strict teacher selection system. The selected teachers should be helpful to improve the teaching staff structure and meet the needs of professional education. Second, set up a new communion system between the academy teachers and the army officers in order to enrich the faculty practical military experience. Third, adopt appointing-or- eliminating system. Fourth, further enrich the teacher training system which includes implementing post practicing system and teacher mobility training system.

6 Conclusion

It is a tough task to promote the transformation of military academy education from academic education to professional education. It must follow the rules of professional education, optimize the allocation of education resources, meet the demand of post requirements and construct a teaching and talent training system that meets the characteristics and requirements for professional education. Implementing the transformation of military academies from academic education to professional education is an inevitable choice as educational practice comes into a new phase.

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The Analysis of SNS of China's College Students

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Abstract. SNS is particularly popular with college students. Compared with western students, we found several distinctive features: the online social networking has become the most important network behavior among college students; male college students on network of socially active were significantly higher than female students; lots of social networking has being replaced by games; value orientation deviated from the mainstream, "grassroots" celebrity-led social networking. Clarifying the social network of the characteristics of college students, not only can guide them to develop the scientific social networking habits, but also can effectively prevent them from social networking addiction.

Keywords: NS, college students, social networks, characteristics.

1 Introduction

The full name of SNS is Social Networking Services, specifically refers to help people building social networks of Internet application services .Reports of InSites Consulting shows that at least 72% of Internet users have become a social networking Web site, the total number is up to 9.4 million.

2 Social Networking Has become the Most Important Network Behavior of College Students

In recent years, with the popularity of the Internet and development in the country, social networking has become the most important network behavior of young Internet users, especially college students.

CNNIC, "26th China Internet Development Statistics Report" shows that, to June 2010, Internet users use social networking sites to reach 210 million, and the use rate of Internet 50.1%. Half of the year 34.55 million of new subscribers were added, an increase of 19.6%. Behavior of several major social networking is common now in Internet users: from December of 2009. To June of 2010, in all kinds of network application usage rankings, social networks occupied the forth in the top of ten. Among them, the social networking network utilization reached 50.1%, becoming one of very important network behavior to the youngest Internet users, especially college students.

L. Zhang and C. Zhang (Eds.): Engineering Education and Management, LNEE 112, pp. 759–762.
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Data show that China's largest student-oriented social networking site, the school network now has 2200 universities, more than 18 million users in the college, 880 million active users. The school network is quite a rage. In college students, penetration rate in the university campus network account up to 90%, 74% of users invited by their friends into "school." Every time the Internet will be landing on the school network and regular users of 30% each; 47% users used half an hour to an hour each time to concern school network, 33% users controlled in ten minutes or less; 63.5% users prefers mobile phones to log and 21.5% of them have been into habit, and even plays "school" in classes;44% users said that the school network was an access to find their old friends; More than half of Internet users often browsed the status of their friends in “school”, each ratio of leaving messages, searching old friends and updating their status is 27%.

3 Male Students Was Significantly Higher Active in Social Internet Than Female Students in Collage

Survey of CNNIC showed that sex ratio of Internet users was 54.8:45.2 in China, the male population accounted for nearly 10 percentage points higher than women, female Internet penetration was relatively low. Male Internet users on network of social active were significantly higher than females. Most Internet users are young people, college students is a vital force. As the male students are more independent and more risking, they more are in pursuit of social participation, stimulation and sense of achievement; they perform more positive and open. So they use social networking as tools and chat with strangers more often than women, they have more friends and often contacts with them. Besides that, they also prefer to team up on social networking sites, the usual communication methods are online games. In contrast, female college students pay more attention to use of security and stability, reflect more emotionally, they have a strong sense of distrust with a lot of false information on the network, and thus they more inclined to chat with colleagues, classmates, relatives, family and friends .In addition, women participates more shallowly in social network, they are more like activities in the circles on social range and overlapping social the social networking site, social networking as a way to kill time; while men in a deeper network will keep in touch with more friends, make more friends, they treat social networking as a communication tool, rather than simply a means to kill time.

According to a report of comScore Study Company, social networking sites was attractively appealing to women. In May 2010, 75.8% of female Internet users have visited social networking sites, only 69.7 % of male Internet users visited social networking sites.

Women used social networking sites and times are higher than men. Although the proportion of women in the social networking site users only 47.9%, the number of pages they visited and the time they spent on social networking sites, respectively, accounted for 57% of the total Web access and 57% users of the total length of stay.

Women spent more time for social networking sites than men, women visited social networking site average monthly is 5.5 hours, while men is 4 hours.

The report noted that female Internet users of in Latin America and North America social networking sites was the highest in all female users, which were respectively to 94.1% and 91%. Then Europe and Asia Pacific, the total number of female users in Europe account for 85.6%, while the Asia-Pacific region compared to 54.9%.

4 The Network of College Students Have Serious Tendency of Games Social

SNS is a core as social networking, but in our country, as the young students are the main body online on social networking, they have the most avant-garde concepts and they also have a lot of time, most social networking sites chosen to retain the user through the game to enhance the viscosity of users.

Small games and other entertainment have filled with the SNS since 2010, and even become a trend. The place of friend's status was replaced by a variety of dynamics games, more and more game invitations appear, and if you do not accept that, there will be much more.

With the popularity of the game, people tend to forget the original purpose of the SNS, had a dependency on games. Social gaming as a way to attract new users get users to pay attention to the current stimulation, and the line is more popular content shared by more experienced users, at the same time, virtual goods has become one of the most profitable social networking types of income-generating way.

Indeed, SNS users may feel fresh on games and third-party applications, but this is contrary to the original intention of SNS. Meanwhile, SNS also provides us with a new subject: the younger generation, especially college students of SNS addiction.

In other countries, as the social network game is not the main stream, foreign students demonstrate a pure SNS addiction. There is an experiment, 200 students at the University of Maryland were requested to stop using all social tool such as mobile phones 24 hours, then found that many students appeared some withdrawal symptoms, such as desire, anxiety, and absent-minded work and study. Susan Moeller is a journalism professor in the University of Maryland, is also a project leader of the study. He pointed out that many students felt lost internet and mobile phones, just as lost friends and family. Moeller said that students complain about that they could do nothing without mobile phone messages, instant messaging, e-mail and Facebook.

5 Value-Oriented Away from the Mainstream, "Grassroots" Celebrity-Led Social Networking

"Grassroots" celebrity dominate the social network the in China, Internet users concern such social media stars over the real star. Most of these "grassroots" stars

are famous for hype, and have no content. They make their own from the "grassroots" to celebrities through economic means and operations teams. There is no history of struggle, no hard to pay. To be famous, operations teams think hard for these "grassroots" celebrity to raise to distinction, the contents are vulgar, kitsch, which is far away from the mainstream culture of our country. The resulting problem is that more and more college students like to publish negative comments on the network, About 62% people said they were more willing to share negative comments, while the ratio in global is 41%.Values and future development of students will be inevitably affected.

The features of social networking sites make it rapidly development. First of all, social networking sites can be considered as a synthesis of Internet services, which can provide many Internet services, combined with the majority of information is through second filter, therefore, a higher quality of information to enhance the user experience; Second, the social networking site to provide information between friends, users concern their friends will increase the social networking sites for adhesion; Finally, the social networking site is based on social interpersonal communication theory, this social interaction can help its spread in a wide range of groups. We could expect that with the development of mobile Internet, social networking applications will be widely used. Because mind of college students are not yet mature, a sense of belonging problems, social responsibility issues and vanity issues will be appeared in the using of SNS. We should strengthen network of literacy education on students, and help students establish healthy social networking concept. As the main responsibility of the college students, University should actively promote the psychological intervention and positive guidance to college students. Meanwhile, national regulatory authorities should clear the vulgar content of social network, making social networking space clean. Social networking operating companies make a profit at the same time to actively assume corresponding social responsibility, together with national regulatory authorities, purifying the social networks, making effort to help students benefit from it.

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Teaching Design on Training Complex Cognitive Skills Based on Engineering Drawing

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Abstract. Engineering drawing is an essential technical course, which has the character of mating theory and practice, It highlights the students' practical skills and requires students to cognize engineering and designing. The paper provides an overview description of the four-component instructional design system (4C/ID-model), and gives an example for training complex cognitive skill. It discusses the structure of training blueprints and four interrelated components for complex training: (a) learning tasks, (b) supportive information, (c) just-in-time (JIT) information and (d) part-task practice. Based on the comparative testing vocational skill, the results shows that the performance of learners who take the 4C/ID-mode (class B) are superior to the ones' who take the conventional teaching modeling (class A) in terms of grades and workload.

Keywords: Cognitive skill, 4C/ID-model, Vocational college, Instruction design.

1 Introduction

The four-component instructional design system (4C/ID) developed originally by van Merrienboer (van Merrienboer, J.J.G. 1990)[1] and others in the early 1992s (van Merrienboer, J.J.G., Jelsma, O., & Paas, F.G.W.C. (1992)) [2]. The complete design system and its psychological backgrounds are described in van Merrienboer (1997; see also van Merrienboer & Dijkstra, 1996, for its theoretical basis [3, 4]), in 2002, Van Merrienboer, J.J.G. Richard E. Clark. Etc present a description of the four blueprint components that are the basic building blocks for the moderately complex skill searching for relevant research literature[5]. In China, Professor Feng (1998) concludes the procedure of acquiring cognitive skills is summed up in three stages, such as archetypal orientation, operation and internalization[6]. Professor Pi (1997) proposes that framework for acquiring cognitive skills is included with knowledge acquisition, translation & consolidation and migration & application[7].

Recently, some papers about practical teaching of engineering drawing also are published, such as the development of lathe-like foam cutting machine and application in practical teaching of engineering drawing (GUAN Qiao-Juan, 2009)[8], conducting practical project in education for engineering drawing (HU Lin, 2010)[9]. The paper discusses that the teaching design based on 4C/ID-model in vocational college and a description is presented of the four blueprint components that support practical learning.

L. Zhang and C. Zhang (Eds.): Engineering Education and Management, LNEE 112, pp. 763–769.
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2 Theoretical Foundations

4C/ID-model focuses on the task-specific constituent skills rather than on knowledge types or context, its four blueprint components (4C) includes (a) learning tasks, (b) supportive information, (c) just-in-time (JIT) information, and (d) part-task practice. Complex learning is always involved with achieving integrated sets of learning goals-multiple performance objectives, Figure 1 provides a simple description of the constituent skills that make up the complex cognitive skill. A well designed training program for complex learning will not aim at trainees' acquiring each of these constituent skills separately, but will instead try to achieve that the trainees acquire the ability to use all of the skills in a coordinated and integrated fashion while engineering designing.

As for cognitive skills, an overall of the 4C/ID-model can be decomposed into two basic constituent skills, namely non-recurrent skills and recurrent skills[10]. For non-recurrent skills, the learner's behavior process is guided by cognitive schemata that steer cognitive strategies, its learning processes are related to schema construction. Non-recurrent aspects of a complex skill is coincident with supportive information, from the design of training, the learners should be encourage to intentionally abstract information from concrete experiences, and connect newly presented information to what they already know; For recurrent skills, the learner's behavior process is driven by rules that link particular situation to particular actions, Recurrent aspects of a complex skill is coincident with JIT information, from the design of training, a quantity of practice and imitating working is provided to he learners and eventually leads to automated rules that directly control learners' behavior.

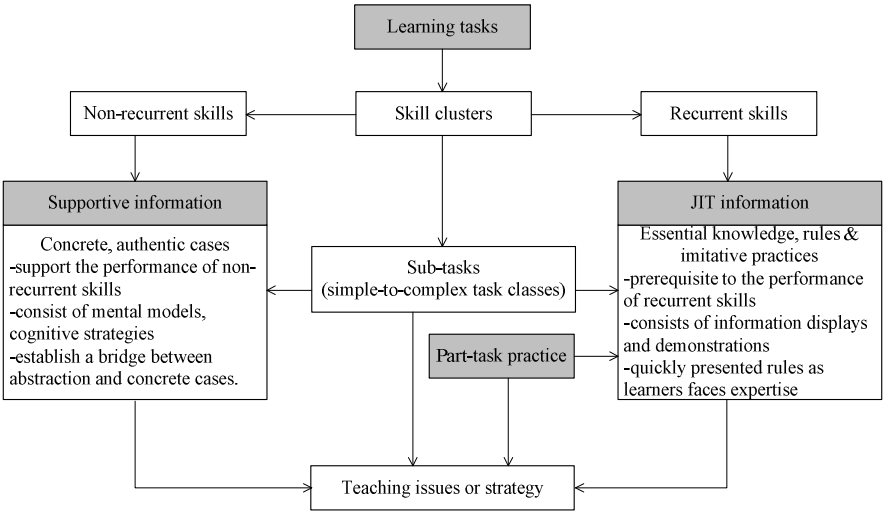


Fig. 1. The Framework of Teaching Design based on 4C/ID-model

3 Cases Design

In 4C/ID-model, the complex cognitive skills always are integrated into interrelated components which are based on the four categories of learning processes that are central to complex learning.

Learning tasks. Learning tasks provide learners with concrete, authentic and whole-task experiences in order to promote schema construction or reconstruction for non-recurrent skills and rule automation for recurrent skills. The teaching method primarily aims at encourage learners to construct schemata through mindful abstraction from the concrete experiences that presented in learning tasks.

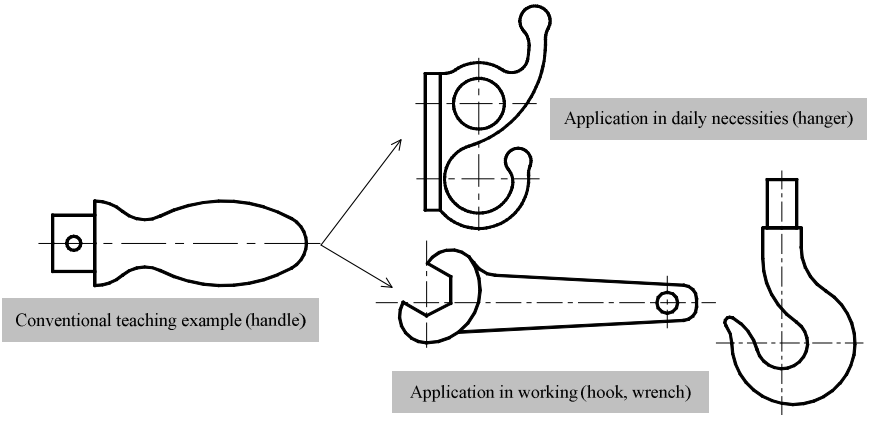


Fig. 2. The Design of Learning tasks in Training Geometrical Drawing

During the learning of engineering drawing, teachers should design a series of skill clusters, which include basic drawing skills, projecting theories or rules, drawing expression, standard and common components, typical detail drawing and assembly drawing. Above training tasks should be designed with authentic example which related to engineering practice, the learners have to study examples and master how to complete the work. Therefore, designers or teachers should produce a list elaborate searching items, which related to daily application or actual production. In figure 2, conventional teaching example can be expanded to daily necessities (clothes hanger) or engineering tools (hook, wrench).

Supportive information. Supportive information provides the bridge between learner's prior knowledge and the learning tasks, it emphasize on embellishing schemata by connecting new knowledge and what learners already know. The supportive information is often presented in learning books and lectures that is called theory or rule, teaching method for presenting supportive information primarily promote cognitive schema which includes two forms: mental models and cognitive strategies: (a) mental models allow to reason within the learning domain; (b) cognitive strategies give learner a rule that guide the problem solving process.

In training geometrical drawing, teachers should demonstrate the process of drawing, encourage student to remind and frame up some tools applying in daily life and working. By imitating the given examples, learners must work out the series question, know about the relevant theory and abstract rule from the demonstrations. The process of drawing in figure 2 is about:

(a) Geometric principles: tangent drawing;

(b) Classified line or curve: definite curve, demi-definite curve, indefinite curve;

(c) The step of drawing: first, base line; secondly, definite curve; thirdly, demi-definite curve; lastly, indefinite curve.

JIT information. JIT information pertains to the recurrent skills that should be performed after the training in a highly similar way over different problem situations, it refers to the information which is prerequisite to the learning and performance of recurrent skills, and needs more memorization than understanding. The teaching methods for presenting JIT information primarily promote encoding compilation, which is called embedding procedural information in rules.

In training geometrical drawing, learner should master the basic rules as followings:

(1) Usage: ruler, compasses, pencils, etc;

(2) Rules of drawing arc link, such as: inscribed circle and scribed circle. A series of arc link are shown in figure 3.

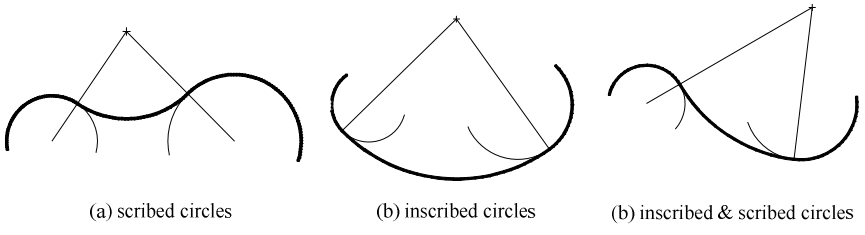


Fig. 3. The Drawing Rules and Classification of Arc Link

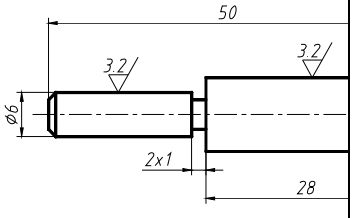
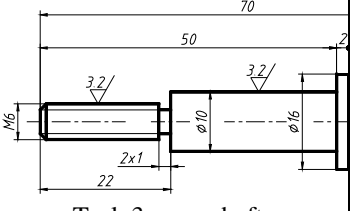
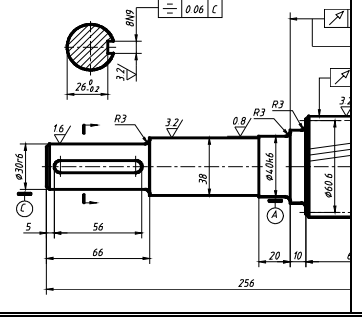
Part-task practice. Usually, learning tasks are weak in strengthening recurrent skills at a high level of automaticity, part-task practice promotes the compilation of procedures or rules and especially their subsequent strengthening, which is a very slow process that requires extensive amounts of practice items. In training design, part-task practice is typically applied for recurrent constituent skills. The designer or teacher should select additional part-task practice for those selected recurrent aspects in the training program. In training geometrical drawing, the strengthening rules focus on how to calculate the radius of link-arc, how to locate the centre of link-arc.

Training design. This section describes the four components in the context of culturing lathe turner, a simplified blueprint for instructing skills of designing typical component - axle is shown in table 1.

4 Results and Discussions

In order to test the effect of the 4C/ID-model on enhancing the learners' performance, we selected two group, one group (class A: 56 students) takes the traditional teaching which pertains to classroom teaching or theoretical teaching prior to practical teaching; another group (class B: 50 students) takes 4C/ID-model; when the learners finish same course, they all take part in an practical step in course - map and drawing machine, the testing contents:

Table 1.a Training Blueprint for Training Skill of Designing axle

Learning tasks (simple-to-complex)	Supportive information (pre "•")	JIT information (pre "*")	Part-task practice (pre "!")
Task 1: simple short axles 	• Contents of detail drawing: views, Dimension, technical requirements and title file	* View selection and expression * Locating dimension and axle processing	! Marking surface roughness and selecting front view ! series of exercise for marking surface roughness
Task 2: step axles (with key groove & threaded end) 	• Standard joint- screw thread and thread processing • Structure for processing technology	* Conventional representation of screw threads * Expression of intersecting lines of holes	! Exercising view of internal - thread and outer thread
Task 3: gear shaft 	• Standard joint- key and its processing • Character and parameter of driving gear	* Expression of gear and dimension * Expression of key groove and dimension	! Marking Tolerance of form and position ! Practicing Looking over Tables of standard components ! practicing calculating parameter of driving gear

(a) Reports on items: machine working principle, skeleton of mechanism;
(b) A series of sketches and working drawing;
(c) Mechanical assembly drawing.

Table 2. The Testing Comparison for Training Drawing Sills

Learners	Grades				workload
	90～100 (%)	80～89 (%)	70～79 (%)	60～69 (%)	(quantity of drawings)
class A	26	19	10	1	detail drawings: 1.5
(56 students)	(46.4)	(33.9)	(17.8)	(1.9)	assembly drawings: 1
class B	39	10	1	0	detail drawings: 3
(50 students)	(78)	(20)	(2)	(0)	assembly drawings: 1

In table 2, there is clearly difference between two groups in terms of grades and workload. For grades, 46.4% students in class A reaches the grades of 90～100, 78% students in class B get good scores between 90 and 100; For workload, the class A's workload of drawing details doubles class B's over the same training period.

In this article, we present an instance of training a vocational skill based on 4C/ID-model, the four blueprint components and their associated instructional methods are described, and the 4C/ID-model is effective in training programs for drawing skills. At present, more and more studies are being carried out for promoting practical teaching, the paper investigate the application of 4C/ID-mode in mechanical drawing, therefore, it may provides a sample for instructing engineering drawing.

Acknowledgement. The financial support from programme of College's programming foundation for teaching research (JXJG-09-15-9) and Programming foundation research of Dong'guan polytechnic (2010a04).

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