

Judith James
Jean Preece
Raúl Valdés-Cotera *Editors*

Entrepreneurial Learning City Regions

Delivering on the UNESCO 2013,
Beijing Declaration on
Building Learning Cities

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*This book is dedicated to
Brian and Thelma St. Clair Pike,
for their lifelong encouragement
and belief in education as the route for change.*

Foreword

This book adds real value to the concept of an entrepreneurial society in a number of ways. It focuses upon the interdependency between cultures (different ways of seeing, believing, organising and doing things). It explores the capacities and motivations for action to solve problems and grasp opportunities by a process of mutual learning at the neighbourhood, local community, city and regional level. And in embracing a wide range of social contexts, it reaches well beyond the conventional narrow focus of entrepreneurial learning and organisation upon the world of business venturing and growth. In pursuing this broader holistic approach to entrepreneurship development in society, it constantly brings together concept and practice, most often, refreshingly, starting from practice. As a result of this, much of the content of this book represents ‘useful knowledge’.

The vehicle for this exploration is the concept of lifelong learning, applied not only to individuals but to organisations and communities. A variety of different themes are embraced, from health and life sciences to sustainable development, to greening, to age, to social deprivation and the world of art and design. Through examples and cases, a central place is given to entrepreneurial learning in the context of the humanities, moving away from the conventional narrow focus of much of entrepreneurial education upon business, and, in the university context, the commercialisation of science and engineering intellectual property.

This book challenges the traditional view of the university as a somewhat isolated ‘learned organisation’. Within the Learning City/Region concept, the university becomes a ‘stakeholder learning organisation’ capable of drawing tacit knowledge from all levels of society via a process of engagement and joint practice. There are many problems in this respect, and numerous examples of how they can be addressed are provided. There is a constant reminder that entrepreneurial opportunities arise from wide stakeholder engagement, a process of transdisciplinarity in the university context and associated gaining of insight. Successful management of entrepreneurial change involves a process of continuous dialogue and partnership. It is by this means that trust-based relationships are built which facilitate informal processes of innovation in society. These processes of informal relationship learning, while key to individual entrepreneurial success, are equally

important in wider institutional contexts. There are many examples given as to how this can happen at an institutional level within the learning city/region concept.

The emphasis throughout is upon global communication, the processes of shared and persistent learning over time and the extent to which exchange is now facilitated by the new technologies in lowering transaction costs to the level that they are open to every citizen and organisation. There are important ideas on how to build from existing neighbourhood and community initiatives via a stimulus to sharing internationally and how, in particular, in the university context, to leverage future social, cultural and economic development using the international student diaspora.

It is clear that the entrepreneurial lifelong learning concept is still being fleshed out by processes of local, regional and international exchange. As such, it presents a powerful challenge to conventional theories of trickle-down development.

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Introduction

This publication is unique in bringing together elements from three previously distinct strands: the learning city/learning community movement; entrepreneurial learning; and regional studies. By presenting a series of international case studies and examples, with reference to the broad academic context of the three strands, we intend to stimulate further studies. It is hoped that this book will help policy makers in cities and city regions to clarify how best to take advantage of the knowledge economy to further develop sustainable economic and cultural growth.

The UNESCO Institute for Lifelong Learning took the initiative in revisiting the concept of the Learning City by creating an international platform where cities across the globe can exchange ideas and communicate successful practices. This was explored in a conference, Lifelong Learning for All: Inclusion, Prosperity and Sustainability in Cities, held in Beijing in October 2013. It was this conference that stimulated the preparation of this book. Here, two important documents were adopted: Beijing Declaration on Building Learning Cities and Key Features of Learning Cities. At the launch of these documents, the following goals were articulated (UNESCO 2013 Beijing Declaration on Building Learning Cities: 8):

- ‘Urging UNESCO to establish a global network of learning cities to support and accelerate the practice of lifelong learning in the world’s communities;
- Calling upon cities and regions in every part of the world to join this network;
- Encouraging international and regional organisations to become active partners in this network;
- Calling upon national authorities to encourage local jurisdictions to build learning cities, regions and communities, and to participate in international peer-learning activities; and
- Inviting foundations, private corporations and civil society organisations to become active partners of the network’.

The term ‘entrepreneurial learning city regions’ brings together well-developed perspectives which have not been previously considered as closely aligned. The term emphasises the importance of developing entrepreneurial skills, knowledge and attitudes in any conceptualisation of learning cities or city regions. The concept

of entrepreneurial learning cities can be explored in two equally important and compatible ways. On the one hand, policy makers can be entrepreneurial in developing learning city regions, and on the other, they can develop the economy of city regions through embracing entrepreneurial learning. What is clear is that the learning city idea has been driven by educators—lifelong learning specialists and enthusiasts for adult and community education. With the waning of national identity, the growth of regionalism and focus on city regions, the concept of the learning city is being rejuvenated and adopted by city leaders as part of their strategy for urban and regional development.

National governments also need to adapt to the new realities:

In some respects, the age of the urban regionalism has arrived. Post-industrial capitalism is evolving in ways that are giving agglomeration economies renewed importance. New forms of economic interdependence, the rise of specialised flexible production, the spread of new technologies and other factors are making the city region a prominent node in today's globalised economy. The urban region has assumed new status. During the last several decades, governments at all levels have been responding to manage this reality (Kantor and Savitch 2010: 50).

This book seeks to review successful, and less successful, practice in various cities and regions and to clarify and promote the concept of an entrepreneurial learning city in a regional context. It brings together specialists from various academic fields and disciplines with international and regional policy makers. There are chapters which describe successful initiatives and effective ways of achieving new sector cluster developments, seen as of benefit to city regions. We address the importance of fostering entrepreneurial skills and attitudes in the development of a successful learning city, and review successful practice in the development of an entrepreneurial ecosystem in a learning city region context.

The approaches to the writing of the chapters have been chosen to highlight various key narratives and give expression to different significant 'voices'. Academics, leaders of educational institutions, entrepreneurs, students and policy makers, among others, are represented in the chapters and case studies. The work of developing entrepreneurial learning city regions is undertaken by scholars, local and national policy makers, formal and informal education providers, entrepreneurial leaders, non-governmental organisations and community groups. The publication is intended to be useful for all of these stakeholders. This book presents a series of case studies and examples written by experts drawn from various parts of the world. In this, we have sought to balance international, national and local contexts.

This book has five parts:

- Part I. The Global Perspective—Identifying the Need for Change;
- Part II. Entrepreneurial Learning;
- Part III. University Perspectives;
- Part IV. Inclusivity and Lifelong Learning; and
- Part V. Working in Partnership.

In Part I, the focus is on the global perspective. In an increasingly global society, cities have grown in spatial and demographic terms and have become the pivots of economic growth in national economies. As such, they have become powerful competitors for global investment and for the location of multinational companies. The UNESCO Learning Cities initiative focuses on sustainable development.

By putting education and lifelong learning at the heart of their development, learning cities have a crucial role to play in realising the 2030 Sustainable Development Agenda, in particular Sustainable Development Goal 4 (to 'ensure inclusive and equitable quality education and promote lifelong learning opportunities for all') and Sustainable Development Goal 11 (to 'make cities and human settlements inclusive, safe, resilient and sustainable') (UNESCO Institute for Lifelong Learning 2016).

How can education for sustainable development and global citizenship be embedded within the development of an entrepreneurial learning city?

The concept of entrepreneurial learning city regions also contributes to the ongoing city region debate which offers a new approach to economic regeneration. Although city regions have been well established in some areas of North America (Portland) and Scandinavia (Oresund), more widely, in a post-recession global economy, ideas of urban agglomeration and enhanced connectivity across local administrative borders are being revised and examined with great interest by national and local governments.

Part II is concerned with aspects of entrepreneurial learning, an emergent phenomenon. A developing and regenerating learning city region requires significant numbers of creative and enterprising groups and individuals, who share an understanding of the underpinning intellectual ideas as well as the historical and cultural context. In the search for competitive advantage, city planners frequently seek to grow, attract and retain entrepreneurs, the creative and innovative individuals and groups who drive economic growth. Erdélyi (2010), in a wide-ranging literature review, 'The Matter of Entrepreneurial Learning', distinguishes between what he sees as the dominant, human-centred, cognitivist approach which emphasises the role of individual actors and their competences and an alternative resource or network-based conceptualisation of entrepreneurial learning. Within that network-based perspective, he describes a distinct school of thought that defines entrepreneurial learning as the building of human and social capital, as put forward by Bourdieu and others. 'Social capital is context dependent and takes many different interrelated forms, including obligations (within a group), trust, intergenerational closure, norms, and sanctions with underlying assumption that the relationships between individuals are durable and subjectively felt' (Bourdieu 1983: 249). The authors of the chapters in Part II contribute to both views.

As in many other aspects of education, there is an ongoing debate as to whether entrepreneurs are 'born' or 'made'. There are also ongoing debates about the conditions that enable entrepreneurs to come to the fore and thrive. Engaged in these debates are, among others, psychologists, geographers, economists,

sociologists and political scientists as well as teachers, city planners and regional policy makers.

The aspiration in an entrepreneurial learning city region is to embed the opportunity to develop entrepreneurial skills and attitudes in all formal and informal learning environments. Authors in Part II explore how to build a city region's creative capacity and develop an economic, social and cultural environment that will generate, attract and retain entrepreneurial individuals.

In Part III, university perspectives on entrepreneurial learning city regions are examined. In particular, chapter authors examine how institutions, by acting entrepreneurially, can impact on the economy of the city regions in which they are located. Detailed consideration is given to the work undertaken by civic universities in developing and sustaining economic and cultural aspects of cities and city regions. The importance of the knowledge economy for the economic and cultural growth and sustainability of cities and city regions is emphasised. Not only do universities need to contribute to the education of potential entrepreneurs, they also require their own entrepreneurial individuals and groups to enable them to grow and compete.

It is generally acknowledged that educational institutions have key roles to play in encouraging and fostering entrepreneurial skills and attitudes. Universities, in various ways, produce entrepreneurial individuals, but many tend to leave the places where universities are located. What can be done on a regional basis to attract and retain entrepreneurial and creative people?

Learning cities are centrally concerned with inclusivity and lifelong learning, the theme for Part IV. To be sustainable, economic development needs to be inclusive. It is argued that it should impact on all sectors of society and tackle the gap between rich and poor. The 'trickle-down effect' of an improved economy has been shown to have little or no impact on the most disadvantaged sectors of society. In Part IV, there are proposals for an alternative strategy to plan change for an improved and sustainable economy that engages, includes and benefits all sectors of society.

Partnership working, the focus of Part V, is a strength that enables organisations contributing to the development of cities and city regions to achieve greater impact by working together collaboratively. Any new initiative in this field needs to be rooted in the history of the region and build on lessons learned about economic, social and cultural regeneration. It also will need to acknowledge the projects, partnerships and networks created at regional, national and international levels that have been undertaken over several decades.

An important challenge is to generate participatory processes of people in the cities by connecting data, people and knowledge, to stimulate collective construction of a city region for and by its own inhabitants. The engagement of local partnerships which have established strong relationships with citizens living in disadvantaged communities needs to be part of developing this participatory process.

Calzada and Cobo (2015: 23–43) explain that 'Not only should governments be better at experimenting and integrating civil society and entrepreneurs/activists in the decision making process; but also, social movements require a necessary

transition from hostile and non-constructive irresponsible strategies to collaborative and commons-driven ones’.

The concluding chapter discusses the continuing importance of learning cities and how they can contribute to the development of sustainable, fair and prosperous environments for the largely urban populations of our future world. The 2030 Agenda for Sustainable Development provides an action plan and clarifies the important role of learning and cities in achieving the 17 Sustainable Development Goals. People learn in order to tackle or adapt to change. The Entrepreneurial Learning City Region initiative can mobilise learning, inclusively enabling citizens to contribute to planning the ways in which the city region will adapt to the massive global and local changes of our times.

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Part I
The Global Perspective-
Identifying a Need for Change

Chapter 1

Attributes of an Entrepreneurial Learning City Region

Norman Longworth

Abstract The concept of the learning city/region has been around for several years, and interest in its concepts is continuing to grow. At the same time, cities are developing as the wellspring of national growth and have established global liaisons in many areas of activity. Resilient cities, cities of opportunity, sustainable cities, sanctuary cities and many more exchange ideas, information and expertise. The common factor of all of them is learning, and in that sense, they are all also learning cities. This chapter identifies the key features of an entrepreneurial learning city and suggests sources of learning materials that will help city leaders, professionals and citizens to understand the rationale, the principles and the requirements of learning cities and regions.

Some Characteristics of an Entrepreneurial Learning City/Region

Figure 1.1 shows the ten attributes of an entrepreneurial learning city/region described in this paper. They address mainly the education and learning aspects and how they impact the city's economic, social and entrepreneurial development.

Encourages All Its Organisations, Public and Private, to Become Learning Organisations

Learning organisations are usually associated with companies in the private sector, but more recently public organisations such as universities, local authorities, schools and vocational colleges have taken up the baton and adapted the concept to

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	An Entrepreneurial Learning City/Region
1	Encourages all its organisations, public and private, to become learning organisations
2	Links its educational, administrative and wealth-creating organisations to develop in partnership with each other
3	Identifies and develops the skills, attributes and structures that allow people and organisations to adapt to a fast-changing world
4	Looks outward. Joins international networks to open all its citizens and organisations to learn from other countries, peoples, cultures and ideas. Treats the outside world as a huge additional resource
5	Releases the power of modern technologies in the service of education, business and industry and communities
6	Increases entrepreneurial education in schools and further and higher education
7	Ensures its future through long-term strategies to foster and market innovation and creativity in all aspects of city/region development
8	Embraces and celebrates the wealth-creating opportunities of diversity
9	Engages people and organisations in implementing the entrepreneurial city's policies by unlocking their talents, ideas, knowledge, experiences, expertise and goodwill
10	Communicates the advantages of the entrepreneurial learning city/region internally to its citizens and organisations and externally to its potential customers and inward investors

Fig. 1.1 Attributes of an entrepreneurial learning city/region

their own purpose. Much of this is due to the pioneering work of the European Lifelong Learning Initiative (ELLI), now unfortunately defunct, which defined the ways in which these institutions can modify their management and administrative procedures and their outlooks to become learning entities.

But what are learning organisations? Senge (1990: 3) suggests that they are

...organizations where people continually expand their capacity to create the results they truly desire, where new and expansive patterns of thinking are nurtured, where collective aspiration is set free, and where people are continually learning to see the whole together.

Horgan (1995: xi) recognises the learning organisation's focus on the future

A Learning Organization is one which has a vision of tomorrow, seeing the people who make up the organization not simply being trained and developed to meet the organization's ends in a limiting and prescriptive manner, but for a more expanded role.

Thus, in the workplace, business gain may be the main reason to become a learning organisation, but the means to achieve that gain is through the development of the human potential of the organisation as a whole—the expanded role. This is also true for non-profit-making organisations. Into this equation comes the

quality culture and decision-making at the most appropriate point by the most appropriate people and where the enterprise turns its strategy, culture and structure into a learning system.

But a learning organisation need not be a company. Indeed, ELLI's ten characteristics (shown in Fig. 1.2) indicate that it can be a company, a professional association, a university, a school, a city, a nation or any group of people, large or small, with a need and a desire to improve performance through learning.

Here, we see affinities to the needs of many entrepreneurial learning cities. They have a 'desire to improve performance through learning'. They 'invest in their own future' by so doing. They need to 'learn and relearn constantly in order to remain innovative'. The dynamic behind the learning organisation can be applied in several parts of the entrepreneurial learning city and region. To be sure, the local and regional administration departments need to incorporate it into their management practices and so does each stakeholder in, for example, the schools, universities, adult colleges, hospitals and police, by focussing on, for example, the citizen, the student and the patient as a valued customer. For this, they may need learning materials (see Chap. 11) such as the 'stakeholder audits', developed in the EU Indicators project, which are aimed specifically at those audiences.

Links Its Educational, Administrative and Wealth-Creating Organisations to Develop in Partnership with Each Other

Mukin et al. (2015: 1) point out that

Cities are the future. They are where people live and work. They are where growth happens and where innovation takes place. But they are also poles of poverty and, much too often, centers of unemployment... they could potentially have huge returns for job creation and poverty reduction.

How can the potential of cities be released? One strategy for an entrepreneurial learning city is to create partnerships between the public and private sectors. By so doing, the synergies between the two can be realised. At the schools education level, links between teachers, students and employees in companies can create a two-way communication channel which produces learning for all. The Woodberry Down/IBM Twinning Scheme (Longworth 2003) is a prime example. Here, the link between a company and a school produced an impressive range of activities. Through a wide range of joint programmes, for example workshops and seminars, job-tasting, cultural development, interviewing schemes, mentoring and financial support, young people were helped in many ways and adults in industry became much more aware of the issues facing modern education.

A very thorough review of links between higher education and industry undertaken for the UK Department of Business, Innovation and Skills by Wilson (2012) presents a number of detailed case studies of university/industry partnerships. Such liaisons tend to be much more prevalent and productive, especially in

10 Indicators of a Learning Organisation
1. A Learning Organisation can be a company, a professional association, a University, a school, a city, a nation or any group of people, large or small, with a need and a desire to improve performance through learning.
2. A Learning Organisation invests in its own future through the learning and education of all its people
3. A Learning Organisation creates opportunities for, and encourages, all its people in all its functions to fulfil their human potential <ul style="list-style-type: none"> - <i>as employees, members, professionals or students of the organisation</i> - <i>as ambassadors of the organisation to its customers, clients, audiences and suppliers</i> - <i>as citizens of the wider society in which the organisation exists</i> - <i>as human beings with the need to realise their own capabilities</i>
4. A Learning Organisation shares its vision of tomorrow with its people and stimulates them to challenge it, to change it and to contribute to it
5. A Learning Organisation integrates work and learning and inspires all its people to seek quality, excellence and continuous improvement in both
6. A Learning Organisation mobilises all its human talent by putting the emphasis on 'Lifelong Learning' for all, and planning its educational offerings accordingly
7. A Learning Organisation empowers ALL its people to broaden their horizons, in harmony with their own preferred learning styles
8. A Learning organisation applies up to date open and distance delivery technologies appropriately to create broader and more varied learning opportunities
9. A Learning Organisation responds proactively to the wider needs of the environment and the society in which it operates, and encourages its people to do likewise
10. A Learning Organisation learns and relearns constantly in order to remain innovative, inventive, invigorating and in business.

Fig. 1.2 Indicators of learning organisations

the USA. The University Industry Demonstration Partnership (UIDP 2014), for example, presents ten case studies of high-value, high-return partnership from several American regions.

Describing the new campus at Berkeley (Gilman 2015: 1) reports

The Berkeley Global Campus will be a focal point for an international coalition of leading academic institutions and private sector and community partners. BGC will bring a global community of researchers and industry innovators to Richmond.

The 'PURE' project (PASCAL Universities Regional Engagement) carried out by PASCAL in more than twenty regions between 2009 and 2013 set out to analyse how higher education could support regional competitiveness and balanced sustainable development, which would reflect the reality of global learning. That study concluded (PASCAL 2013: 1)

Regions need to see the higher (and broader tertiary) resources in their region as fully a part of the region and its resources, and expect participation and contributions of mutual benefit in a very complete way. This means seeing them as reservoirs of knowledge and talent, and engines for creative innovation and development, as well as production systems for a capable and active workforce and citizenry. This applies to all academic discipline fields, not only technology and management. It enables institutions to identify new needs and opportunities for research, R&D, incubators, and spin-off companies etc. as well as new curricula.

This is important for an entrepreneurial learning city. Such partnerships between industry, local authorities and education are likely to contribute much to future economic development and the creation of a new generation of entrepreneurs, as well as provide insights into the social, cultural and environmental issues that affect local and regional government.

Identifies and Develops the Skills, Attributes and Structures that Allow People and Organisations to Adapt to a Fast-Changing World

It is a cliché that this is a fast-changing world and that the skills, outlooks and attitudes of people should also constantly change so that they can better understand and adapt to it. Such readaptation is continuous and applies to the whole population rather than just to those needing skills and knowledge updates for employment. An entrepreneurial learning city will prioritise this. But which skills, which attributes and how and where should they be applied?

Table 1.1 suggests attributes that are suitable for success in both life and a work environment.

Table 1.1 Core skills and competencies for employability and life in the lifelong learning age (Longworth and Davies 1996)

Self-management skills	<ul style="list-style-type: none"> • Being determined to fulfil one's personal potential • Continuously developing personal skills and confidence • Setting and achieving realistic personal targets • Purposeful introspection • Maintaining perspective and a sense of humour
Handling and interpreting information	<ul style="list-style-type: none"> • Using information technology tools and techniques • Collecting, storing, analysing and combining information • Recognising patterns and links and acting appropriately
Applying new knowledge into practice	<ul style="list-style-type: none"> • Seeing the connection between theory and practice • Transforming knowledge into action
Learning to learn	<ul style="list-style-type: none"> • Staying open to new knowledge and new learning techniques • Identifying and using sources of knowledge • Relating learning to personal objectives
Questioning, reasoning and critical thinking	<ul style="list-style-type: none"> • Recognising and embracing quality in all areas of life • Transforming knowledge into understanding • Recognising reasoned argument from a manipulative one • Never being satisfied with the status quo
Management and communication skills	<ul style="list-style-type: none"> • Expressing oneself clearly orally and verbally in formal and informal situations • Persuading others • Listening to others • Helping others to help themselves
Thinking skills and creativity	<ul style="list-style-type: none"> • Using creativity and imagination to solve problems • Thinking 'out of the box' • Anticipating situations and developing forward vision • Knowing where and how to find inspiration
Adaptability, flexibility and versatility	<ul style="list-style-type: none"> • Facing change with confidence • Adapting to new situations and tasks • Being ready to change personal direction • Keeping an open mind
Team work	<ul style="list-style-type: none"> • Sharing information and knowledge • Receiving information and knowledge • Participating in goal-setting • Achieving common goals
Lifelong learning	<ul style="list-style-type: none"> • Continuously upgrading personal skills and competences • Cherishing the habit of learning • Contributing to the learning of others

Skills of this kind are desirable but not enough to cope with the stresses of present day life. What needs to go with them are the values, attributes and attitudes that enable citizens to meet the needs of their families, their social life and the city itself. This author suggests a list of these, some of which are particularly difficult to achieve:

- Self-management,
- Adaptability/flexibility,
- Versatility, resourcefulness,
- Imagination, inventiveness,
- Empathy for other people,
- Outward-looking, visionary,
- Determination to succeed,
- Integrity, honesty,
- Contributing to the learning of others,
- Self-knowledge,
- Respect for the environment
- Aspiration, always wanting to improve,
- Open-mindedness,
- Decisiveness, positivity, and
- Awareness of personal potential.

Where should all of these skills and attributes be acquired? Schools, of course, are the places where impressionable youngsters can first learn their importance and how they will affect their future life positively. Regrettably, school curricula rarely give personal skills and values the attention they deserve, being more fixated upon the acquisition of information/knowledge and examination success. In addition, teachers are not normally equipped to communicate them, and this applies equally in formal adult and higher education. This is why the links described under Part 2 above, the learning organisation structures in Part 1 and many of the actions described in subsequent parts are so important to a holistic entrepreneurial learning city.

South Australia provides an example of skills development for entrepreneurship. It prides itself on having developed an 'entrepreneurial ecosystem'. The City of Adelaide won the Innovative Regions Award in the Australian Technologies competition. The map constructed to develop the system included Networking, Community and Start-up events, Formal Education, Industry Education, Co-working spaces, Incubators and Accelerators, Advisory Systems and Investors. Within each of these headings were the means by which they could be implemented and accomplished, including skills development, communication and support systems, the organisations that would contribute (including schools, universities and adult education colleges), learning needs, the availability of venture capital and many others. As a result, many new ventures have been initiated in a place that was losing much of its traditional industries. The key message, according to Daly (2015: 1), is that '*...there is always an enormous amount of support in the ecosystem to enable the city to get to where it wants to go*'. An entrepreneurial learning city is greatly in need of a strategy to ensure that these skills, attributes and values are developed from an early age and fostered throughout life.

Looks Outward: Joins International Networks to Open All Its Citizens and Organisations to Learn from Other Countries, Peoples, Cultures and Ideas. Treats the Outside World as a Huge Additional Resource

It is equally important to create learning environments that can prepare students for a world in which most people will need to collaborate with people of diverse cultural origins, and appreciate different ideas, perspectives and values. A world in which people need to decide how to trust and collaborate across such differences. And a world in which their lives will be affected by issues that transcend national boundaries. It is about helping students to develop autonomy and identity that is cognizant of the reality of national and global pluralism, and to equip them to join others in life, work and citizenship. The lessons students are taught in school will carry forward into their communities, giving schools and universities a direct path to positively impact their immediate surroundings (Schleicher 2016: 1).

Recent events have caused people to recognise more than ever before that the twenty-first-century world is one in which vast numbers of people live, are persecuted, are forced by war to flee their homeland and are on the move by force of circumstance to new places. Many see this as a threat, others as a problem to be solved and some even as an opportunity. But Schleicher is correct when he states that education and political systems will need to change in order to give people the mental skills to cope with a pluralistic future. Madden (2015) reinforces this and applies it to cities

... the huge opportunity and need is in fast-growing developing-world cities that are growing at 10 percent a year. How we grow those cities and how they're developed and built out will lock in behaviours and practices for decades to come. Whether you're concerned about outcomes for carbon or people, it's the fast-growing developing-world cities that ultimately need to be the target.

And cities are responding. A trawl of the Internet will yield more than fifty city networks in which mayors and professionals can exchange ideas and expertise at conferences through podcasts and via international meetings. These networks include sustainable cities, resilient cities, green cities, social cities, smart cities, cities of opportunity and learning cities. The UNESCO Global Network of Learning Cities, launched at the 2013 conference in Beijing, is assiduously collecting case studies from around the world and building up new knowledge of how cities can adapt to the enormous learning challenge of rapidly accelerating change.

The European Union too has supported learning city network projects. For example, the PALLACE project linked schools, politicians, teacher training facilities and cultural departments in cities in 4 continents (Brisbane and Adelaide (Australia), Auckland (New Zealand), Edmonton (Canada), Beijing (China), Espoo (Finland) and Senlis (France) (Allwinkle and Longworth 2005). In this, schoolchildren in Finland and South Australia exchanged ideas on the future of their communities; teacher trainers in Auckland and Europe jointly created new

training materials; politicians in Australia and France discussed their experiences and challenges; and museums in Brisbane and Espoo discussed how to support lifelong learning. Such intercity projects linking administrations, universities, companies, libraries, hospitals and other services can be the blueprint for the future, especially if cities from the developing world and a wide variety of citizens are included in the mix. The possibilities for fruitful interaction between cities, and hence mutual understanding and innovation, across the globe, are constrained largely by a lack of imagination and creative thinking.

Entrepreneurial cities on the Atlantic seaboard of Europe that are members of the UNESCO Global Network such as Cork and Swansea will also be interested in the November 2015 announcement by the European Commission Committee of the Regions of the funding of plans to foster innovation and promote a resource-efficient economy between countries and cities. Corina Crețu, Commissioner for Regional Policy, stated: *‘This transnational cooperation programme offers concrete opportunities to encourage innovation in all sectors involving private and public stakeholders, while protecting the region’s rich natural resources. I am convinced that it will be beneficial to the sustainable development of regions, cities, towns and rural areas in the Atlantic area’* (European Commission 2015: 1).

For linking schools with each other, there are impressive networks such as iEARN and the Global SchoolNet. iEARN, a non-profit organisation working from Spain, is made up of over 30,000 schools and youth organisations in more than 140 countries. It empowers teachers and young people to work together online using the Internet and other new communications technologies. Over 2,000,000 students each day are engaged in collaborative project work worldwide. The publicity for its network states:

Imagine a world in which teachers and students all across the planet are able to work collaboratively on projects that make a difference in the world,’ says its publicity, ‘Among the tens of thousands of schools worldwide that participate in iEARN, there is no shortage of success stories to demonstrate the power not only to make a difference in the world, but to deepen the learning that takes place in these connected classrooms (iEARN 2005: 1).

Their projects involve a final ‘product’ or exhibition of the learning that has taken place as part of the collaboration. More than 150 interactive projects, including ‘the Atlas of Diversity’, ‘Global teenager’ and the ‘One world project’ enable children to develop research and critical thinking skills, experience with new technologies, cultural awareness and the habit of getting involved in community issues. The *Global SchoolNet* is a similar international schools network funded mainly by large American corporations. Its mission statement includes ‘partners with schools, communities and businesses to provide collaborative educational, scientific and cultural learning activities that prepare students for the workforce and help them to become literate and responsible global citizens’ (Global Schoolnet Foundation 2016).

There can be little doubt in this digital age that the Internet is compressing the planet and changing radically the way that people see the wider world. Many cities

are already multiracial, multiethnic, multilingual and multifaceted. The tide of history is propelling them, sometimes reluctantly, towards greater understanding of, and cooperation with, other regions and other races, religions, creeds and customs.

Releases the Power of Modern Technologies in the Service of Education, Business and Industry and Communities

Entrepreneurial learning cities are also smart cities, where the effective use of technology effects great improvements in education, trade, social services, health and much more. As an example, take Gregory Dobler, an astrophysicist working from a high-rise rooftop in Brooklyn to take pictures of New York City from a distance to ‘help figure out how the city is functioning’. Every ten seconds for two years, Dr. Dobler and his colleagues at New York University’s Urban Observatory have taken a panorama of Manhattan. Across hundreds of wavelengths of light, they are recording the rhythmic pulse of a living city, just as astronomers capture the activity of a variable star.

Researchers can analyze energy use, air quality, light pollution, heat, traffic and sleep patterns moment-to-moment, building-by-building, in one of the most densely populated cities on Earth. ... They hope to turn data generated every day by people in New York into a sustainable design for living that could become a template for digital cities world-wide (Hotz 2015: 1–3).

But this is not just a surveillance project. Researchers, civic entrepreneurs and city managers are using New York for experiments in the emerging science of cities, linking municipal computer networks, making digital data public or installing many thousands of sensors to monitor urban life—from water quality to traffic and power use. Smart irrigation systems in Barcelona, self-regulating street lights in Glasgow, crowd-sourced flood alerts in Jakarta and sensors in Santander, Spain, that monitor everything from air quality to the availability of parking spaces, are similarly the result of technological breakthroughs (ibid).

But the classroom in schools and adult education are the places where technology will be most affected in the future. (Prensky 2014: 1) suggests that ‘...the world needs a new curriculum. We have to rethink the nineteenth century curriculum. We are at the ground floor of a new world full of imagination, creativity, innovation and digital wisdom. We are going to have to create the education of the future’.

And of course he is right, though few parents want to see their children as guinea pigs in an education technology experiment. However, some progress is already being made. Many schools have well-equipped computer laboratories with access to the riches of the Internet, homework assignments are set by Internet in the homes, and teachers are beginning to understand that their role has changed and will continue to change radically because of the advance of technology. It is not just about computers. Tablets and smartphones have the capacity to access the Internet,

and new educational apps are being created to transform them into digital teachers. The ‘flipped classroom’ is finding its way into the methodology of education, the idea of inverting traditional teaching methods by delivering instructions online outside of the classroom and using the time in school as the place to do homework with teachers on hand to give advice and guidance.

Morrison (2015: 1–3) identifies personalisation as a dominant technology-led trend in education.

Greater availability of data and the use of classroom technology have opened up new possibilities for personalized learning, with teachers able to track the progress of students in individual lessons, find out what they spent most time on and which parts they found hardest, and tailor their approach accordingly. Instant feedback allows teachers to find out how much of the lessons students have understood. It also means they can provide one-to-one teaching without publicly singling out students or holding up the rest of the class.

While this may be a more traditional view of future educational methodology, it leads to the topic of ‘big data’, the trails we all leave behind when accessing the net, initially used by business to improve their market exposure, but now used by many cities to streamline all their activities and services. Until recently, it has not found its way into education, but now ‘Moocs, Massive Open Online Courses’—free courses that are open to all and aimed at an unlimited number of participants—have made an appearance. The UK Open University’s ‘Future Learn’ is one platform to access Moocs. Laurillard (2014: 15) states

On an ICT in Primary Education¹ course I teach on Coursera, there are more than 2000 participants from emerging economies. We know this group will need access to free ICT tools and resources in places where internet access is poor. That information affects the nature of the activities we design into the course. The platform will also tell us the rate of dropout each week, which activities participants spent most time on, which were ignored, and so on.

For Britland, technology’s educational future lies in ‘The Cloud’. ‘Teachers’, he states, ‘can use the cloud to set, collect and grade work online. Students will have instant access to grades, comments and work via a computer, smartphone or tablet. Many schools are already doing this. Plus, services such as the educational social network Edmodo offer this for free’ (Britland 2013: 23). This will entail great changes in the delivery of education. Thanks to the cloud and mobile devices, technology will be integrated into every part of school. It will include games fields, gyms and school trips. Whether offsite or on-site, the school, teachers, students and support staff will all be connected. Students can learn from anywhere, and teachers can teach from anywhere. In Britland’s ideal world, ‘all classrooms will be paperless’.

All of this of course has implications for communities, business and industry and city administrations. The ability to deal more easily with large numbers of people is a boost to their operations and services. If it is true, as has been suggested, that an

¹ICT in primary education.

entrepreneurial learning city/region will need to implement lifelong learning strategies in order to keep all its citizens and organisations informed, in learning and in business, the new technologies, used wisely, are going to be the answer.

Increases Entrepreneurial Education in Schools and Further and Higher Education

The opening sentence of the US National Content Standards for entrepreneurship education states

Entrepreneurship Education is a key driver of our economy. Wealth and a high majority of jobs are created by small businesses started by entrepreneurially minded individuals, many of whom go on to create big businesses. People exposed to entrepreneurship frequently express that they have more opportunity to exercise creative freedoms, higher self-esteem, and an overall greater sense of control over their own lives.

Traditionally, the USA has encouraged entrepreneurship as a key economic asset. Far more than in Europe, where welfare systems tend to discourage risk-taking. The same standards organisation has developed courses from primary schools to higher education stating that ‘...entrepreneurship is a lifelong learning process starting as early as elementary school and progressing through all levels of education, including adult education, progressively more challenging educational activities; experiences that will enable them to develop the insight needed to discover and create entrepreneurial opportunities; and the expertise to successfully start and manage their own businesses to take advantage of these opportunities’.

Thomas Friedman, Pulitzer Prize winning Journalist, puts it another way, suggesting that young people should be ‘innovation ready’—meaning that they receive the critical thinking, communication and collaboration skills that will help them invent their own careers. He writes

Entrepreneurship education benefits students from all socioeconomic backgrounds because it teaches kids to think outside the box and nurtures unconventional talents and skills. Furthermore, it creates opportunity, ensures social justice, instils confidence and stimulates the economy (Friedman 2010: 4).

He is, of course, right. The discussion relates back to the skills-based education debate in Part 3 above and to the partnership discourse in Part 2. Schools need not teach these skills on their own. In an entrepreneurial learning city, everyone gets involved in entrepreneurial education—venture capitalists, economics and business studies teachers, company heads, directors and workers, shopkeepers and citizens.

What effect will all this have on the city? Cities vary enormously in their economic performance, often dependent on their recent industrial history. A large city with an established and stable economic background will have many advantages over a smaller one with declining industries. But this often depends on the

dynamism of its people and its leaders. A city which has nurtured entrepreneurial skills and attitudes from an early age is obviously in a better position to flourish. Statistics tell us that the top 10 per cent of cities increase GDP almost three times more than the remaining 90%. They create jobs four to five times faster. Their residents enjoy higher incomes and productivity, and they are magnets for external investment (World Bank 2015). This is true for cities of all sizes and irrespective of location. But perhaps the most potent message that can be given to potential inward investors is the existence of a labour force that is well-educated, creative and entrepreneur savvy at all levels of education.

Ensures Its Future Through Long-Term Strategies to Foster and Market Innovation and Creativity in All Aspects of City/Region Development

Innovation and creativity are, unusually, the flavour of the moment with politicians, businesspeople, city leaders, economists and educators, with perhaps the last of these lagging somewhere behind the others. While it is generally the task of city leaders to mobilise the various organisations, strategies, infrastructures and people that can help raise the city's profile and foster innovation, there are in various countries government organisations to assist in this task. One of these is the catapult centres, established by the UK government to promote and commercialise innovation in cities. These were based on the premise that, while good ideas are legion, their realisation into commercial products was less than good. As Madden (2015: 1) argues 'There are so many amazing ideas out there to improve how cities function. A lot of the difficulty is: How do we deploy them at scale? Do they really work? What's the business case? What's the evidence? We try and accelerate the innovation by continually building the market and reinforcing that'. The catapult works with the innovators in collaborative projects acting as a broker between city, company, university and civil society organisations. Sometimes, cities will approach the catapult because they have a problem or an opportunity. And sometimes, the catapult will go to them proactively because there is some funding or some technology or a collaboration for which they would be a good partner. These are the opportunities that a strong city innovation plan can capitalise on.

Of course, the UK is not the only country with an appetite for more innovation. Singapore also has a plan to pump \$19 billion into science and technology over the next five years and to 'make Singapore a "go to" destination as a global knowledge-based, innovation-driven and future-ready economy and society' (Khew and Yangchen 2015: 13). The funding will focus on four core technological domains: advanced manufacturing and engineering; health and biomedical sciences; services and digital economy; and urban solutions and sustainability. At the same time, \$2.5 billion is set aside for looking into previously unanticipated emerging topics.

Innovation and creativity are the province not only of company leaders, innovation councils and academics. Every employee of a company has a part to play in creating its future, just as, in a learning organisation, everyone learns. Sloane (2013: 5) suggests a number of actions and outlooks that any worker can employ. His dictum ‘recognise that every product, every service, every procedure and every aspect of your job can be done better’ echoes the Rover learning business’s old dictum ‘everyone has two jobs—the job and improving the job’. Sloane calls for regular brainstorms involving everyone and recognises that innovation implies risk-taking. Viz ‘Change your attitude to failure. If everything you try works then you are not being bold enough. Innovation involves trying some things that don’t work. Treat each failure as a learning opportunity. The innovator’s motto is, “I succeed or I learn but I never fail”’. (Sloane 2013: 5). This is the crux. In most companies, people are frightened to try new things. It is a relic of a rigid education system. We tend to think that it is just the marketing or R&D departments that should be creative, when we desperately need creative thinking everywhere in our workplaces.

Embraces and Celebrates the Wealth-Creating Opportunities of Diversity

In some communities, this is a difficult concept to implement. Despite the great strides for acceptance that the LGBT community has made in recent years, there are still pockets of resistance, usually based on religious dogma or occasionally ignorance. And yet there is a strong body of evidence for the connection between tolerance of diversity and economic growth. Florida was one of the first to suggest a link between economic growth and cultural diversity, which he defines as ‘a place’s openness to different cultures, religions, sexual orientations’ (Florida 2011: 1). He has returned to the theme frequently. In the 2003 version of *Cities and the Creative Class*, he notes ‘...from Alfred Marshall to Robert Park and Jane Jacobs, cities have been seen as cauldrons of diversity and difference and as fonts for creativity and innovation’ (Florida 2003: 4). In the later 2005 version of the book, he states ‘Our work finds a strong connection between successful technology and talent harnessing places and places that are open to immigrants, artists, gays and racial integration’ (Florida 2005: 6), while, more recently, he makes his strongest statement on the subject, ‘It’s time for diversity’s sceptics and naysayers to get over their hang-ups. The evidence is mounting that geographical openness and cultural diversity and tolerance are not by-products but key drivers of economic progress. Proximity, openness and diversity operate alongside technological innovation and human capital as the key engines of economic prosperity. Indeed, one might even go so far as to suggest that they provide the motive force of intellectual, technological, and artistic evolution’ (Florida 2013; 15).

Nathan of London School of Economics takes up the baton in 2014

A growing body of research is making links between diversity and the economic performance of cities and regions... First, companies with diverse management are more likely to introduce new product innovations than are those with homogeneous “top teams.” Second, diversity is particularly important for reaching international markets and serving London’s cosmopolitan population. Third, migrant status has positive links to entrepreneurship. Overall, the results provide some support for claims that diversity is an economic asset as well as social benefit” (Nathan 2013: 17).

Finally, Rodríguez-Pose and Hardy of the Centre for European Policy Research conclude that

Diversity shapes the knowledge economy. It does so by expanding the knowledge base and enhancing a region’s ability to recognise, assimilate, and exploit this new knowledge. New immigrants are likely to be especially important to this picture as they bring new ideas and perspectives to stoke the fires of innovation – all the more so when they are highly skilled. Additional factors such as international networks generated through migrant mobility (which forge knowledge pipelines), skill complementarities between native and migrant workers, and a higher propensity for risky action among migrants (like start-up creation), reinforces the economic potential of diverse areas” (Rodríguez-Pose and Hardy 2014: 3).

What this means for an entrepreneurial learning city is that, in order to maximise its growth, it should foster tolerance and understanding among its people and welcome immigrants and LGBT people. In the current climate, this has become more difficult.

Engages People and Organisations in Implementing the Entrepreneurial City’s Policies by Unlocking Their Talents, Ideas, Knowledge, Experiences, Expertise and Goodwill

Many citizens and local communities share a deep need to participate and should be encouraged to contribute to the process of improving the city and their local neighbourhoods. The aim is to ensure that Dublin remains an attractive, vibrant location for industry, commerce, recreation, and tourism and continues to be a major focus for economic growth within the country (Dublin City Development Board 2002: 4).

Most cities have within their boundaries a limitless source of talent, experience, knowledge and goodwill. Few tap into it in any sort of creative way. An entrepreneurial learning city will succeed better if it can persuade as many of its citizens as it can to help implement entrepreneurial strategies. The same is true of smart cities. Tavares, the leader of TM Forum’s Smart Cities global community, observed that “...cities are made up of citizens. Government works for them and businesses need them. There can be no smart city without value generation for the citizen, and a successful initiative considers citizens as the main input of needs, issues and

problems to be solved. They are the permanent ‘beta testers’, so all services must have citizen feedback and validation’ (Tavares 2015: 3). Often, red tape prevents such citizen involvement.

Helsinki’s exercise in public participation is noteworthy for its innovative approach. ‘People are often hard to reach to begin any kind of conversation about development’ it begins, “...but the good news is that there’s hope”. Our experiences from Helsinki show that people’s interest in their surroundings has not gone anywhere. Capturing residents’ excitement just needs new methods’ (Hamalainen 2016: 14). The article goes on to describe how the city has developed a map-based system for building questionnaires and discussion forums that link citizen feedback to specific locations in communities. Using this, they have empowered residents to map freely directions where the city should grow. The study attracted 4700 respondents to mark around 33,000 experience-based ideas on a map of the city, including much input from conventionally hard-to-reach demographic groups like parents and young people.

An entrepreneurial learning city is a whole-city enterprise. It goes beyond industrial and commercial entrepreneurship to embrace social entrepreneurship. By sharing their knowledge and abilities among each other, its people acquire a sense of belonging to a dynamic city that is harnessing the skills of every citizen to ensure a viable future. Industries in particular can set an example by encouraging their workforce to contribute to community development whether it be by mentoring schoolchildren, helping the aged, running courses for the unemployed or the many other initiatives that go to improving community life in the place where their premises are situated. Equally, employees of public institutions, including local government staff, might include an external project within their continuous personal development programme.

Table 1.2 reminds city leaders of some of the many initiatives that must be taken to establish a true entrepreneurial learning city/region. They are invited to complete the 4 last columns where 1 = does this throughout all communities in the city/region, 2 = in some city/region communities, 3 = does not do this but thinking about it and 4 = has not got round to doing this.

Communicates the Advantages of the Entrepreneurial Learning City/Region Internally to Its Citizens and Organisations and Externally to Its Potential Customers and Inward Investors

Communication is the lifeblood of the entrepreneurial learning city/region. It can have the greatest strategy in the world, but if it does not tell any of its citizens and organisations about it, and how and why they can contribute, it will not be implemented. Equally, if it does not broadcast loudly and clearly that here is a city which is open for business to the rest of the world, the strategy is missing its raison

Table 1.2 Engaging citizens in the entrepreneurial learning city/region

	1	2	3	4
Consulting local community organisations about entrepreneurial learning city region policies?				
Writing and delivering a booklet about the entrepreneurial learning city region to every household				
Including representatives of community groups on a development committee or board?				
Actively promoting active citizenship to encourage participation in entrepreneurial learning city region development				
Creating new channels of participation at neighbourhood level				
Carrying out a region-wide neighbourhood mapping exercise to determine new neighbourhood participative structures				
Carrying out local referendums on entrepreneurial learning city/region policy				
Ensuring greater accountability of service providers in the city to the communities they serve				
Developing innovative methods of consultation and participation that ensure the inclusion of all groups in decision-making processes, especially older people, people with disabilities and young people				
Putting up posters about the entrepreneurial learning city/region and/or the value of contribution				
Establishing a good governance audit and excellence mark				
Promoting examples of national and international best practice of good participation in entrepreneurial matters				
Providing an online directory of community and voluntary organisations active in the city				
Developing a volunteer register for the city				
Advertising volunteering opportunities				
Increasing the number of community bulletin boards				
Supporting the development of community TV channels for the region				
Facilitating the development of a support secretariat for each neighbourhood				
Developing a consultation resource pack to advise statutory service providers, businesses, community organisations, agencies and individuals on consultation and channels of participation				
Facilitating the availability of a two-way communication channel on entrepreneurial learning city/region matter to citizens through the use of the Web				
Increasing opportunities for access to the Internet for all citizens				
Including local schools in the entrepreneurial learning city/region consultation process				
Linking with other cities/regions in entrepreneurial matters, e.g. twinning				
Other initiatives—please indicate in the boxes below				
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.				
.				

d’etre. Thus, a strong and well-staffed communications department charged with the task of marketing the city is the sine qua non for ensuring success.

For internal communication and for encouraging people and organisations to participate, the city’s consultation procedures will need to be overhauled. No longer is this a matter of informing or even inviting comment, the exercise should be aimed at empowering its citizens and its institutions to know how to play their part in city development. All citizens have talents, skills, experiences, expertise, knowledge and ideas that they can contribute. The difficulty lies in unlocking them and coordinating the energy that they are willing to donate.

Figure 1.3 shows one way of describing the consultation levels.

This diagram expresses the progression towards a fully empowered learning community/city/region. At its very basic level (Step 1), it is a process of informing people about the fact that the city is an entrepreneurial learning city region and they remain as passive listeners. On the second step, the process is one of discussion where peoples’ opinions are sought and (maybe) taken into account. They become confidants but not actors. The third step expands the process to one of active engagement with the citizens as co-partners in which their opinions are actively included in the development of the entrepreneurial city region—they are passive partners in it. We are now in consultation mode.

On step four, the city is still in consultation mode, but this can be transformed into action through the negotiation of a double step, in which citizens are motivated to learn more about the entrepreneurial city process in order to define their role in it.

The Consultation Ladder

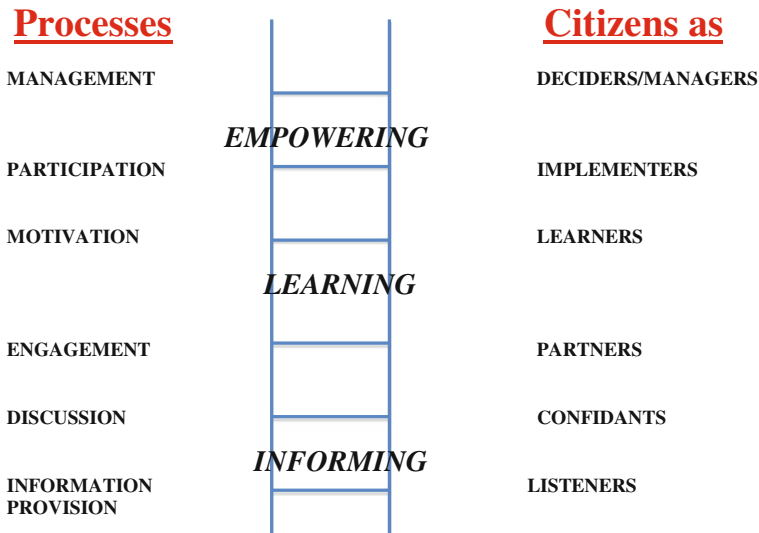


Fig. 1.3 The consultation ladder (from Longworth 2006: 152)

This widening of horizons is a double step since it represents hard to obtain commitment. On step 5, citizens participate in the project that they themselves have helped to create under the supervision of the local authority. This constitutes implementation mode. Step 6 and the transformation is complete. Citizens are fully empowered and committed to manage their own part in the implementation process without reference to outside supervision (though occasional input may need to be made by experts as a coordination exercise).

There are of course many more methods of communication with citizens, among them posters, mailshots, learning fairs and exhibitions, podcasts, tablets, iPads and computers, and of course two-way access to the city Website, as is developed by many cities.

Equally, there are other aspects of the communications strategy which would benefit the implementation of the entrepreneurial learning city region. Many of them are shown in Table 1.3.

It is clear that the process of communicating the entrepreneurial city message is complex and multifaceted, involving a wide variety of stakeholders and stratagems. It is also a crucial aspect of city development.

Sources of Learning Materials and Other Information

There are a number of sources of learning materials on the Internet.

1. Many of the international city alliance organisations have developed indicators and materials for use among their members, and these are to be found on their Internet pages. For example, resilient cities, sustainable cities, cities of opportunity, UNESCO Global Learning Cities Network and smart cities. These are usually free to members. While they are not specifically addressed to entrepreneurial learning cities, many of them would be useful for a greater understanding of learning city development.
2. <http://eurolocal.info> is the major site for all learning city and region materials. It includes papers, research results, projects, learning audits, learning tools, life-long learning lesson materials, charters, strategies, books and materials for each learning city stakeholder. The learning audits, for example, are specifically designed to show how learning city stakeholders in schools, universities, adult education, businesses and local authorities can become learning organisations and how they can develop knowledge of learning cities and their role within it. The learning needs analyses are aimed at providing local authorities with knowledge of learning needs among their staff for their role in learning city development. There is more, much more, within this site.
3. The longlearn materials: written to accompany the book 'Learning Cities, Learning Regions, Learning Communities' by Norman Longworth, these comprise 200 assignments in 90 lessons of topics within the 9 chapters of the book. They are interactive in nature and can be used in classroom or self-learning mode.

Table 1.3 Some communication strategies for city planners

	Yes	No	In plan	Not relevant
Keeping business up to date with opportunities and developments				
Developing the local authority as an e-region				
Providing broadband, high-speed connectivity at a reasonable cost to all homes and organisations				
Online 2-way access for citizens to the city Website				
Creating a competitive telecommunications environment				
Creating an environment for sustainable business to business (B2B) Web transactions				
Increasing the speed of development of online public service provision				
Providing education and learning for people and organisations on entrepreneurial learning city/region concepts				
Improving core skills of computing, communication and the use of digital media by all citizens				
Networking schools and homes for better communication with parents				
Skilling the adult population for the information age				
Providing public information centres in every community				
Setting up community and voluntary fora to harmonise the community and voluntary effort				
Linking community champions and local supporters with the various education, training, business, local development, and community and voluntary interests				
Encouraging citizens and agencies to participate in entrepreneurial learning city region debates and activities				
Collecting and broadcasting statistical data in entrepreneurial learning city region progress				
Developing, maintaining and making available a comprehensive database of community and voluntary activity within the region				
Encouraging and enabling people to find voluntary work in their neighbourhood				
Developing a learning marketplace where people can plan their learning journeys for life				
Developing themed 'marketplaces' which allow all stakeholders to shape and share information, agree policy, participate in decision-making and 'trade' in entrepreneurial learning city region participation exercises				
Other innovative uses (please state)				
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Professor Norman Longworth is a former President of the European Lifelong Learning Initiative and a former UNESCO Professor. He has also been a Visiting Professor of Lifelong Learning at several European universities. He managed many of the European Commission's (EC) Learning City projects, developing tools and techniques to stimulate their growth. He wrote the EC's strategy paper on learning city and region development, has written and edited books and lectured on the subject in more than twenty-five countries. He has worked with UNESCO, OECD and the European Commission on the same topics and has recently helped the former to develop a network of global learning cities.

Chapter 2

Learn, Innovate and Prosper- A Perspective on Learning Cities

Simon J. Gibson

Abstract This chapter will consider the shifts in the world economy and the implications for change in Europe. The need to develop a highly skilled knowledge economy requires the development of entrepreneurial behaviours, attitudes and skills in the working population. It is recognised that advanced technological developments are central to regeneration of the economy. The chapter describes the attributes necessary to climb the global economic hierarchy and suggests interventions to improve outcomes. The Alacrity Programme is provided as an example of the kind of support that has been developed and proven to be effective.

A Perspective on Learning Cities

In economic terms, the world is being turned on its head. By 2013, only 32.7% of the global economic output of G-7 was from the G-7 countries (Federal Statistical Office of Germany 2015: 8). As developing countries educate, innovate and mobilise, their economic performance will push European economies out of the G-7 and, although a number of European countries will stay in the G-20 group of nations, they are left in the dust compared to the new entrants.

Knowledge economies typically develop and manage six strands of economic development: ideas, skills, access to capital, equitable taxation, infrastructure and opportunity capture. Development and the commercialisation of ideas come from a combination of educational establishments, industry and the general population. Around the world, many universities engage in research activity but struggle to commercialise ideas due to a system that rewards publication rather than commercialisation and wealth creation. In many economies, there is a challenging imbalance between funding for research in higher education and commercial outputs.

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Intellectual property has been a point of contention between academia and investors. The focus of angst is usually valuation. Interestingly, universities that take a more liberal view of IP generated within their institution are attracting more venture capital support and generating greater outputs.

As universities create cross-disciplinary space between academics, industrialists and graduates, the commercial success rates typically increase. Universities are increasingly co-locating Business Schools with Science and Engineering Schools, whilst also encouraging serendipity. A knowledge economy has an insatiable appetite for skills. The explosive growth of the Internet of Things, cyber security, social media and mobile applications has created a global deficit of software engineers with the skills necessary to exploit the opportunities. Nations teaching software-coding skills throughout the school curriculum are increasingly improving economic performance.

To create companies with global impact, entrepreneurs need access to capital in all its guises. To encourage the flow of funds, governments have the capacity to provide incentives through taxation structures that provide benefits to both investors and founders/employees. A government providing incentives to knowledge-based companies can quickly realise a return on their tax concessions. The largest expense in knowledge businesses is work force, in the form of salaries. These salaries are subject to payroll taxes and insurance payments from the outset of a company's operations. Furthermore, as companies mature and become profitable they also return revenue to the National Treasury through corporation and sales taxes. Research and development grants, where available, are popular, as they assist in innovation whilst having no dilutive effect on shareholder ownership.

According to Atomico (2016), two hundred and thirty six global companies have reached more than \$1 billion in valuation over the last thirteen years. It is noteworthy that most of them are based on products and services created through software engineering. These companies have created their value by harnessing the Internet and its users. Due to the low barriers to entry, knowledge companies can create wealth rapidly through a combination of human capital, low-cost computing and network access. In a very short period of time, companies with less than fifty people have created 'over-the-top services' which bypass traditional service providers and deliver benefits to hundreds of millions of people. Who could have imagined that the world's largest hospitality company, Airbnb, would not own a single property, or likewise, the biggest taxi company, Uber, would not own a single vehicle? In some instances, their disruptive innovations have transformed appetites and markets. The opportunities have never been greater nor the barriers lower, yet, despite this, many economies struggle to create companies with such valuations. What is consistent about the geographical spread of this success is empowering infrastructure and access to skilled workers.

In many countries around the world, administrators were lobbied and persuaded that the future of ICT was centred around the use of a single proprietary business application. Students would be taught to use a word processor, a spreadsheet, a simple database and a presentation tool. This was generally done as a substitute for learning basic software programming skills and the fundamental workings of digital

platforms. This approach resulted in proficiencies associated with mass digital literacy being subsequently lost for twenty years. A generation of ‘user students’ were fashioned who have little concept of how software is created or implemented. Now there is a burgeoning realisation that this has been a mistake, leaving a gaping hole in both the workforce and teaching skills, which is proving challenging to overcome.

The world is generating data at an unprecedented rate, and a name now describes the phenomenon. ‘Big Data’ is changing the way we look at ourselves and our world. Ninety per cent of the world’s data have been generated in the last twenty-four months, and in 2016, digital data will grow to eight Zettabytes (eight Zettabytes is the equivalent of giving each person on earth 80,000 books, in terms of capacity). If you consider the world’s five biggest companies, three of them are computing platform providers whose services did not exist a decade ago.

The Internet of Things means that almost everything organic and inorganic can be connected to the network. Everything from our bodies to our light bulbs can generate data in volumes that were unimaginable just a decade ago, but big data requires a big network bandwidth. Nations that have understood the need for ubiquitous bandwidth and connectivity are establishing a platform to capitalise on the opportunities that arise from this new cornucopia of information.

Cloud computing has enabled the hosting of advanced services that previously were only available to large corporations. Small businesses can benefit from all of the capabilities of advanced applications and contact centres without purchasing expensive enterprise equipment or hiring in-house expertise. The services and computing platforms are hosted in a data centre and accessed from any location or jurisdiction. To access these new services, citizens, companies, schools and government agencies require symmetrical network access as data are now required to flow quickly in both directions. This is a departure from the original architecture of the Internet designed to populate web pages and download media. It is hard to predict the future in such a fast moving environment, but one thing is certain, the requirement for connectivity and computing platforms are prerequisites for exploiting it.

Opportunity capture is realised by utilising all the strands of economic development: ideas are developed by skilful people who, in turn, are rewarded for their efforts, find access to capital and are supported by a connected infrastructure. Serendipity plays a role in successful innovation. The probability of success is enlarged by creating meeting places in cities, campuses, clusters or online, where persons with multidisciplinary roles can exchange ideas and vision. As entrepreneurs develop their concepts, they have to balance their desire to supply their notions with the actual needs of their customers. Ideas can be intoxicating and entrepreneurs can often find themselves martyrs to their ideas. If the entrepreneur’s idea was wrong from the outset, then no amount of self-delusion will change that fact. This dilemma is avoided by constantly communicating with customers. By simply asking a couple of very simple questions—‘What do you need?’ and ‘What do you want?’—many mistakes can be avoided. Strangely, start-ups often go into stealth mode; obsessed with their ideas and divorced from the very people they

want as customers. It is always better to build something customers want, rather than building something you want.

The Internet has provided a portal to the world, its people, their devices and systems. In all the information generated by the Web, mining of Big Data is creating fertile ground for new ways of delivering services and efficiencies in the discovery of new science and the management of existing global resources. As mobile devices have supplanted the desktop computer, the scope of the marketplace has enlarged and its reach widened. Big Data is as easily accessed and interpreted by SMEs (small and medium-sized enterprises) as it is by global corporations. In fact, it is often the SME that has the intuition necessary to innovate and develop new intelligence and value.

Learning Cities by their very name imply teaching. Yet teaching excellence can fall victim in a push for research excellence, particularly in universities that constantly contend resources between teaching and research capabilities. In the knowledge economy, there are huge opportunities to improve teaching methods and outcomes. In many subjects, the lecture room is seriously threatened by online tools delivering more engaging content and inviting application of learning concepts rather than simply generating essays. Pedagogical methods, where a student applies his or her learning 'in the moment', will often drive outcomes that are more efficacious. Such pedagogy is suited to the personalised experience of a well-designed and well-connected computer-learning environment, as opposed to the diode effect created within a lecture hall. The better virtual learning environments maintain an intimate relationship with the student, as a teacher using them can monitor understanding and competence.

The ability to interconnect teacher to teacher, student to student and student to teacher, enables a greater level of collaboration, interaction and understanding. Virtual learning environments are more than simply posting teaching schedules and course content online. The better examples demonstrate faster routes to mastery and increased levels of student satisfaction. The advantage of a distributed learning model is the ability to reach out to other parties in the economy. Industry has huge potential to increase levels of engagement and mentoring with learning institutions by being included and connected to the emerging learning environments.

The Alacrity Foundation

An example of joining the strands of economic development together in an attempt to create a new generation of technology companies is the Alacrity Foundation, based in Wales. Alacrity is an initiative born out of a partnership between the Welsh Government, private philanthropists and investors.

As an educational charity, the Alacrity Foundation provides one-year post-graduate education in commercialisation and entrepreneurship. The Alacrity curriculum is designed to empower young graduates to form and manage successful high-tech companies. The curriculum process is complemented by volunteer

professional mentors teaching everything from public speaking to listing a public company. The mentors also provide coaching for burgeoning businesses. Stephen Spielberg, the film producer, is famously quoted as saying: ‘The delicate balance of mentoring someone is not creating them in your own image, but giving them the opportunity to create themselves’.

Unlike many entrepreneurship incubators, Alacrity does not ask graduates to come to the programme with an idea. The focus of the methodology is totally demand driven. The ideas for a business are sourced from large companies that agree to work with the Foundation as Strategic Partners. The graduate teams are directed to create solutions to real problems, that once developed can be distributed through the sales channels of the Strategic Partners.

This method of assisting corporate innovation is timely. Innovation processes are being pressured by increasing levels of risk management and compliance. Innovation, by its very nature, involves risk often beyond the appetite of management and shareholder groups. For Corporate Partners, the liberation of ideas and opportunities outside the restrictive environment of the corporate structure allows innovation to move at the pace of a start-up with its free-thinking, energetic and hard-working attributes. An additional benefit for the Partner is that product and service development costs are met elsewhere whilst still being able to introduce innovations to their customer base.

The Alacrity graduate team is free to choose their particular project from a number of opportunities. They are allowed, in fact encouraged, to pivot to find the optimum opportunity. The goal of each team of graduates, which is typically four in number, is to develop a product or service to the stage of a Minimum Viable Product. In order to graduate successfully from the programme, each team needs three things to be in place. Firstly, they must have a verified product or service, a product with clear pent-up demand in the marketplace. Secondly, each team must have customers in place, and finally, they need to identify a sustainable revenue stream. These characteristics are important as most start-up failures are defined by their absence.

It makes little sense to educate and align start-up companies and then leave them to fund themselves in an environment that is extremely crowded with thousands of people looking for support. In such conditions, investment terms are typically harsh and weighted heavily in favour of the investor. To overcome these concerns, at graduation each team can draw down up to £250,000 of venture capital, if it can prove it has a viable product/service, customer base and a revenue stream. This equity funding is made available by a specialist venture Seed Fund formed by a combination of public and private investors. The Seed Fund is separate from the Charitable Foundation but formed with the express purpose of supporting Alacrity conceived companies.

In this scenario, investors enjoy the benefits and characteristics of a later-stage venture round but with all the value of a seed round. The investors are not simply funding a concept but developing a business with growing revenue streams. It also spares the new company from losing momentum by having to spend months trying to raise financing. Alacrity’s task is to make sure the teams have access to capital,

access to contracting opportunities, and the help, advice and mentoring that they need to go out and be successful.

Through the establishment of the Alacrity Foundation and its dialogue with employers, it became clear there is a need in the marketplace for ‘work-ready software engineers’, not simply engineers with a theoretical understanding of software and computing. To address this issue, Wales has created a National Software Academy with a clear and unambiguous purpose: to produce the best software-coding graduates for industry and fulfil the increasing software programming needs of the National Economy. The Academy offers undergraduate courses in computer science, always fully aligned with projects and challenges from industry. The curriculum reflects the real needs of employers and the economy to provide a high level of applied learning. As subjects are taught, the newly acquired knowledge is applied immediately. It is a good example of the aforementioned teaching methods ensuring students apply their learning within 20 min of being taught. As these methods are perfected, they are fed into the wider educational landscape to improve the school curriculum and national digital competences across all subjects taught.

We all want to be in economies that are creative, innovative and wealthy. Where the focus is on quality of life and where the population is made up of people who collectively have independence and self-confidence and can make long-term choices about the kind of future they and their children will experience. This is where environmental sustainability, intergenerational progress and social responsibility come to the fore.

Prosperity can only be sustained by making fundamental changes to the way we educate and mobilise ourselves and more particularly our young people. For nations and regions that simply choose to copy what others have done and do it cheaper, are operating in ‘Hindsight’ mode, resulting in a competitive advantage built upon cost, resulting in survival subsistence. Any regional capabilities are constantly threatened by the next low-cost regions appearing over the horizon. To improve performance, a region can endeavour to develop production efficiencies based on value, a combination of quality and cost. This typically is the first sign of sustainability and wealth.

More highly developed economies succeed in creating value through ‘Insight’. Looking ‘in the moment’ and creating innovation systems to take advantage of new trends and opportunities. This paradigm reflects much of the so-called developed world and results in sustainable economic development. The most successful knowledge economies and regions differentiate themselves with ‘Foresight’. They are knowledge-based clusters attracting the brightest and best talent from across the world, drawn by the prospect of creating the future. They successfully nurture an innovation culture, develop global leadership positions and enjoy the highest standards of living and sustainability.

The ability to create economic foresight requires a learning environment that not only understands the past but can also interpret the present and has the skills and intuition to predict the future. Such innovation habitats all have the six aforementioned economic strands driving their acceleration, but in every case the

ECONOMIC HIERARCHY						
ROLE	ANY JOB	LOW END MANUFACTURING	HIGH END MANUFACTURING	VALUE ADDED MANUFACTURING	INNOVATION	INNOVATION PLUS
PLAYER	UNDER DEVELOPED REGIONS	LESSER "DEVELOPED" REGIONS	HIGHLY DEVELOPED REGIONS	KNOWLEDGE ECONOMIES		
STRATEGY	COPY	PRODUCTION EFFICIENCY	VALUE CREATION	GLOBAL LEADERS		
COMPETITIVE ADVANTAGE	COST	QUALITY & COST (VALUE)	INNOVATION MODELS INSIGHT & OPPORTUNITY	FORESIGHT INNOVATIONS SYSTEMS CULTURE		
OUTCOME	SURVIVAL	WEALTH	SUSTAINABLE DEVELOPMENT	QUALITY OF LIFE		

Fig. 2.1 Hierarchy of economic momentum

bedrock of their continuing prosperity is the drive for excellence in education and research coupled with an insatiable drive towards discovery and innovation, where innovation is defined as the useful embodiment of ideas in society (Fig. 2.1).

So what are the prerequisites to this innovation habitat? There needs to be a societal and political imperative to make it happen, which requires a consensus towards the investment necessary to achieve the desired outcomes. This might seem obvious, but many regions espouse a rich narrative of economic change, but support their ambitions with meagre resources and somehow hope that a new world can be created using old-world methodologies. Whenever educational reform is discussed an immediate and ubiquitous cry for cash resounds throughout the halls of government and although budget is a key factor in reform, simply throwing cash at a broken system can never produce an effective improvement in educational and economic performance. So how can a system do more with less? How can our Learning Cities be optimised to produce economies that are creative, innovative and wealthy?

Here are some suggestions:

- Ponder and understand the concept of being ‘work ready’ in the knowledge economy.
- More people in industry getting more involved in education.
- More people in education getting more involved in industry.
- Stop smothering vocational training with a deep theoretical mist.
- Better understand how to commercialise and liberate ideas more effectively.
- Encourage greater creativity and independent thought in our children.
- Control the forces of governance, compliance and risk management from stifling early innovation.
- Ensure that the nation’s taxation system incentivises learning, patent protection, risk, long-term commitment and success.
- Provide our young people with positive role models
- Deliver global connectivity, connecting more excellent teachers with students in any location.
- Build appealing social-learning networks and blended teaching platforms.

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Chapter 3

University Internationalisation Strategies and Public Engagement

Rebecca Hughes

Abstract Internationalisation of universities can often be a process with few obvious connections to the surrounding environment and the people in the city or region around a university. Few channels exist to link university decisions about internationalisation to the local stakeholder community. At the same time, universities are regarded by many as a potential source of transformative change in their regions, both directly (through net inward income flows) and indirectly (through long-term good will and sharing of diverse cultural assets). For many universities in the UK, their international portfolio is crucial to their long-term success, both financially and in terms of attracting talent. Internationalisation is not a neutral process that happens in a bubble, this chapter argues. It has an impact at many levels that bring costs as well as benefits to local communities. Surrounding communities, for instance, may simply see the impact on their lives of a very large injection of young people from around the world and not fully understand the benefits—economic growth, knowledge transfer and innovation and longer-term cultural ties—that the international activity brings. In the same ways that public engagement with research has become a topic of interest for the tertiary sector, public engagement with internationalisation, this chapter argues, is similarly important. The result of the EU Referendum and the polarised views around who gains from globalisation have increased the urgency of these debates.

Introduction: What Does Internationalisation Look like?

There are three types of activity that most universities draw on when they set out an internationalisation strategy:

- **Student Mobility:** International students coming into the UK to study; UK students (in much smaller numbers) experiencing study abroad;

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- **Partnerships:** Formal partnerships with overseas universities in research and/or teaching recognised in Memoranda of Understanding (MoUs) or Memoranda of Agreement (MoAs); and
- **Teaching and Learning:** Educational benefits created through the curriculum and the student experience, for instance, a focus on cultural awareness or problem solving in international groups.

Some institutions go well beyond these core types of activity. It is useful to think of these strategic endeavours as running from deeper and more resource-intensive activity to more standard and less-demanding work. More intensive forms involve the high resources and risks of setting up a full bricks and mortar branch campus overseas. The University of Liverpool and the University of Nottingham were early examples at this end of the internationalisation spectrum setting up campuses in China around 2002/03. Others develop a strategic alliance with one or more international partners for research. Bristol University in the UK and Kyoto University in Japan are committed to long-term strategic engagement in this way. Some institutions deepen one international aspect and make it a distinctive strategy—for instance, making it compulsory for every student to study a second language in terms of the curriculum design and ‘internationalisation at home’. It is also becoming more common for universities to position themselves in ways that show their internationalisation strategy is fundamental to their overall corporate strategy rather than something added on. The University of Kent, for instance, has promoted itself the UK’s ‘European University’.

In general, we have seen the blurring of international and ‘home’ activities and they are in many institutions seen as supporting one another in a more holistic way than, say, 10–15 years ago when international student recruitment activity tended to dominate. Students arriving in substantial numbers from overseas are still vital to universities in the UK, but many institutions have, despite some nervousness, taken steps along the spectrum of strategic engagement activities mentioned above. Few take on the risks and responsibilities (and opportunities) of a campus overseas but many more are nurturing their attractiveness to international talent, seeking fewer and deeper international research partnerships, and see the need for their students to be globally employable as essential rather than desirable criteria for their institution’s success. All these trends are driving internationalisation to be core to the mission of more universities than ever before. University leaders need to explain and justify all their strategic priorities to multiple stakeholders, internally and externally. Internationalisation strategies are becoming more diversified, more resource intensive and more time consuming—and more complex to explain to stakeholders than student inflows and related fees. This brings with it a greater need to account for the impact of internationalisation and the opportunities it can bring to the university and those around it.

The easiest aspect of internationalisation to quantify is the first dimension of the three above: student mobility. Internationalisation of higher education can seem an abstract process but it is happening through this dimension across the UK in every town or city where there is a successful university. The overall totals for

international student numbers since 2002 are shown in Fig. 3.1. This shows that for the whole of the UK the numbers of international students arriving in the country have been rising rapidly over the last decade to a level of just under 500,000 in 2014/15, although there are some signs that the numbers are plateauing. What this high level does not show, however, is the impact on individual cities which is the topic of most interest in this chapter. Analysis at the city level of detail helps to unpack the relationships between the first pillar of international strategies—student mobility—and its impact on surrounding communities. In order to look at this in some detail, the next section takes four representative cities across the UK—Edinburgh, Liverpool, Birmingham and Cardiff—and offers a preliminary analysis of international student flows into them through the universities they host.

A Comparison of Four UK Cities

The data are taken from the Higher Education Statistics Agency (HESA) at three intake points from 2002 to 2014 and include all levels (undergraduate, postgraduate taught (i.e. masters students), and postgraduate research (i.e. doctoral level students)). For the purposes of the analysis, the following four cities and the 17 HE institutions they are home to were included (Table 3.1).

The aggregated data for the inflows of international students to the groups of universities by city are shown in Fig. 3.2.

The most noticeable trend is the sharp upwards swing in numbers in the time since the 2002 starting point: Cardiff showing increases of 169%, Edinburgh 124%, Liverpool around 68% and Birmingham 66%.

The 2001 and 2011 census data for these cities show overall population growth of between just 6 and 11%. Liverpool, the city that had the smallest growth in its permanent population, showed the second lowest increases in students arriving: a rise from a little over 5000 international students to just over 9000. In contrast, Cardiff, the smallest city in the sample at 310,000 in 2001 and an overall population of 346,000 by 2011, absorbed by far the highest jump of international students of the group from just under 5000 to over 13,000 in the time frame. Also, noteworthy is the fact that only three receiving institutions in Cardiff are being analysed in these data as opposed to five that are in the analysis in Birmingham and Edinburgh. Further samples from other cities to see more detailed trends and qualitative work with these contrasting cities and their international student numbers would be interesting to see, for example, whether the general population in ‘little’ Cardiff with big hitting international recruitment flows perceived the student body any differently from the less dramatically affected Liverpool and also what reasons lay behind their different recruitment totals overall.

It should be noted that Fig. 3.2 shows running totals rather than new starters. This means that for each year shown there may be residual numbers from an earlier year on longer-degree programmes such as four-year Engineering degree or medical degree. To gain a more accurate picture of actual individuals coming into these

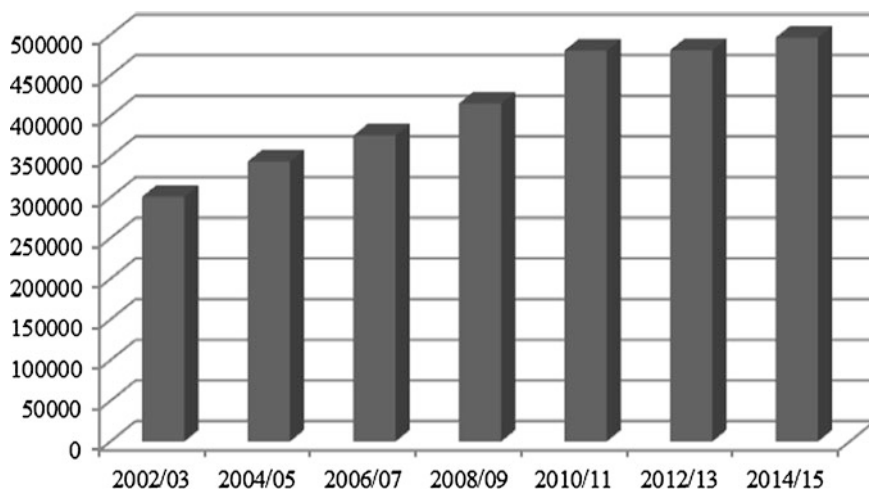


Fig. 3.1 Flows of international students since 2002 to the UK (HESA data)

Table 3.1 City institutions included in analysis

Liverpool (4)	Cardiff (3)	Edinburgh (5)	Birmingham (5)
Liverpool Hope University	Cardiff University	Queen Margaret University	Aston University
The University of Liverpool	Cardiff Metropolitan University	Edinburgh Napier University	The University of Birmingham
Liverpool John Moores	The Royal Welsh College of Music and Drama	The University of Edinburgh	Birmingham City University
Liverpool Institute for Performing Arts		Edinburgh College of Art	University College Birmingham
		Heriot-Watt University	Newman University

cities, it is also possible to analyse the actual head counts of new enrollments. Table 3.2 gives the total student intakes by city between the years 2002 and 2014.

These figures show that in the 12-year period in question the 17 universities in the four cities received 330,500 international students. This means that the equivalent of the population of another higher than averaged sized UK city was temporarily added to these cities in the 12 years in question. Given the overall rises in international numbers seen for the whole of the UK in Fig. 3.1, these uplifts in population due to international student numbers are something we would be likely to see replicated if we analysed the data in every town and city where there is active recruitment of international students by a local university.

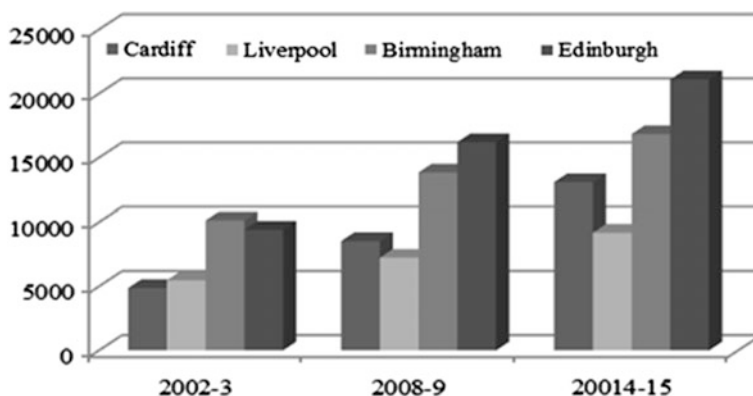


Fig. 3.2 Intakes of international students in four UK cities between 2002 and 2014

Table 3.2 Total numbers of international students by city 2002–2014

Liverpool	Cardiff	Edinburgh	Birmingham	Total
53,805	69,775	118,090	88,830	330,500

Taken together, these numbers are strikingly high in terms of their scale and the rapidity of the rise over the years when compared to the local ethnic minority populations—for instance, the temporary Chinese student body is, in each city, between twice and three times the size of the permanent Chinese ethnic populations of the cities. However, given the permanent ethnic profile has not changed that dramatically it is clear that the vast majority of these students do not remain in the cities where they study and, despite the difficulties in assessing this at the time of writing, the bulk of international students return to their countries of origin rather than taking up residence in the city where they studied. The question is how well prepared these cities are to incorporate these temporary citizens and whether cities are capitalising on the wider benefits that could flow from their presence in the city after they have returned home.

As well as helping the universities themselves remain resilient in the long-term, huge and immediate economic benefits flow from the power of a city or region to attract international students as temporary residents. For the city of Sheffield, for instance:

[I]n the short-term, international students at Sheffield-based universities are estimated to directly contribute £120 million to sub-regional GDP and £147.5 million in total (inclusive of indirect and induced effects). The equivalent figures at the regional level are £131.5 million and £176.6 million respectively (Oxford Economics 2013: 16).

These students also bring longer-term networks and influence for the cities they experience. Very often when alumni get together they will speak fondly of particular areas in a city, dormitories they lived in, streets, restaurants, shops or pubs where they experienced some of the most life changing years of their lives. As well

as valuing studying in the UK, there is a hidden and often untapped army of goodwill towards all parts of the country where international students have lived, which could be brought to play in relation to career opportunities for current cohorts of students wanting to be employed globally and for local firms and businesses wanting to reach new markets. What would these alumni numbers look like broken down by nationality for the four cities in question?

Figures 3.3, 3.4, 3.5 and 3.6 show the breakdowns for the nationalities that totalled more than 1000 students studying in the city between 2002 and 2014. Looking at the nationalities of the students who have experienced these four different cities, there are some intriguing aspects that might point to further work at city level being of interest in relation to internationalisation of HE and civic engagement. Most apparent is the dominance of Chinese students as the top-ranked nationality for all four cities. Birmingham, with a total of 23,000 Chinese students studying in its universities, outstrips the other cities by far, the other cities showing totals of between 11,000 and 16,000.

It is difficult in the small sample in question to establish trends between city demographics and the top-ranked nationalities that are attracted to the cities, but the immediate point of interest is the clear lack found of a link between totals in the city of ethnic minority origin populations and similar levels of international students from these countries. For instance, Birmingham with its extremely high numbers of Chinese students compared to the other three cities shows the smallest percentage

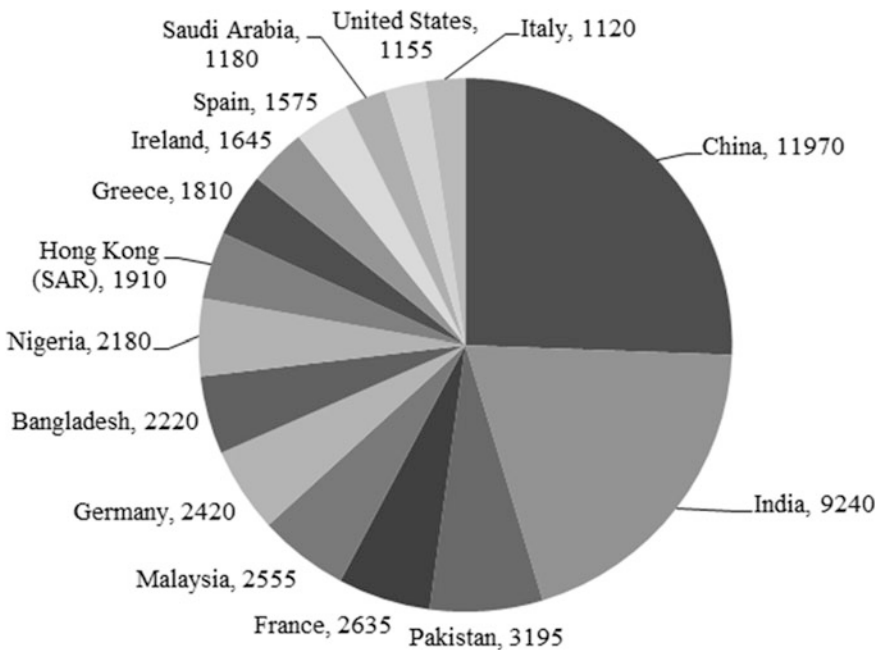


Fig. 3.3 Nationalities of students (over 1000) in Cardiff since 2002

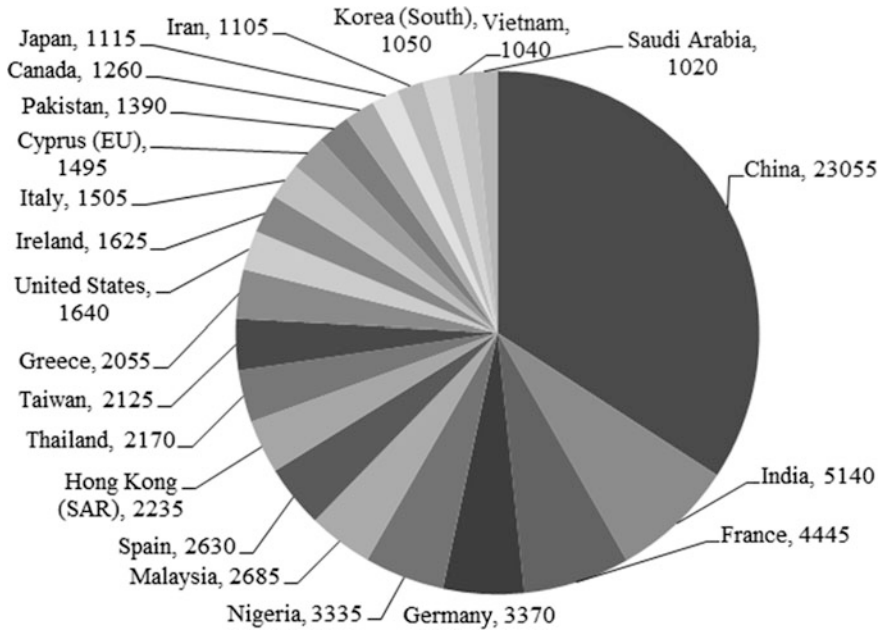


Fig. 3.4 Nationalities of students (over 1000) in Birmingham since 2002

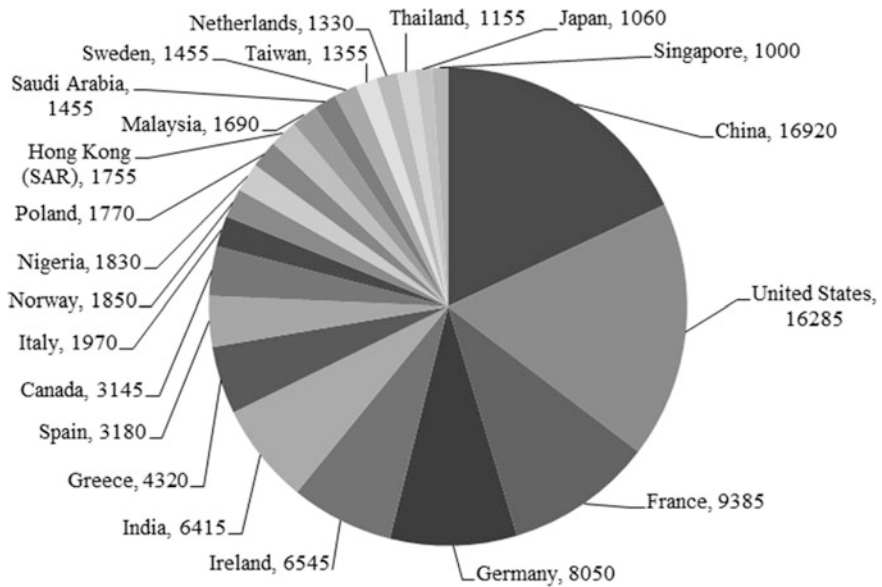
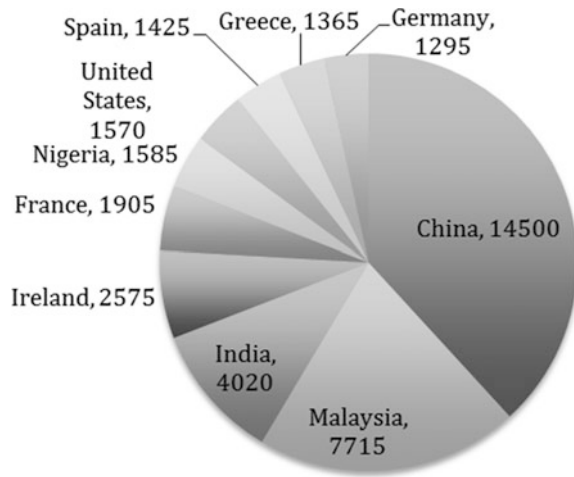


Fig. 3.5 Nationalities of students (over 1000) in Edinburgh since 2002

Fig. 3.6 Nationalities of students (over 1000) in Liverpool since 2002



of ethnic Chinese in the permanent population of all the four cities in the 2001 and again the 2011 census data. Equally, Birmingham's markedly high permanent populations giving 'British Asian-Indian' and 'British Asian-Pakistani' in answer to the question of ethnicity did not link to comparatively higher numbers of international students in the city's universities from these nationalities. Indeed, it is noticeable that Cardiff far exceeds all the other cities in terms of high numbers of students from India and Pakistan despite having roughly similar percentages in the permanent population as Edinburgh and Liverpool. The lack of apparent correlation between local ethnic groups in a city and the popularity of that city as a destination for students is worthy of further investigation beyond these snapshot cities. One interpretation is that it is evidence of the 'town and gown' syndrome at an international level with a circulation in and out of a city of a student population with common language and culture to citizens surrounding the university but little connectivity between them. Another conclusion might be that there is an opportunity for a city and her universities to work with local diaspora to encourage more systematic links between local ethnic minority groups, universities, and bridge these apparent gaps and to encourage greater numbers of particular national groups to study in the cities' institutions.

In a future analysis, it would be interesting to try to understand what drivers have led to these patterns if, as seems the case, they do not involve links to diaspora communities of similar ethnicity, for instance:

- Why 10 times the number of Iranian students have studied in Birmingham in the last 14 years compared to Cardiff;
- Why, as noted, particularly high numbers of Indians are drawn to Cardiff; and Swedes to Edinburgh; Malaysians to Liverpool; and
- Why in comparative terms the USA flocks to Edinburgh and eschews the other three cities.

This broader analysis may uncover, for instance, practical explanations such as a particular approach to recruitment that has been taken by the Cardiff universities that is well received in India and Pakistan, or collaborative work on recruitment in these countries under the ‘Education is GREAT’ or the ‘Study in Wales’ banners, or simply that perceptions of safety and welcome are higher in the principality than other parts of the UK.

A further dimension to consider is the range of nationalities in the top groups in question (defined here as those who rank higher than 1000 in terms of studying in the city between 2002 and 2014). This can be regarded as a measure of the resilience of the institutions to weather political and other changes worldwide that can affect student flows. If a city’s universities are dependent on a very small number of countries for the bulk of their students, the effects on inward mobility of a crisis in one country or region will be far higher. The severe acute respiratory syndrome (SARS) crisis opened many universities’ eyes to the impact of a major and sudden falling off of students arriving from East Asia. My own university at the time saw a drop in expected fee income of around £2 million in one year. What we did not consider at that time but would be interesting to have measured was the concomitant drop in economic benefits to our city from this reduction in these groups of students. By this resilience measure Edinburgh and Birmingham may be the most well-placed cities to weather negative international events as they have historically shown a greater diversity in the range of national groups than the other two cities in question. Liverpool, while also showing the smallest overall growth in absolute terms, also has had the lowest spread of nationalities and may, therefore, be the most vulnerable city in this respect. Analysis at this level allows us to begin to compare and contrast the HE ecosystem inside cities and share some of the dependencies and opportunities that this reveals. The notion of the impact of a geopolitical change on a UK city via the flows of international students is one that merits further investigation. It highlights the hidden symbiosis that has for many years now existed between the international recruitment plans of universities and the economic and longer-term cultural health of cities.

Seen through the lens of city and region, the impact of both success and failure in attracting students on a city will be immediate and palpable and will be a two-way process: an attractive safe city that welcomes diverse student populations, has a great nightlife, transport and cultural assets (and, ideally, a world class football team!) will help its universities thrive and vice versa.

At the outset, I suggested three main areas that many universities see as core to their internationalisation: student mobility, partnerships and teaching/curriculum development. I have looked in some detail at the first aspect through a quantitative lens. The second and third areas are harder to analyse than the first, as publicly available data are thin on the ground. However, an initial snapshot to move the discussion beyond student flows can be created by looking at the activities that a city region carries out via its institutions working with and through the British Council.



Fig. 3.7 Geographical ‘reach’ of Birmingham and the Midlands through engagement with British Council (2013/14)

The global map in Fig. 3.7 shows the international reach of education-related activities in the Birmingham region through the British Council in 2013/14.

These programmes range from the £375 million pound ‘Newton Fund’ research programme with 15 emerging economies, to bilateral programmes (for instance, the ‘UKIERI’ programme between India and the UK), to outward mobility programmes for UK students such as the Generation UK programmes in China and India and to policy dialogues in South Asia and the annual ‘Going Global’ conference for HE leaders. This activity map includes the student recruitment services run by the British Council in over 60 countries but does not include ERASMUS programmes for which British Council is the national agency. In a single year for one city region, these activities reach around 70 countries. There will be far more activities than these carried out by the universities in a city. It is not unusual for a single university to have over 100 Memoranda of Understanding (MoU) on the books. Many universities are starting to question the value of these agreements unless they can be linked to the core business of the university and demonstrably add value. A typical MoU will not be legally binding and will be the initial statement of goodwill and intent that a Vice-Chancellor makes to the leader of an overseas university often after an inward or outward visit. The distinction between these and the more formally binding Memoranda of Agreement (MoA) is sometimes hazy, but in an institution with a mature international strategy these are contractual agreements that might flow from a longer term and more concrete set of ideas for close collaboration with an international partner and set out the responsibilities and contractual basis for some combination of the following:

- Faculty exchange;
- Sharing of data or equipment;
- Curriculum development;
- Joint research;
- Summer schools;
- Joint/double degrees, 2 + 2 degrees.

The work carried out with British Council would sit outside most of the institution-led MoU/MoA work and so taken together we might conservatively say that typically a UK city with three or four higher education institutions would contain an ecosystem of links reaching well over 100 countries. In terms of public engagement with internationalisation, as with the discussion of student flows above, it is a moot point whether these global ‘branches’ of influence and contact should or could have any connectivity to the civic roots they spring from. An example of where there could be greater synergies would be linking the learning that students take from internships spent abroad into some form of sharing with local SME and other enterprises to help them create new links in markets that they have not yet entered or where they need cultural insight. The way that internationalisation of universities is carried out currently does not incentivise or otherwise encourage this kind of lateral reach across institutions, businesses and other partners to find mutual benefits for a city/region and for students.

To sum up, the data analysed above show high levels of impact in terms of student numbers received into the cities in question, a wide global reach for university partnerships and many opportunities for city and university to work together more synergistically. The analysis has shown dramatic flows of student numbers into a city, the very large numbers of certain nationalities that will carry with them a memory and generally a fondness for the city they studied in, and the global ‘footprint’ that educational links create between a city region and several tens of countries around the world in a single year. What we lack in the story so far is a way of linking up the city and the universities directly in this analysis. The following section looks at some of the ways in which the relationship between universities and their cities/regions has been characterised in the past and goes on to show in more depth the effects on one city, Nottingham, of the internationalisation carried out by one of its universities, the University of Nottingham.

University and City Relations: Anchor, Hub or Bridge?

Universities have often been described as ‘anchor’ institutions in relation to their impact on their surroundings. The UK Commission on Employment and Skills summarises the characteristics of anchor institutions as follows:

- **‘Spatial Immobility’:** these organisations have strong ties to the geographic area in which they are based through invested capital, mission and relationship to customers and employees;
- **Size:** anchor institutions tend to be large employers and have significant purchasing power. Both these factors influence the level of impact these institutions can have on the local economy; and
- **Non-profit:** these institutions tend to operate not-for-profit; it is much simpler for private businesses to move, meaning there is no guarantee they will continue serving the local community in the long term. However, there are examples of for-profit organisations playing the role of an anchor’ (UKCES 2015).

The ‘anchor institution’ metaphor emphasises universities’ persistence through time and implies that they will hold on to knowledge and cultural assets despite the vagaries of passing time and political change. The university, in this model, is a benefit to its surroundings as a static monolithic presence, defined by place, and delivering impact through carrying out ‘business as usual’. By means of capital investment in its infrastructure, high numbers of local people employed and engagement with local supply chains for products and services, a successful university will, inevitably, create local wealth and opportunities. It will also lend some cultural credibility to a city and support the existence of other cultural organisations such as museums, art galleries and concert halls, again simply by carrying out its core mission of teaching young people and conducting research along with some greater or lesser attention to a third mission agenda such as student volunteering.

Seen through this lens, the university will share to a large degree the same types of impact on its surroundings of, say, a large hospital, sports venue, opera house, airport or military base. All of these will also require capital investment, employ local staff and interact with local supply chains. The first level of impact, therefore, that internationalisation has on local surroundings can be described in terms of how mobility, partnerships and curriculum development expand the core business of the university and help it to survive and thrive as an employer and an investor in the local community. There is elegance to this way of thinking about the relationship as it leaves the question of the public good mission of HE and the academic autonomy of the university completely on one side. The institution in this way of thinking need not engage with its surroundings. Indeed, it will have easier conversations with far distant or international academic peers than with local businesses or schools. Universities, in this model, vastly increase international students on their books or throw up new buildings to encourage international research collaboration as required to keep them resilient in the long term. These may have neutral to negative impact on a city. Economic and cultural benefits are a happy by-product for the surrounding city and region. There is no requirement in this view of the relationship to aim for porosity between the walls of the ivory towers and the needs of local businesses, or for deep local engagement or two-way learning—the university can grow and thrive on its own terms as long as it is conducting its affairs legally, and the relationships between the student body and the local community are kept cordial and issues such as noise or housing dealt with professionally and with

care. International activity in this ‘anchor’ model is primarily undertaken for the good of the institution and not, beyond economic flows described above, any emphasis on knowledge sharing, strategy development or policy dialogue with local stakeholders.

A related concept often associated with discussion of university and city engagement is that of the institution as a ‘hub’ that attracts resources and shares knowledge. Around 2006, the Organisation for Economic Co-operation and Development (OECD) undertook a project on the impact of universities on their regions and proposed three dimensions that were relevant to examine in this respect. These were the creation of new knowledge, the dissemination of this knowledge to the outside world and the support for ‘cultural and community development’:

The engagement of higher education institutions in regional development can have a number of dimensions, including: (1) knowledge creation through research and its exploitation via technology transfer; (2) knowledge transfer through human resources development, education, localising the learning process by work-based learning, graduate employment in the region, and continuing education and professional development; and (3) cultural and community development, creating the milieu of social cohesion and sustainable development on which innovation depends (Marmolejo and Puukka 2006).

The idea of the importance of place and of co-location of universities and other entities has also been discussed in relation to their importance to civic life. As knowledge ‘hubs’ or places with the capacity to draw in and share knowledge from many very different sources, universities can actively bring together new ideas and share these with those closest to them, it is argued.

[T]here is a tendency to think of universities as existing solely within national systems that dictate, in a functional way, universities’ responses. The national policy arrangements provide resources and can help to make universities powerful regional actors. A significant part of HEIs’ regional potential lies in the fact that they are often not purely regional bodies. However, these relationships are not functional, in that universities integrate and join up between policy streams to produce real capacities; because knowledge capital has increasing returns to scale, this can be conceptualised as universities integrating resources and achieving a “policy windfall”. Bringing more resources together increases the scope of what can be achieved with each set of resources individually (Arbo and Benneworth 2007: 58).

The motivations to build science parks to bring new businesses closer to universities and make the dialogue with them easier, to co-locate spin out companies close to their originating academic departments and the concentration of government funding into clusters of activities such as the UK’s Catapult centres resonate with the university as an institution focused on not only knowledge creation but also on knowledge sharing. This has been seen as a way to solve the difficulties faced by local stakeholders of opening up a dialogue with a university, particularly the SME community:

Small and medium-sized enterprises (SMEs) do not always find it easy to work with large HEIs or to engage in the wider research issues raised in universities. Creating access points can help smooth this process (OECD 2007).

More generally, in debates about learning, co-location and entrepreneurship the concept of ‘knowledge spillover’ has been explored:

Technological gatekeepers, i.e. those firms with a strong technological capability and intensive connections with firms outside the cluster tend to drive and dominate localised knowledge spillover (Giuliani 2011).

Two sets of incentives drive universities to go beyond the ‘anchor’ institution model or the related ‘hub’ model: governments increasingly see universities as engines of regional innovation and growth; and universities, or at least an increasing number, realise that to innovate and grow they need to be more outward looking and engage with local and worldwide communities of people who will both depend on them and help them remain in existence.

In terms of the first set of pressures on the university, a tension starts to exist between a university mission to conduct teaching and research and the demands increasingly being put on them to support economic development beyond their business as usual:

The increased diversity of higher education institutions is reflected in the expansion of their roles and responsibilities. No longer is it merely expected that HEIs provide quality teaching and conduct sound and relevant research, but more and more they are expected to play a key role as agents of regional development. This engagement is to take place in an environment characterised by scarce and limited resources, increased scrutiny, and calls for transparency and accountability from a number of internal and external stakeholders (Marmolejo and Puukka 2006).

The ‘civic engagement’ agenda has, therefore, become central for many universities as they embrace the idea that there are mutual benefits flowing from paying more than lip service to opening up the doors of the ivory tower to local two-way traffic. The University of Newcastle expresses it in this way:

As a civic university, we are committed to delivering benefits to individuals, organisations and to society as a whole. This means putting academic knowledge, creativity and expertise to work, to develop innovations and solutions that make a difference regionally, nationally and internationally.

At Newcastle University, engagement is an integral part of our teaching, research and service endeavours. Engagement is a two way process that allows us to deploy our excellent research and also inform the questions we seek to answer (Newcastle University 2015).

Civic engagement is a way for a university to square the circle between excellence in teaching and research and the demands of ‘scrutiny... transparency and accountability’ from multiple stakeholders it needs to satisfy. Universities, in this way, begin to position themselves as an active agent in the knowledge creation and sharing process rather than a static anchor or a source of ‘knowledge spillovers’ that happen by fiat due to being co-located with local entities. As noted above, universities are uniquely well positioned to link different layers in a network or a system. They speak to parents through their educational mission, they speak to local authorities as major employers and owners of significant assets and infrastructure, they speak to governments as recipients of research funding or as sources of

significant human capital and economic growth and they develop international partnerships that link directly to their core business. The difference between the more traditional ‘anchor’ institution and the civically engaged university is one best described in terms of different fundamental incentives. So, while the anchor institution carries out conversations with local stakeholders primarily in a spirit of enlightened self-interest, the civically engaged university does so more in terms of enlightened mutual benefit.

Arbo and Benneworth see the university’s capacity to hold conversations and have influence at multiple levels as an integrative force in which the international dimension sits easily alongside the local:

Each of these roles performed by universities is important, with universities performing an integrative function at the regional, national and international level. However, it is somewhat artificial to make this distinction between global projects, national activities and regional consequences. Just as there are connections between the teaching, research and community elements of university regional engagement, there are connections between the global, national and regional flows and integration performed by universities. Teaching hospitals are a good illustration of this point. Universities receive national funds to train medical staff for national healthcare systems, but undertake research that may be funded by foreign companies or even healthcare providers (e.g. the United States National Institutes of Health) and in both training and research provide high quality medical facilities at a regional scale, or even to hard to reach communities (Arbo and Benneworth 2007: 58).

Internationalisation, I am arguing in this chapter, is a very special case of civic engagement that can draw together assets, networks and long-term relationships for the benefit of local stakeholders and for the university at one and the same time and across international and cultural boundaries. Assuming that this is true, what does it look like when a university puts internationalisation right at the core of its mission and what does civic engagement look like when this happens?

In order to analyse further the two-way impact of internationalisation, the following section uses the University of Nottingham as a case study.

Nottingham (UK) and Ningbo (China)—Two Cities; One University¹

This section uses case studies of the University of Nottingham’s international activities as one of the most internationally active UK higher education institutions. Its internationalisation strategy has been most visible in the development of two international branch campuses in the late twentieth and early years of the twenty-first century. It remains the only Russell Group² university committed to two full service ‘bricks and mortar’ international campuses, and as such it can

¹My thanks to the University of Nottingham for their support in writing this section and supplying the additional background and data.

²The Russell Group represents 24 leading UK research-intensive universities.

provide a rich case study of the impact that this has had on the civic relationships around these developments and on the university itself.

The University of Nottingham set up an overseas teaching centre in Malaysia in 2000 and opened its first full campus there in 2005. In 2004, it opened operations at a new branch operation—the first university approved to deliver UK degrees entirely in that country—and its purpose-built campus opened in Ningbo a city of around five million people to the south of Shanghai in Zhejiang Province in early 2006. These developments mean that Nottingham University is one of the boldest examples of fully embedded internationalisation strategy, and the cities of Nottingham and Ningbo in particular have developed strong civic ties as a direct result of the university's activities. This gives an opportunity to see what the blending of civic and international had delivered for both a city and a university. Nottingham City Council and The University of Nottingham have very explicitly undertaken a collaboration to build greater links with the Chinese city of Ningbo. The activities and benefits derived from the presence of Nottingham (university and city) in China can, from the perspective of this chapter, be thought of in terms of three different types of outcomes:

- Enhancement of the academic core business;
- Enhancement of economic and wider opportunities for the city; and
- System level soft power benefits and the wider learning that is potentially catalysed from the existence long term of a UK university embedded in a fast moving Asian society.

University core business benefits There are 6500 students on the University of Nottingham Ningbo China (UNNC) campus, and the university calculates that the estimated total annual value of its presence in China to the university, including student fees to the UK and Ningbo, is £80 million. The UNNC campus assists the wider employability profile of the university as 98% of the China campus students are employed or go on to further study on graduation.

Nottingham plays a significant role in exposing UK students to Asian culture: 50% of students studying Mandarin Chinese for credit in the UK study at the university's Confucius Institute and 40% of all UK students who study in China are from the University of Nottingham.

There are over 35 teaching collaborations between UNNC and some of the most reputable universities in China. These include biosciences, aerospace and a unique five-year traditional Chinese pharmacy and international pharmacy degree programme.

Over the last two years, the Ningbo City Authorities have funded a £25 million partnership with the University of Nottingham to develop an International Academy for the Marine Economy and Technology on its Ningbo campus, as well as a £6 million 'New Materials Institute' that will provide the Research and Development heart of Ningbo's New Materials City. The Arts and Humanities Research Council (AHRC)'s digital copyright centre was opened by the organisation's Chief Executive, Professor Rick Rylance, on the UNNC campus. Around

£5.2 million has been secured for the University from Asian businesses by the Asia Business Centre, with a further £17.5 million currently being negotiated for 2015/16.

In relation to these developments and the enhancement of core business opportunities the Marine Institute is particularly interesting. Nottingham is the UK city that is furthest from any of the UK's coasts. Partnership with a 7 million person strong port city in China has allowed it to develop a new strand of teaching and research that it could not have credibly done without the UNNC base.

Civic Benefits

The City of Nottingham twinned with Ningbo in 2005 and in late 2015 the two cities celebrated the ten years of collaboration by hosting the largest ever city-to-city China UK delegation across education, business and civil society. For this anniversary, the External Relations team estimated some of the impact that the long-term collaborations had had on the region where the university lives. They demonstrated that over the decade in question, the value of trade between China and the East Midlands increased from £250 million in 2006 to £1.3 billion in 2013, and by 2015 over 150 Nottingham businesses were trading with China according to the city's Chamber of Commerce. During the return anniversary visit by Nottingham city stakeholders, a statue of Robin Hood was unveiled in the Ningbo Cultural Square—the Chinese visitors having presented twin lions to the city of Nottingham—and an office of a Trade and Investment team was opened on the UNNC campus offering a launch-pad for businesses and enterprises from the city and region seeking to explore opportunities in China and attracting inward investment from China to the UK.

More broadly, the university estimates that £129.7 million in economic impact was generated in a given year by the off-campus spending of international students in the Nottingham, East Midlands and UK economies, 2,200 jobs are supported directly as a result of the presence of the university hosting international students in the UK for their studies and 16% of all spending by Chinese visitors to the East Midlands region is attributed to the university.

System to system learning

Beyond the material and immediate benefits outlined above, there are some harder to calculate broader areas of impact that may, in the long term, form the basis of the most dramatic and substantial areas of change and innovation across the 'bridges' created between Ningbo and Nottingham, and between the UK and China. I should declare a personal interest in that I was the Director of a Centre for International Students at Nottingham at this time and helped set up the first degree programmes at the Nottingham campus in China. I know from personal experience that the teams developing the curriculum, the Chinese Ministry of Education and the UK's Quality Assurance Agency all puzzled over, were mystified by one another, and learned a great deal from the process of developing and approving degrees that meet the requirements of both national systems. The UK's approach to teaching and the focus on creative problem solving rather than rote learning and the Chinese appetite

for sheer hard work and huge capacity to memorise factual information mean that both systems also had something to learn from one another in the inception phase around student expectations and skills. As the programmes matured employers started to meet and find interestingly distinctive the students who graduate with these valuable ‘hybrid’ skill sets (and excellent English). The strides taken in relation to intellectual property rights in China as part of its opening up to global trade and the understanding of innovation within resource constraints are areas where an embedded university community playing out the realities of research and innovation will have had clear impact. A growing understanding of enterprise and indeed of volunteering, students unions, social enterprise, international research benchmarking through shared projects and publications and the value placed on university autonomy are areas that UNNC will have been a window on for China. In the other direction, the campus development provided an entry point for the UK to understand the energy, confidence and hunger of Asian society and find ways to leverage this for mutual benefit.

Overall, the University of Nottingham has conceived of the civic relations that can be created around the university’s activities in the two countries as a ‘bridge’ across which ideas and people can flow more easily. It has committed more recently to helping the city develop its international plan for the next five years in a demonstration of the bringing together of local and international and the multiple players and agencies that Arbo and Benneworth (2007) described.

Discussion and Conclusion

So far, this chapter has remained relatively neutral in relation to the development of international strategies and their impact, or has focused on the positive short-term and longer-term benefits to institutions and their institutions’ neighbours. The benefits and the integration of city and university civic engagement described above for Nottingham, as noted at the start of the chapter, flow from international activity that is at the extreme end of a spectrum along which universities position their strategies and take considerable time, resources and effort. The UNNC campus appeared to rise dramatically from nothing in a busy 18-month period but it had been in preparation for at least ten years with the university laying the groundwork for the conditions to be right for the development. So, it is worth noting for the record that not everyone begins from the standpoint that internationalisation of universities is an undiluted good and that difficult and probing questions need to be asked at times about the overall costs and benefits of international work and to whom they accrue. There are choices and checks and balances that a university leadership team needs to deal with in taking forward internationalisation, and the backdrop of views on the topic (including those of academics, council members and students) will contain as much scepticism, polarised opinions and dissent as immediate support and full understanding of the rationale for an initiative. Here is a

selection of actual examples I have experienced and that are not that uncommon in debates around internationalisation of universities.

The first area of concern for critical stakeholders relates to the notion that UK universities should exist for UK students. A question from a lay member of a university Council at a leadership event I once spoke at captures this: ‘Why is internationalisation a good thing? Doesn’t it just mean there are fewer places for local students?’ The second area often pointed to in relation to internationalisation is that of the potential risks and high-transaction costs. This was summed up for me by a question from a Dean at another event: ‘Can someone help me understand the risks of working with China? I’m paying huge legal bills before we think of partnering’. And the third caused me, as a committed internationalist, to stop in my tracks momentarily as it came from a local Member of Parliament: ‘Why do you want to help set up links with Brazil? Won’t that just help the Brazilian economy and not this city?’

These three questions all relate to a ‘zero-sum game’ view of university strategies in which a limited amount of resource needs to be garnered carefully so that the entity in question—the university in the case of the first two comments and the city in the last—retains competitive advantage and survives. It is a similar point to one about ‘diffusing ... resources’ made by Arbo and Benneworth (2007):

How should universities respond to offers from others to become involved in projects that might not solely be oriented to meeting universities’ goals, thereby possibly diffusing the impacts of scarce university resources? (Arbo and Benneworth 2007: 59)

One response to this issue is to make international activity central to strategic thinking and make sure that recruitment is carried out in a balanced way that aligns to a larger mission. Edinburgh University was one of the earliest universities to create an ‘International Relations’ team with a major focus on strategic alliances and international strategic links beyond student recruitment, and many other UK universities are moving in this direction. Internationalisation is, in this way of thinking, a new way of demonstrating impact and helping the university to survive in the long term. The notion of a spectrum of internationalisation and civic impact along which costs and benefits are analysed may lead to some institutions withdrawing from some activities, as is already happening, as too risky, costly or not core to what they want to say about their mission. It may encourage others to distil their efforts into one or two bold and well-aligned flagship activities further along the spectrum. The changes to the tuition fee structure in England that have narrowed the distinction between home and international fees may encourage a more holistic approach to recruitment, and a number of universities are now combining under a single administrative lead the different kinds of student recruitment that have in the past sat in silos. This, again, is a very positive step.

This chapter has reflected on the relationships between and across city stakeholders of university institutional strategies and how it may be beneficial to draw on city assets more overtly in partnership. The lack of links to diaspora communities apparent in the data for the four cities given above suggests that there is room for closer work between parts of cities that are culturally and linguistically close to

students in distant parts of the globe that the universities are trying to attract. A ‘whole city’ approach to new markets drawing on the experiences and cultural insights of local diaspora groups (including academics and current students) from the countries in question would be radically innovative and potentially rewarding for a city and for its HE institutions but would require much more open channels for communication between civic administrations and university administrations than currently exist. Similarly, there would be benefits to a better understanding of current business and industry relations that a city or region has with other parts of the globe and how the universities in the region could play a part in supporting these. The case study of Nottingham suggested that these bridges can be formed by relatively simple but regular contact between civic and academic individuals who begin to see ways to work together in the longer term. Birmingham University has for many years worked in similar ways with the city of Chicago in the field of Humanities acting as a catalyst for civic cultural partnerships to be forged. The links are not necessarily based in a full bricks and mortar campus in the other country.

Overall, I have been arguing that internationalisation of a university can be a powerful tool to enhance teaching, research and the third mission, but that it is not a neutral or a cost-free process. At its most basic, changing the balance of students who use English as a first language can lead to far greater time being spent on creating preparation courses, offering writing support (including academic time spent on proofreading and correcting text) and time taken on assessment.³ At many different levels, the flows of students and the impact of international links on the city or town they join are palpable, new buildings rise to house them, new types of food are sold in shops and new languages are heard in bars and on buses. This Chapter had laid out some of the major ways in which university internationalisation strategies can affect those around them and given the specific examples from one university’s deep engagement with another city in a distant part of the world through a major campus development in China.

Some universities already actively embrace their civic engagement and make it a defining characteristic. Nottingham University is by no means alone. The University of Newcastle, for example, through the work of John Goddard, is often connected in people’s minds with this area; similarly, the University of Sheffield through its transformative approach to advanced manufacturing and pathways for young people into education and training; and the University of Swansea and its commitment to sharing its international opportunities and its campus as an asset for regional growth and knowledge creation. But not all universities are, or can be, as civically engaged as these examples. In 2006, Marmelejo and Puukka noted:

³One analysis suggests that the difference between students with more modest language proficiency as represented in the International English Language Test System (IELTS) test by a score of 6.0 compared to the more ‘native speaker like’ errors found at band 7.0 will lead to significantly increased academic workloads. The study reaches the conclusion that it may be more cost effective to raise the IELTS scores than put remediation in place (Müller 2015).

Although the legal mandate of higher education in many countries may contain a requirement for regional engagement or so-called third role activities, there are no major incentives or funding streams to support this requirement and most importantly, no set of indicators nor active monitoring of the outcomes (Marmolejo and Puukka 2006: 5–6)

The universities that have been most strategic in their thinking have aimed at embedding both international activity and civic engagement into their core mission and thus have shaped their own incentives and indicators.

Increasing numbers of universities are moving in these directions, whether to be more civically engaged or more internationally agile or to create bonds between these activities that make sense for the institution and for the surrounding societies. Few can, or would want to, remain monolithically anchored and aloof from the society that they both serve and help to lead. The Vice-Chancellor of Oxford University, Professor Louise Richardson, is quoted as saying that ‘A university has a responsibility to be both a force for good in the world, and a good neighbour locally’ (University of Oxford 2015). Whereas a number of newer and smaller institutions outside the Russell Group may have always taken it for granted that they serve their local populations, the UK’s ‘Ivy League’ is increasingly emphasising the impact of their existence for good on both global challenges and local lives. These are healthy moves and taken forward comprehensively will encourage a more streamlined flow from the core business of the university to its neighbours that does not require a separate strand of funding, a group of academic champions or incentives to bring these benefits. Internationalisation, I have argued in this chapter, has a high potential to enhance this engagement in a number of ways and across all aspects of university life.

This chapter has described the symbiosis between universities and cities, particularly around student flows. There has been considerable concern in recent years about the drop off in numbers of Indian students coming to the UK (ascribed to the perceived tightening of visa regulations) and about the over reliance of the UK on Chinese students. The more granular analysis provided here suggests that some cities will have been much more affected than others in terms of the reduction in numbers and the risk of over reliance on a single nationality. The question of the effects of the flow of students from different countries to a city via a university—and both coping with massive increases and down turns—leads to the question of how city and university could realistically support one another more in future. We also saw in the data for the four cities in this chapter that there is the equivalent of a small city of people working and living across the globe with strong bonds to their place of study and networks of influence and cultural understanding for these cities to tap into, but also that there is little to connect city and alumni.

These analyses for four cities, therefore, hint at some intriguing areas for the city’s profile, location and overall attractiveness to be researched in more detail in relation to past and future flows of students. A city regional Mayor or Vice-Chancellor may, therefore, want to engage a city’s stakeholders with the plans for internationalisation more proactively, and particularly help those around an institution understand the impact, immediate economic benefits and long-term assets that can flow from students coming to their doorstep and begin to explore

other channels for two-way benefits. Institutional international strategies have in the past treated their cities somewhat like taxis that serve an airport—there are mutual benefits, but the relationship is incidental. The taxi drivers benefit from the airport's existence, and passenger numbers are reflected in their fares, but they have no influence or insight over the numbers of passengers coming through the doors. Moving beyond the anchor model allows the university to potentially catalyse resources for the region at the same time as strengthening its own profile.

Taking a wider view... makes it clear, for example, that the international dimension is important to both the national and regional elements of the system. If a university can attract external investment, then this can rework the way that national governments regard that place and hence reshape the national investment flows to that place. This additional national investment may potentially be more regionally significant than the external investment, but the international investment has unlocked the system and enabled the overall outcomes to be produced (Arbo and Benneworth 2007: 59).

Overall, I have suggested in this chapter that public engagement with internationalisation is as important, if not more important, as public engagement with research. When it comes to public understanding of science, we want our society to support and understand our universities' research efforts because these institutions are the source of powerful and life changing insights and innovations for the rest of us but they call on resources and demand autonomy that can at times put them at odds with their governments, immediate local needs and their civic partners' perspectives. In the modern era, public understanding of internationalisation is a similarly crucial element of university life. The links forged between individuals and institutions across borders create institutional resilience and help innovation and entrepreneurship flourish in the society around a university. But the data here suggest universities are not drawing on their civic assets well enough and civic partners' lack of a line of sight on international opportunities they could engage with. This means there is much valuable work to be done at the civic-international interface. I have also suggested in this chapter that we may be entering a new era of internationalisation that will call for a more differentiated set of university strategies and ones that engage more directly with local lives. Alongside this, a new agenda on public engagement with internationalisation will, therefore, be an increasingly important potential enabler.

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Chapter 4

Entrepreneurial Learning for Sustainable Futures

Alyson Jenkins

Abstract Entrepreneurial Learning and Education for Sustainable Development (ESD) have similarities and synergies which are explored here through the lens of shared purpose and pedagogy. The economy, as an integral part of society, cannot be separated from ecological considerations; we depend on natural resources and a healthy environment to sustain life. The relevance of Education for Sustainability (EfS) is clear from the evidence that current economic models are unsustainable both ecologically and financially and EfS recognises our interdependence and shared vulnerability on a finite planet. Literature on Entrepreneurial Learning and EfS highlights pedagogical practices that are plural and critically reflective, and encourage learners and teachers to question assumptions. Active and participatory methods such as the use of games, simulations and case studies are advocated as starting points and stimulus for discussions that promote and develop critical reflection and thinking skills as well as affective learning. Evidence from the scientific and business communities points to the need to work differently, to invest, plan and design differently for an ecologically and a financially sustainable future. Embedding or integrating Education for Sustainability into Entrepreneurial Learning appears to be a fruitful area for future research and for developing practice.

Is Learning for Sustainability Important?

The economy, as an integral part of society, cannot be separated from considerations of natural resources and the biosphere, which ultimately support life. A common understanding is that entrepreneurship is the engine that drives the economy of most nations and, in order that entrepreneurs and the economy within which they operate can thrive, advocates of Entrepreneurial Learning are increasingly exploring new ways of thinking and working. This chapter outlines the

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importance and relevance of sustainable development for Entrepreneurial Learning and through a pedagogical lens looks at ways to integrate Education for Sustainable Development (ESD) or Education for Sustainability (EfS) into Entrepreneurial Learning. Similarities and synergies exist, presenting opportunities to consider new ways of thinking and working as entrepreneurs and to develop pedagogy. Finding common ground and common purpose in the discourses of ESD and Entrepreneurial Learning is achieved by focusing on pedagogies that develop the knowledge, understandings and skills that are of benefit to individuals, organisations, communities, societies and ultimately the planet.

Sustainable Development and ESD became priorities for the United Nations following the 1992 Rio summit when the degradation of the environment and human development issues were highlighted on the global, political stage. More recently, the 2008 global economic crisis created ripples in all spheres of life, causing people to question the model of exponential economic growth. The prospect and possibilities of ‘prosperity without growth’ is now being taken seriously. The ecological limits to economic growth were modelled in the limits to growth—a report for the Club of Rome’s project on the predicament of mankind (Meadows et al. 1972). It details the consequences of exponential economic and population growth on the Earth as a finite system, with finite resources. Updates are printed every 5 years that continue to model scenarios based on available data and it is clear that human activity is adversely affecting the global environment—the atmosphere, water, land including the surface and deeper strata and also the plants and animals that share the planet with us. Facts about the loss of top soil are alarming; as a result of erosion over the past 40 years, 30% of the world’s arable land has become unproductive (Pimentel and Burgess 2013). The oceans are polluted and losing their biodiversity and 80% of all forest cover has already been lost. Each year a ‘State of the World’ report is produced and the recent edition (The Worldwatch Institute 2015) offers a systemic analysis that integrates finance, for the first time, into its snapshot of global ecological and societal trends. Financial instability is one of the major challenges of the twenty-first century along with resource depletion and increasing inequalities within and between countries. “These indicate that ‘business-as-usual’ cannot continue. We are passing into a new phase of human experience and entering a new world that will be qualitatively and quantitatively different from the one we have known” (Steffen et al. 2011: 756).

Steffen, a leading expert on planetary trends, stresses the urgent need to change, “we risk driving the Earth System onto a trajectory toward more hostile states from which we cannot easily return” (Steffen et al. 2011: 739). Since 1950, urban populations have increased seven-fold; primary energy use has soared by a factor of five; the amount of fertiliser used is now eight times higher and the amount of nitrogen entering the oceans has quadrupled. These recent changes are down to human activity, not natural variability and the Earth is shifting into a ‘new state’ that is becoming less hospitable to human life (Steffen et al. 2011, 2015). The evidence points to the fact that the global economic system is fundamentally flawed, as it has for decades ignored critically important life support systems and we are now facing an uncertain, unstable and unsustainable future.

Jackson, an economist and author of a report for the UK Government Sustainable Development Commission entitled *Prosperity without Growth?* (Jackson 2009a) asks us to consider the meaning of prosperity and challenges the assumption of continued economic expansion in rich countries.

Prosperity is about things going well for us—in accordance with (pro- in the Latin) our hopes and expectations (speres). Wanting things to go well is a common human concern. It's understood that this sense of things going well includes some notion of continuity. We are not inclined to think that life is going well, if we confidently expect things to fall apart tomorrow. There is a natural tendency to be at least partly concerned about the future. (Jackson 2009a: 18)

Whilst the global economy has more than doubled during the last quarter of a century, an estimated 60% of the world's ecosystems have been degraded; global carbon emissions have risen by 40% since 1990 and significant scarcity in key resources, such as oil, may be less than a decade away. Growth has delivered its benefits unequally, as wealth trickled up to a fortunate few. Given the state of the world, for things to simply go on as usual is inconceivable and will not be an option. The banking and financial crisis that shook the world in 2008 is forcing us to confront our inability to manage the financial sustainability of the global economy. The growth imperative that has shaped the architecture of the modern global economy has not recognised the link between financial and ecological sustainability which is largely responsible for the present instability. The exponential growth model was always considered unstable ecologically and now it is also known to be unstable economically (Jackson 2009a, b).

Adequate food and shelter are basic needs and prosperity has an undeniable material dimension, but prosperity and wellbeing go beyond the material requirements of life and include social and psychological dimensions, such as a sense of belonging, community, trust, respect and meaningful work. "In short, an important component of prosperity is the ability to participate meaningfully in the life of society" (Jackson 2009a: 7). A fair and lasting prosperity depends on our capabilities and capacities to live well within natural bounds. If we do not heed the natural boundaries we condemn future generations to an impoverished planet. "There is as yet no credible, socially just, ecologically sustainable scenario of continually growing incomes for a world of nine billion people" (Jackson 2009a: 8) and education and learning, in its widest sense, both formal and informal, across organisations and corporations, in schools, colleges and universities can help us begin thinking and acting differently. There are opportunities to envisage new ways of living, to create and innovate so that prosperity, measured as more than simply GDP, can be realised.

Addressing macroeconomics and the nature and structure of market economies is not the purpose of this chapter, but two key and interrelated features of modern economic life that together drive the growth dynamic are worth considering for Entrepreneurial Learning and ESD. First, it is important to understand the 'complex logic' that drives demand (Jackson 2009b: 88) and what goods mean to people. Material goods play a symbolic role in our lives; they communicate messages about social status, identity, affiliation, and even about our feelings for each other through

giving and receiving gifts. Goods represent aspirations and dreams of the good life. The second issues are the production and consumption of novelty. Businesses have to adapt and innovate, they have to design, produce and market cheaper, newer and more exciting products constantly; novelty is vital. These two factors create a dynamic that works and the system remains economically viable as long as liquidity is preserved and consumption rises (Jackson 2009a, b) but this fragile system is not sustainable in the long term.

Investment in resource efficiency, low carbon energy and ecosystem enhancement and renewal, for example, can invigorate the economy, and targeting investment carefully can create a demand for different goods, create jobs and offer direct financial returns (Jackson 2009b). Flourishing within limits is possible if we share a vision of the possibilities, address the social logic of consumerism and look at human values (Jackson 2009b: 143). Recent studies, for example, Putnam (2001) in the US and the Sheffield Loneliness Index in the UK (Dorling et al. 2008), have found that levels of unhappiness are increasing in the wealthier countries. Intrinsic values such as self-acceptance, affiliations, belonging and community are important for wellbeing and possessing material goods can sometimes be a cause of anxiety and certain values are unhealthy (Kasser and Ahuvia 2002; Kasser et al. 2007). Happiness and ecological wellbeing are complementary and linked (Brown and Kasser 2005; Dasgupta 2001).

Sustainable Development

Sustainable Development is a contested and complex concept, with both global and local relevance and applicability. At its simplest, Sustainable Development has been described as the links between environment, society and economics. One of the main reasons that it remains problematic is because the notion of ‘development’ has been synonymous with economic growth. Even though there are multiple and contradictory interpretations and definitions, the definition in the Brundtland Report, *Our Common Future*, (World Commission on Environment and Development (WCED) 1987) remains the most often-quoted: “Humanity has the ability to make development sustainable to ensure that it meets the needs of the present without compromising the ability of future generations to meet their own needs” (WCED 1987: 45). Learning to live in new ways designed to respect ecological integrity takes place at an individual level, within organisations, communities, countries and globally.

The concept of global citizenship is intrinsically linked with sustainability (Huckle 2014) and the four key elements of citizenship-rights; responsibilities/duties/obligations; participation; identity/the individual (Williams and Humphrys 2003: 4) are integral to sustainability discourses. In Wales, UK, for example, Global Citizenship Education is linked explicitly in Education for Sustainable Development and Global Citizenship (Welsh Government 2008). Social justice and ethical considerations, our obligations to other human beings and

to future generations are central in notions of sustainability and there is an emerging realisation that a sustainable society must also be an equitable society, locally, nationally and internationally; between generations and species (Agyeman 2007). Global environmental issues will become increasingly important as we confront the moral dilemmas of ecological degradation and the inequalities and suffering in its wake (Singer 2004). It is however recognised that social justice and environmental sustainability do not always have compatible short-term objectives and there will always be tensions and contestation (Dobson 2003). All economies will be affected by global climate change and this realisation is contributing to the acceptance of global interdependence. Seeing and believing ourselves to be part of a common humanity, sharing a finite planet and with a common interest in the process of sustainable development is one of the main discourses of global citizenship. It is fundamentally concerned with moral requirements in the global frame and justice is recognised as a global issue (Cabrera 2008). The concept of our connectedness has recently been stated as our shared vulnerability, as we consider the risks our present unsustainable models of development are posing (O'Neill 2000).

The UN Sustainable Development Goals

Global Goals for Sustainable Development have been introduced by the United Nations (UN). They are intended as a seventeen point plan to end poverty, combat climate change and fight injustice and inequality and, according to the UN, are the biggest attempt in the history of the human race to make the world a better place. 193 governments have agreed to the plan, which is backed by leading businesses and organisations.

The three Sustainable Development goals that are directly and immediately relevant to entrepreneurship are about promoting economic growth, employment and decent work for all; building resilient infrastructures and fostering innovation; and ensuring sustainable consumption and production. These are broad and complex goals that are related to the others, which encompass: ending poverty and hunger; achieving food security and health for all; ensuring education and lifelong learning opportunities for all; achieving gender equality; water management; access to energy; reducing inequality within and among countries; making all human settlements safe, resilient and sustainable; sustainable consumption and production patterns; action to combat climate change; the protection, restoration and promotion of the sustainability of oceans and terrestrial ecosystems; and promoting peaceful and inclusive societies through strong global partnerships (UN 2015).

Corporate Responsibility and Learning

Evidence is emerging that shows a link between business leadership on climate change and a company's profitability. A study by CDP who are a charity working globally with companies to mitigate risk, capitalize on opportunities and make investment decisions that drive action towards a more sustainable world (2014) found that S&P 500 companies that build sustainability into their core strategies are outperforming those that fail to show leadership. However, according to a report by Canadian investment advisory firm Corporate Knights Capital, 97% of companies are failing to provide data on the full set of sustainability indicators: employee turnover, energy, greenhouse gas emissions (GHGs), injury rate, pay equity, waste and water. Learning can be seen as the missing link in implementing Corporate Social Responsibility (CSR) according to Blackman et al. (2012) and they argue that effective implementation of corporate social responsibility requires organisations to consider both the role of learning and unlearning (Blackman et al. 2012: 237).

Fenwick (2010) has examined learning and social responsibility in small business and her research, which traces the learning processes through which owner-managers came to understand and practise social responsibility, underlines the "importance of conceptualizing social responsibility 'learning' more in terms of practices that emerge through challenge and conflict than in acquisition and application of new knowledge and attitudes" (Fenwick 2010: 149). Siltaoja et al. (2014) argue that, within larger businesses, it is the individual and a well-being perspective that need to be understood and CSR should include learning that promotes an empowerment model and ethics. CSR has been explored within business studies and managerialism but, according to García-Rosell, "...the socially mediated and discursive nature of experiential learning approaches to corporate social responsibility has been either neglected or given only cursory coverage in the literature" (2012: 537). Opportunities exist in learning for CSR to examine the dominant discourses within business and CSR can also be seen as a discourse in its own right, "based upon the premise that social, ethical and environmental concerns are central to the role of business in society and that multi-stakeholder learning processes and dialogues are needed to address those concerns" (García-Rosell 2012: 540). The role of individuals, their learning and unlearning regarding CSR, the motives that inform organisational action, and how this learning determines behaviour, deserves consideration in future research (Blackman et al. 2012: 249).

Global Corporate Citizenship involves companies seeing themselves as stakeholders and developing a wider frame of reference that questions and critiques existing paradigms and ways of thinking. "Since companies depend on global development, which in turn relies on stability and increased prosperity, it is in their direct interest to help improve the state of the world" (Schwab 2008: 1), and the transformation of socially responsible principles and ideas into commercial value involves developing corporate social entrepreneurship. The 'common good', a global ethic and the goals of sustainability are elements that entrepreneurship education has to consider in order to respond to needs and remain innovative.

Entrepreneurial Learning and Learning for Sustainability

Recently scholars are linking entrepreneurship education and sustainable development; this includes work by Oziegbe et al. (2015) who writes from a Nigerian perspective. Nigeria developed the National Economic and Empowerment Development Strategy as a response to the urgent requirement for value orientation and the fact that the millennium development targets were not met (Oziegbe et al. 2015: 281–282). Parrish (2010) and Tilley and Parrish (2006) have written about sustainable or sustainability entrepreneurship from an organisational point of view and outline the theoretical, conceptual ground for this emerging interdisciplinary field. Other scholars link individual and corporate values and behaviour to corporate sustainability within conceptual frameworks (Avota et al. 2015).

The making of Ecopreneurs (Schaper 2010) is not what we are talking about here. Integrating ESD into entrepreneurship education is concerned with all entrepreneurs developing an awareness of sustainability principles and, as a result, working differently. Let us begin by looking at what might inhibit people from integrating sustainability into entrepreneurship education programmes. According to Willard, companies are not aware of the business case for sustainability or they might be aware of it but do not believe it. Another reason for dismissing sustainability is that they are afraid of being accused of ‘green-washing’ and some dismiss sustainability for being irrelevant (Willard 2005: 5). Entrenched mental models are at play here. People engaged in education for sustainability likewise have conceptual barriers for distancing themselves from entrepreneurship education. One is the prevailing business paradigm which sees globalisation in terms of free trade and a global marketplace with exponential economic growth and the homogenisation of culture as inevitable corollaries. Engaging with those involved in shaping the economy is however necessary, and there are similarities to be found in the purpose and process of learning for entrepreneurship and sustainability. Fayolle and Gailley (2008) discuss definitions of entrepreneurship which can be seen as the outcome of superior alertness exhibited by selected individuals in the population and the entrepreneur is also characterized as someone able to cope with uncertainty. Entrepreneurs, given these attributes, would be excellent champions for sustainability.

Sustainability has a stick and a carrot. The stick is the need to minimize the storm of risks and the carrot is the possibility of maximising business opportunities through real social and environmental leadership that exceeds society’s expectations. Benefits of adopting sustainability could include: attracting high calibre talent and those with values that resonate with the companies’, increased enthusiasm due to a more ethical stance and therefore increased productivity, reduced expenses though reducing, re-using and recycling, cutting down on waste and increased revenue as green consumers are attracted to the company’s products; services are expanded, and new markets are opened.

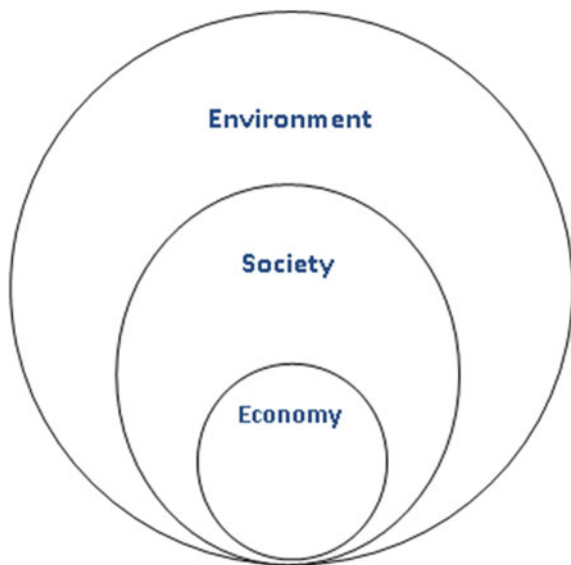
Willard (2005, 2012) comprehensively explores these issues and the objections and counter-argument to sustainability. He concludes that smart business strategies

include sustainability strategies. A nested or embedded conception of the interrelationship between environment, society and economy is proposed by Willard (2012: 9) and by Marcus et al. (2010) as the representation for sustainability, see Fig. 5.1.

Kurucz et al. (2013) also use the embedded model, and they put forward ideas for redirecting the contextual, organisational, curricular, and pedagogical dimensions of management education toward such a vision (2013: 437). Rather than covering sustainability as a topic they propose it should be embedded in all learning and their approach rests on the idea that our dominant approaches to wealth creation degrades the ecological systems and social relationships upon which our survival depends. This involves critiquing the underlying assumptions of business and management education and critically evaluating, analysing and questioning the basic premises underlying contemporary practices (Kurucz et al. 2013: 439; García-Rosell 2012).

Frameworks for and conceptualisations of entrepreneurial learning are extensively discussed by Cope (2003, 2005), Pittaway and Cope (2007a) and Pittaway and Thorpe (2012). A dynamic learning process and higher-level learning that involves critical reflection are emphasised by Cope and the transformational and transformative aspects of it are key characteristics. Transformational learning is about entrepreneurs developing a renewed understanding or redefinition of the organisational processes and strategies that are employed within their organisations and transformative learning has a distinctly personal dimension that contributes to an entrepreneur's self-understanding (Cope 2003: 437). "Entrepreneurial learning is

Fig. 5.1 A nested or embedded conception of the interrelationship between environment, society and economy (After Marcus et al. 2010: 5; Willard 2012: 9)



not characterized by the notions of stability, consistency, or predictability” (Cope 2005: 392), it is a dynamic process that is emerging as a field for further research, as is learning for Sustainability.

Possibilities Through Pedagogy

At the end of the day, perhaps we do not teach entrepreneurship the discipline.

Perhaps we teach a method to navigate the discipline (Neck and Green 2011: 68)

Many of the approaches to entrepreneurship education echo the approaches in ESD or EfS. All learning needs to consider the context of uncertainty and risk in the turbulent twenty-first century and the need for creative solutions to the challenges we face; it needs to be future-facing. Kurucz et al. (2013) advocate transdisciplinary approaches and the valuing of pluralistic knowledge. This resonates with ideas of multiple literacies in ESD (Bohla and Gomez 2008; Stibbe 2010) which include: political literacy, emotional intelligence, cultural literacy, ecological literacy and basic media and digital literacy. It also means developing an understanding of, and valuing the different ways that people and cultures know and experience the world.

A review on entrepreneurial learning by Samwel Mwasalwiba (2010) found that the most commonly used teaching methods are: lectures; case studies; and group discussions. Other methods used include: computer or game simulations; video and film; role models or guest speakers; business plan creation; projects; games and competitions; case studies of small business ventures; workshops; presentations and study visits (Samwel Mwasalwiba 2010: 31). Similar methods are used effectively in ESD (Cruickshank and Fenner 2012) and games and simulations are also found to facilitate good learning outcomes in ESD (Dieleman and Huisingh 2006) and in enterprise education (Neck and Greene 2011). Discussion, apart from being a method in itself, plays a part in all these teaching methods.

In order to address the need for multiple literacies, engage with values and ethical issues and promote a democratic learning environment, changes are needed in the techniques of teaching and learning in enterprise education (Jones and Iredale 2010: 14). An active-learning pedagogy according to Jones and Iredale (2010) includes: the knowledge needed to function effectively as a citizen, consumer, employee or self-employed person in a flexible market economy; the development of personal skills, behaviours and attributes for use in a variety of contexts; developing the person as an enterprising individual—in the community, at home, in the workplace or as an entrepreneur; and the use of enterprising skills, behaviours and attributes throughout life (Jones and Iredale 2010: 11).

Pedagogy is a means to achieve objectives (Fayolle and Gailly 2008: 579) and publications on pedagogy in entrepreneurial learning (Cope 2003, 2005; Fayolle and Gailly 2008; Jones and Iredale 2010; Pittaway and Cope 2007a, b) can inform discussions on integrating global sustainability and entrepreneurship education through developing entrepreneurial learning that is dialogic and addresses values. The focus here is on approaches to teaching and learning that give dialogue and

discussion central importance and where participation, critical reflection and collaborative methods are vital elements. Kurucz et al. (2013) assert that dialogic approaches can institute a progressive educative practice and be “pedagogical leverage points” (Kurucz et al. 2013: 452). Posing real-life problems and using case studies are methods to facilitate co-investigation, with students and teachers working together and dialogue used as the means for generating new insights that have the potential for transformation (Merriam et al. 2007). It is acknowledged that a practice, or work-based element is important, but this chapter is concerned with classroom-based pedagogy that becomes a basis for, and a place to reflect on, practice.

Theories that resonate with entrepreneurial learning and ESD are those of experiential learning (Freire 1970; Kolb 1984; Pittaway and Cope 2007), self-directed learning (Merriam 2001: 5) and transformational learning (Mezirow 2000). These rely on methods that facilitate critical dialogue and reflection and students work with, and learn from, each other and the teachers or mentors. They share ideas, discuss values and the different perspectives of, not only class members, but the multiple stakeholders that might be involved in a particular case whether it is an enterprise, business or project. In a classroom in which sustainability issues are addressed through entrepreneurial learning there is a need to recognise pluralism, where everybody’s ideas of sustainability are listened to and individuals are empowered to take ownership and responsibility for their own learning (Merriam 2001), and through dialogue and discussion co-create and collaborate.

Dialogue and Discussion

...transformational learning theory has expanded our understanding of adult learning by explicating the meaning-making process. It is not what we know but how we know that is important (Baumgartner 2001: 22).

Dialogue and discussion can be employed as a pedagogical approach using a range of different methods. It requires no added resources and can be structured or fluid. What it does require however is a skilled and confident facilitator. Asking educators to consider and integrate sustainability and entrepreneurial learning is asking a great deal. Focusing therefore on a pedagogy which is not prescriptive and which has a well-established theory and practice can be a good starting point. Larson (2000) sees discussion as having two broad purposes: it is a method where content is learned and understood through interaction and communication and where skills of reflecting and thinking critically are developed. Discussion also calls for us to develop communication skills including being able to listen attentively and speak clearly; we learn how to formulate arguments, participate and express our views confidently.

How can teachers facilitate structure and support dialogic learning in the context of entrepreneurial learning for sustainability? This is not quick fix pedagogy and

there are no quick fix solutions to real world issues. Research in Wales during 2009–2010 (Jenkins, n.d.) found that a lack of immediate solutions or easy explanations can be a barrier for many tutors; their subject knowledge and expertise cannot provide answers for climate change or global poverty and many feel uncomfortable with this. Tutors fear that some learners might become emotional during discussions about controversial or contentious issues and they worry that extreme views could be expressed, creating tensions in the classroom. Tensions do become apparent and conflict can arise during a discussion, but learning often involves being uncomfortable. It is through addressing complex, uncomfortable issues, questioning our assumptions and examining emotional responses with the support of others that we learn and change. Affective learning is as important as the cognitive in experiential, transformative learning (Dirkx 2006; Merriam et al. 2007: 165).

Much has been written about discussion and how it can facilitate learning (Brookfield 2006, 2012; Brookfield and Preskill 1999), and dialogue from the times of Plato has been advocated as a method for presenting our world views and ideas, listening to others and participating in an exchange that can lead to understandings, insights and the generation of new knowledge. This is dialogue that involves the whole person: reason and emotions, rationality and feelings. In dialogue there is a need to listen with our whole being (Johannesen et al. 2008; Welton 2002) and to speak honestly and authentically from our experience and our knowing, both intellectual and tacit. Through this we become critical thinkers, actively engaged in creating our personal and social worlds (Brookfield 1987). Being able to listen and understand other people's points of view and their way of seeing the world is a cognitive and a relational activity (Wolvin 2010), it is a profound skill that is central to dialogue. There is certainly a place for technical dialogue but here we are considering dialogue in its broadest sense, where we engage as fully as possible. It is vital that the educator creates safe learning environments where dialogue, characterised by respect, curiosity, honesty, openness and good intent can take place. This sort of dialogue "manifests itself as more of a stance, orientation, or quality in communication rather than as a specific method, technique or format" (Johannesen et al. 2008: 54), and it includes critical reflection as we examine and question our own and other people's assumptions. As we contemplate and discuss alternatives it also becomes a creative process.

Brookfield (1987, 2011) stresses the role of discussion in developing critical thinking. He comprehensively outlines the conditions and principles of the learning context as well as the use of protocols and guidelines for discussion which are negotiated by the group. Importantly, he offers educators a range of methods and techniques that can be used to facilitate discussions (2006). Cruickshank and Fenner (2012) examined the use a range of activities including role play, games and multi-criteria decision-making in the Master's programme in Engineering for Sustainable Development, at Cambridge University; these are student-centred activities that introduce a range of themes including dealing with complexity, uncertainty, the concerns of different disciplines and groups of people, environmental limits and trade-offs. Their research on the use of these methods found that

using a range of activities challenged students' assumptions and developed awareness and competencies.

Case studies can be useful vehicles for understanding complex and often competing issues that need to be considered; traditional case studies present real situations and provide factual information such as financial reports, statistics, expert testimonies, press clippings, videos. Presenting a range of facts that highlight possible scenarios or opposing views and also a range of perspectives from different stakeholders helps increase knowledge and awareness of the issues and reveal the rationale behind decision-making which in turn helps to cultivate critical thinking. Simulations or games can be real-life case studies or simply be based on cases and include facts; and whilst being realistic and well researched, are composites. Students can take on the roles of different individuals such as consumers, employees, owners, other company representatives and institutions (local and global) in order to express and understand a range of views, interests, perspectives, values and beliefs. Through taking on roles in a case study or simulation people can learn actively without creating real consequences.

One can simulate diverse realities, play the games, manipulate reality and experience the resulting consequences, within the safety of the simulation. At the same time while one is testing alternative solutions one also learns much about one's self while creating shared experiences for all participants (Dieleman and Huisingh 2006: 842).

These methods also contribute to team-building, collaboration and the development of communication skills. This form of active learning is enjoyable and it can be creative, allowing learners to use their imagination for envisioning and designing. Case studies can provide a 'safe' way to facilitate discussions and can be an effective way to engage with difficult issues. Whether it is a local or global case study, it is important to include a wide range of perspectives, experiences and interests in order to provide as 'full' a picture as possible, from the point of view of government, business, community, clients and customers and the environment; those who will benefit and those who will not. Consequences for people and the environment, economy, society, culture are considered and new processes products imagined, discussed and negotiated.

Conclusion

It is now the recommended policy of both the United Nations and the European Union that countries should revise the way in which they prepare their national accounts to begin to address the kind of sustainability gap that is currently hidden within them (Porritt 2003: 9). Putting the principles of sustainable development at the centre of entrepreneurial learning can benefit companies, their processes, profits and also the individual entrepreneurial learners.

Methods employed for teaching an integrated model of sustainability learning in entrepreneurship education can be diverse, but the approach should be underpinned

by learning theories that promote self-directed, experiential, participatory and transformative learning. Experiential learning that involves real life situations is not always possible, but experiences in the classroom, with teachers and peers in a collective learning enterprise can be valuable, if they are thoughtfully constructed and facilitated. Dialogue and discussion can facilitate affective learning that includes developing emotional intelligence alongside cognitive skills. Students develop skills such as how to listen attentively, how to argue effectively, how to agree to differ; invaluable for professional, public and personal life. A plural approach is essential in entrepreneurial and sustainability learning, multiple perspectives and values need to be considered in both. Education for sustainability can be incorporated into frameworks for entrepreneurial education and add a robustness for considering the interrelation of economic, social and environmental concerns, not through crude trade-offs, but through the pursuit of mutually reinforcing benefits. It can help learning to promote good governance, healthy living, innovation, lifelong learning and forms of economic growth which secure the natural capital upon which we depend. This form of learning seeks to reinforce social harmony and to secure each individual's prospects of leading a fulfilling life (Porritt 2003: 13).

Education and learning with a discursive and critical foundation recognises that there are no simple solutions; there are instead paradoxes, risks and uncertainty. Reconfiguring pedagogical practices, how we teach and how we conceptualise learning is necessary in order to support learners to become entrepreneurs who are critical thinkers, reflective, and reflexive, and who are not afraid to challenge the boundaries of knowledge and to work for positive change.

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Alyson Jenkins has worked in environmental education, holding the position of education adviser for Wales at the RSPB (Royal Society for the Protection of Birds) and education officer at the National Wetland Centre; she also worked in development education writing teaching materials and training teachers. With this experience she became a specialist in Education for Sustainable Development and Global Citizenship and is at present completing a PhD on this subject in Adult and Community Learning. Alyson worked in adult education for many years as a tutor and project manager, she was a research manager in health science and has worked in Community Arts. For a number of years Alyson was a freelance consultant conducting research projects and evaluations on topics related to sustainability and Lifelong Learning. Alyson has a number of publications in the field of Education for Sustainable Development and Adult Education.

Chapter 5

Lifelong Learning for All: Our City's Future

Raúl Valdés-Cotera and Mo Wang

Abstract In this chapter, we will discuss the need to re-examine the traditional education system, so as to develop inclusive and sustainable education systems. This reflects the need to develop more complex skills and competences that allow individuals to participate in the economic, social and cultural environment, allowing them to remain in their places and play a positive role in their personal and societal development, as well as the development of their cities. It will conclude with examining UNESCO's role in supporting cities through the Key Features of Learning Cities, in empowering individuals and promoting social cohesion, and in enhancing economic development and cultural prosperity.

Introduction

Urbanization is increasing rapidly, particularly in developing countries. It is expected that by 2050, 70% of the world's population will live in cities (United Nations 2014, p. 1), and that 94% of people who move to cities in the next decades will come from developing countries (Schwab 2014). On the one hand, therefore, cities are sites of enormous potential; as the Director-General of UNESCO, Irina Bokova, pointed out at the first International Conference on Learning Cities, 'cities are our greatest source of growth, innovation and living together' (UNESCO Institute for Lifelong Learning 2014: 51). On the other hand, however, urbanization presents us with an unprecedented set of challenges. Cities are affected by, and in some instances contribute to, rising inequalities in opportunities, wealth, power, gender and health. Furthermore, rapid urbanization inevitably increases the gap between cities and small towns, villages and rural areas. Cities are responsible for most of the world's energy consumption and carbon emissions, but they also often

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bear the brunt of global challenges such as population ageing, conflict, violence, environmental degradation and the devastating effects of climate change.

As cities expand, municipal governments are under increasing pressure to find solutions to such challenges. The 2030 Agenda for Sustainable Development, adopted at the 2015 United Nations Sustainable Development Summit as an action plan for people, the planet and prosperity, emphasizes the critical role that cities will play in tackling global challenges. Furthermore, the eleventh Sustainable Development Goal centres on improving urban life, pledging to ‘make cities and human settlements inclusive, safe, resilient and sustainable’ (United Nations 2015c). To meet this goal, it is imperative that cities develop adequate responses to the learning needs of the world’s fast-growing urban communities. This will entail implementing policies and plans that enable citizens to acquire the skills and competences they need to contribute to economic, social, cultural and environmental development.

This chapter examines how cities are drawing on the power of lifelong learning to build inclusive, sustainable, creative and entrepreneurial societies that promote the health, well-being, prosperity and full participation of their citizens. The chapter begins by briefly summarizing the evolution of lifelong learning as a ‘new master narrative’ in education policy. It then outlines the development of the learning city concept, highlighting the important role played by the UNESCO Institute for Lifelong Learning (UIL) in the evolution of learning cities. Among the UIL-led learning city initiatives discussed here are two major conferences (the first and second International Conferences on Learning Cities), the establishment of the UNESCO Global Network of Learning Cities, the launch of the UNESCO Learning City Award and the publication of key documents such as the Beijing Declaration on Building Learning Cities, the Key Features of Learning Cities and the guidelines for Building Learning Cities. In describing these milestones, this chapter provides some noteworthy examples of cities that are using the learning city approach to empower citizens, promote social cohesion, enhance economic development and cultural prosperity and protect the environment.

Promoting Lifelong Learning for All as an Engine for Sustainable Development

As far back as 1972, UNESCO’s *Learning to Be: The World of Education Today and Tomorrow* (Faure 1972)—commonly referred to as the Faure Report—advocated lifelong education as the master concept for educational policies in both developed and developing countries. In recognizing that education was no longer the privilege of an elite or one age group only, the Faure Report marked the beginning of a period of optimism in international education policy. The Faure Report argues that education should be both universal and lifelong, thereby moving to a humanistic, rights-based and holistic view of education (Ouane 2011).

More than 20 years later, in 1996, UNESCO published a report entitled *Learning: The Treasure Within* (Delors et al. 1996). This report appeared in the same year as the Organisation for Economic Co-operation and Development's *Lifelong Learning for All* report (1996). Both documents emphasized the multiple contexts of learning and firmly linked lifelong learning to the economic, social, cultural and environmental challenges that societies and communities face (Yang and Valdés-Cotera 2011).

For UNESCO, Lifelong Learning is rooted in the integration of learning and living, covering learning activities for people of all ages (children, young people, adults and the elderly, girls and boys and women and men) in all life-wide contexts (family, school, community, workplace and so on) and through a variety of modalities (formal, non-formal and informal) which together meet a wide range of learning needs and demands. Education systems which promote lifelong learning adopt a holistic and sector-wide approach involving all sub-sectors and levels to ensure the provision of learning opportunities for all individuals (UNESCO 2015, p. 7).

Today, the importance of lifelong learning as a holistic and sector-wide approach to learning is widely recognized. Indeed, some have argued that lifelong learning has become a 'new master narrative' (Ioannidou 2014: 208) in education policy, promoting a certain understanding of how education systems should be built in order to meet the challenges of the knowledge society. This recognition is no longer confined to specific countries or regions; it also informs global education plans. For example, the important role played by lifelong learning in ensuring sustainable development is clearly reflected in the fourth Sustainable Development Goal on 'Quality Education', which aims to 'ensure inclusive and equitable quality education and promote lifelong learning opportunities for all' (United Nations 2015a).

Even though lifelong learning has become a global norm, it is still a major challenge for many countries to coordinate learning activities outside school and the workplace and integrate them into an education policy, as is ensuring that effective policies, strategies, systems and mechanisms are in place for a diversity of learning needs and life situations. There is, therefore, still a discrepancy in many UNESCO Member States between general advocacy on the one hand and a lack of clarity on the definition of lifelong learning on the other. This is leading to inefficient implementation of policies and strategies (UNESCO Institute for Lifelong Learning 2015a).

Promoting lifelong learning entails providing a full range of learning opportunities in order to enable people, in particular disadvantaged and vulnerable people, to learn anywhere and at any time. Several UNESCO Member States have recognized that one important approach to promoting lifelong learning in people's daily lives entails linking the recognition, validation and accreditation of the outcomes of non-formal and informal learning to various learning systems or national qualifications frameworks. Given the trend of globalization, urbanization and decentralization, a second approach exemplified in some Member States is the building of learning societies (villages, communities, cities and regions). With their relatively compact natures, high population densities and heavy concentration of existing

learning facilities, cities are uniquely placed to engage citizens from all sectors in lifelong learning. As the Faure Report pointed out, the city contains ‘immense educational potential—with its social and administrative structures and its cultural networks—not only because of the vitality of the exchanges that go on, but also because it constitutes a school for civic sentiment and fellow-feeling’ (Faure 1972: 162). In recent years, a growing number of cities have been developing innovative strategies that allow citizens of all ages to learn new skills and competencies, thereby transforming their cities into learning cities. Before providing concrete examples of such strategies, the following section will provide a brief overview of the development of the learning city concept.

The Development of the Learning City Concept

The modern concept of learning cities emerged in the early 1970s from the work of the Organisation for Economic Co-operation and Development (OECD) on lifelong learning, which focused mainly on Europe (Yang 2012). The concept was further developed in 1990 in the First International Congress on Educating Cities, which was organized by Barcelona City Council and involved representatives of more than 140 cities worldwide (Messina and Valdés-Cotera 2013). Two years later, the Second International Congress on Educating Cities, held in Gothenburg, Sweden, presented a report entitled *City Strategies for Lifelong Learning*, which was later published by the OECD (Hirsch 1993). This report states that cities are the most important geographical entities for organizing lifelong learning. The report also showcases examples of seven cities that were in the process of becoming learning cities. Since then, the learning city concept has spread. Illustrative examples of learning city initiatives can be found in many parts of the world. Learning cities have experienced particularly dynamic development in East Asian countries (Kearns 2015).

UIL, which has a wealth of expertise on lifelong learning, has organized a series of policy dialogues on the conceptual evolution and implementation of lifelong learning. During Expo 2010 in Shanghai, China—which centred on the theme ‘Better City, Better Life’—UIL, together with the Shanghai Municipal People’s Government, the Chinese Society of Educational Development Strategy and the Chinese National Commission for UNESCO, co-organized the Shanghai International Forum on Lifelong Learning. This forum focused on translating the discourse of lifelong learning into practical guidelines for building lifelong learning systems. More than 200 participants and experts from all over the world helped develop learning concepts and practices within a lifelong learning perspective. Twenty-four presentations were collected in a volume entitled *Conceptual Evolution and Policy Developments in Lifelong Learning* (Yang and Valdés-Cotera 2011), which discussed the evolution of the concept of learning societies and learning cities, focusing on the development of learning cities in the Republic of Korea and China.

UIL continues to maintain dialogue with its extensive networks of policymakers, researchers, practitioners and civil society. This dialogue led to the organization of the first International Conference on Learning Cities (ICLC) in 2013.

The First International Conference on Learning Cities

Together with the Ministry of Education of China and Beijing Municipal Government, UNESCO co-organized the first International Conference on Learning Cities (ICLC) in Beijing in October 2013. This conference brought together 550 mayors, city education executives and experts from 102 countries, as well as representatives of UN agencies, regional organizations, non-governmental organizations and multinational corporations. The conference adopted two key documents: the Beijing Declaration on Building Learning Cities and the Key Features of Learning Cities.

In affirming the vital importance of learning for the future of all human communities, the Beijing Declaration on Building Learning Cities defines a learning city as:

a city, town, village or community that effectively (1) mobilizes its resources in every sector to promote inclusive learning from basic to higher education; (2) re-vitalizes learning in families and communities; (3) facilitates learning for and in the workplace; (4) extends the use of modern learning technologies, (5) enhances quality and excellence in learning; and (6) fosters a culture of learning throughout life. In doing so, it will create and reinforce individual empowerment and social cohesion, economic and cultural prosperity and sustainable development (UNESCO Institute for Lifelong Learning 2014, p. 27).

With twelve areas of focus, forty-two key features and sixty possible measurements, the Key Features of Learning Cities describe the fundamental conditions for building a learning city. The six major building blocks of a learning city depicted in Fig. 5.1 reflect the importance of encompassing all modes of learning and levels of education, of incorporating life-wide contexts and of targeting learners of all ages. This holistic approach promotes the development of education systems which respond to a range of learning needs. The *Key Features* are the result of a long consultation process which involved input from global experts in several different fields and drew upon a range of well-established conceptual frameworks and indicators for measuring social and economic development at regional and international level. As a robust alternative way of monitoring progress, the *Key Features of Learning Cities* form a comprehensive checklist of action points necessary to help stakeholders build learning cities, transform political and theoretical discourses into concrete strategies and approaches, measure progress over time and evaluate the benefits of the strategies that have been put in place.

Since the first ICLC, the practice of building learning cities has further accelerated and expanded in communities worldwide. Many cities have started to adopt the learning city approach to tackle specific challenges and put the outcome documents of the first conference into action. Moreover, as called for by the

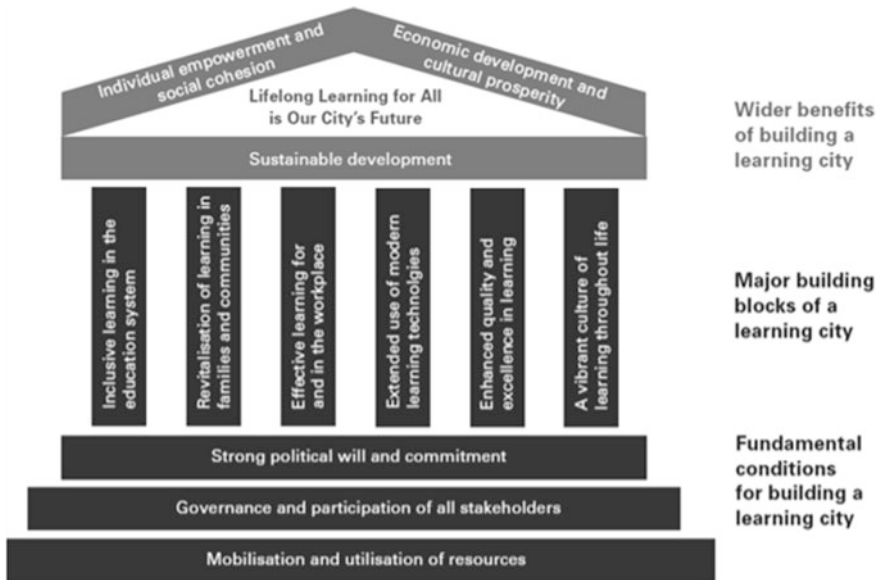


Fig. 5.1 Framework of Key Features of Learning Cities (UNESCO Institute for Lifelong Learning 2014: 29)

participants of the first ICLC, UNESCO has established the UNESCO Global Network of Learning Cities (GNLC) “to support and accelerate the practice of lifelong learning in the world’s communities” (UNESCO Institute for Lifelong Learning 2014: 5). The secretariat of this network, which is based in UIL, has been leading the following actions:

- facilitating and disseminating research on the enrichment of the concept of the learning city;
- developing tools and instruments for building learning cities;
- serving as a clearing house for successful practices in establishing learning cities;
- developing and providing capacity-development programmes for members and partners;
- promoting policy dialogue and peer learning among member cities; and
- advocating the importance of lifelong learning for all as an organizing principle for education policy and promoting policy reforms that support the building of learning cities (UNESCO Institute for Lifelong Learning 2015b: 4).

In addition, the UNESCO GNLC secretariat has published a collection of case studies of learning cities entitled *Unlocking the Potential of Urban Communities: Case Studies of Twelve Learning Cities* (Valdés-Cotera et al. 2015). This volume showcases successful practices in building learning cities in all five UNESCO regions. The cities described in the collection are role models, not in the sense that they have completed their development towards becoming a learning city (there is

no 'finishing line' for learning cities), but because they are the first to share their experiences. The showcased cities share their motivations for building learning cities, their vision, their legislative frameworks and their implementation approaches. They provide valuable insights on specific actions and programmes, providing know-how and inspiration for aspiring learning cities all over the world. They also reflect on specific challenges tackled in the process of building a learning city.

The case studies reveal that while motivations and approaches to building a learning city may differ due to cities' very different contexts, there are some unifying factors. Most cities recognize learning and community as interacting elements of city growth and emphasize the importance of monitoring progress through the *Key Features of Learning Cities*. All cities have strong and visionary aspirations for both their cities and their citizens, and all cities are creative and pioneering in their desire to respond to a changing world with new ideas. International experts from all five UNESCO regions worked with the secretariat of the UNESCO GNLC to devise a set of guidelines for building learning cities based on insights emerging from the collection of case studies. These guidelines are described in more detail below.

Guidelines for Building Learning Cities: Cities in Action

UNESCO's guidelines for Building Learning Cities aim to provide cities with strategic approaches for building dynamic and sustainable learning cities. The guidelines consist of a set of actionable recommendations that can be referred to at every stage of the process of becoming a learning city (UNESCO Institute for Lifelong Learning 2015b).

The guidelines are divided into the following six key areas of action, which should be tailored to every city's unique context: (1) developing a plan for becoming a learning city; (2) creating a coordinated structure involving all stakeholders; (3) initiating and maintaining the process with celebratory events; (4) making sure that learning is accessible to all citizens; (5) establishing a monitoring and evaluation process; and (6) ensuring sustainable funding (UNESCO Institute for Lifelong Learning 2015b: 1–4). The following sections will discuss these six areas of action, drawing on concrete examples from the collection of case studies.

Develop a Plan for Becoming a Learning City

The guidelines for Building Learning Cities emphasize that 'strong political leadership and steadfast commitment should be reflected in a concrete action plan' (UNESCO Institute for Lifelong Learning 2015b: 1). By taking stock of what has already been achieved and by identifying the main challenges that lie ahead, cities can develop a strategic plan and define their medium- and long-term objectives.

The Swansea Bay Entrepreneurial Learning City Region Plan is a good example of such an action plan. This plan involves city leaders and representatives of different sectors and focuses on the development of entrepreneurial capacity through lifelong learning. The ultimate aim of the plan is that by 2030, Swansea Bay City Region ‘will be a confident, ambitious and connected European city region, recognized internationally for [its] emerging knowledge and innovation economy’ (Swansea Bay City Region 2014). Swansea’s plan outlines the actions that need to be taken to harness the potential of learning to create a culture of entrepreneurship and develop a city of innovation. It is envisaged that this in turn will improve the regional economy and narrow the economic, education and skills gaps between deprived and affluent areas. Swansea Bay City Region is committed to ensuring that new opportunities are available to people from disadvantaged communities.

Swansea’s plan is very much in line with Sustainable Development Goal 8, which centres on ‘promoting sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all’ (United Nations 2015b). It is essential that cities work towards this goal by enabling citizens to develop the knowledge, skills and attitudes they need for the world of work and indeed for life in general. Pursuing inclusive and sustainable economic growth will help cities to tackle issues such as poverty and growing youth unemployment, and to respond effectively to developments such as mass migration, technological advances and the constantly shifting demands of the labour market.

Another sound plan for developing a learning city can be found in the city of Espoo, Finland. The Espoo Local Development Plan for Education 2020 states that Espoo aims to be a competent municipality known for its fairness, its commitment to residents and clients and its pioneering yet responsible approach. Espoo’s goal is to be a good place to live, learn, work and do business in, and to be a place where residents can have their say. Ensuring the well-being and inclusion of all its citizens is, therefore, a key objective. Providing every citizen with opportunities for lifelong learning plays an important role in achieving this objective. When drawing up the plan, the city authorities organized capacity-building workshops for various sectors and stakeholders in order to develop an understanding of what building a learning city involves. Finnish society is becoming more multicultural and diverse, which tends to be most immediately apparent in metropolitan areas. Espoo’s lifelong education services will continue to play a special role in helping newcomers settle into the city while maintaining their own cultural identity (Valdés-Cotera et al. 2015).

Create a Coordinated Structure Involving All Stakeholders

As all organizations and citizens are stakeholders in a learning city, the guidelines recommend creating ‘a structure that involves all stakeholders in building the learning city through dialogue and consensus’ (UNESCO Institute for Lifelong Learning, 2015b: 2). It is essential to create a learning city development committee

comprising representatives from different sectors, each of whom should have a concrete role to play. This committee should reach agreement on the principles for developing, implementing, monitoring and financing the learning city initiative.

For example, the City of Melton in Australia established the Community Learning Board (CLB) to provide a governance mechanism that gives communities and organizations a direct influence on designing and overseeing lifelong learning strategies addressing social and economic issues. Members of the CLB are appointed for four years or for the duration of a Community Learning Plan. Current members of the CLB include leaders from a wide range of sectors, including: business and industry; non-governmental organizations and not-for-profit organizations; employment services; state and independent primary and secondary schools; universities and vocational education providers; adult education; mature age learning; early learning; the health sector; disability education providers; community representatives; and the Victorian Department of Education and Early Childhood Development. The CLB is chaired by Melton's mayor.

One challenge that the City of Melton's CLB sought to address was the mismatch between the training opportunities offered in the city and the skills that are actually needed in the industries where jobs are available. The CLB showed entrepreneurial spirit by actively seeking out innovation, service and continuous improvement. To this end, it developed a new initiative called Building Melton Together, which takes a holistic, cross-sectoral approach in brokering relationships between a large number of stakeholders, including jobseekers, employment service providers, volume and domestic builders, building sub-contractors, education and training providers and relevant non-governmental and not-for-profit organizations. Of course, it will remain crucial for Melton to ensure that all stakeholders continue to have clearly defined roles and responsibilities in designing and implementing the learning city plan.

Initiate and Maintain the Process with Celebratory Events

The guidelines point out that 'the more people and organizations that react positively to the idea of a learning city and engage with it, the better its chances of flourishing are' (UNESCO Institute for Lifelong Learning 2015b: 2). One concrete way to generate enthusiasm in implementing lifelong learning is by holding events such as learning festivals, seminars and celebratory events.

A good illustration is provided by Cork City in Ireland, which has been running the Cork Lifelong Learning Festival since 2004. This festival invites all relevant organizations to exhibit their courses, products and materials and offer hands-on activities that encourage citizens to get involved. The festival asks the media to promote and celebrate learning while twin cities are invited to participate and share their experience, knowledge, ideas and best practice. The festival involves about 500 different events accompanied by a series of seminars and discussions.

Cork's Lifelong Learning Festival has successfully generated enthusiasm and stimulated broad public engagement in building the learning city.

Another example is the Spring in the Learning City Festival in Ybycuí, a city of 21,000 inhabitants in the North of Paraguay. The festival is part of the 'Ybycuí Learns and Develops' strategy, which encourages members of the community to teach and learn together. The Spring in the Learning City festival includes a parade with floats visually depicting lifelong learning, promoting the idea that everywhere can become a learning environment. Thousands of people participate in the festival, which also promotes recycling and the conservation of the environment. Besides drawing attention to lifelong learning and the development of the learning city, such a festival strengthens residents' pride and sense of community. Both Ybycuí's Spring in the Learning City Festival and Cork's constantly growing Lifelong Learning Festival are successful examples of how a city can showcase its efforts to create a learning city. Media attention and direct contact to residents offer invaluable opportunities for the promotion of the efforts these cities make throughout the year. Furthermore, such celebratory events renew all stakeholders' interests in the learning city agenda. Ultimately, the organizations participating and supporting these joyful events also benefit as they can exhibit their courses, products and materials and offer hands-on activities that encourage all citizens to get involved.

Make Sure that Learning Is Accessible to All Citizens

The guidelines explain that 'learning must be made enjoyable, available and accessible to all citizens so that they are inspired and empowered to continue learning throughout life' (UNESCO Institute for Lifelong Learning 2015b: 3). To facilitate this, a learning city must establish, promote and maintain community-based learning spaces and provide resources for learning in families and communities.

The Republic of Korea is one of the few countries in the world to have established a constitutional obligation to promote lifelong learning to all its citizens (Article 31 [5], Constitution of the Republic of Korea 1987). The national government sees building a learning city as a means of increasing citizens' quality of life, social integration and sense of community (NILE 2012). One example of a highly successful learning city initiative in the Republic of Korea is Namyangju's '1-2-3 Lifelong Learning Infrastructure' project, which is improving access to learning for citizens of all ages. As part of this project, citizens have turned unused spaces around the city into community learning spaces known as 'Learning Lighthouses'. The government of Namyangju ultimately intends to ensure that no resident is more than a ten-minute walk away from the nearest Learning Lighthouse. These community learning spaces not only make learning accessible to virtually all citizens; they also promote community, cooperation and active citizenship.

Many people in Amman, Jordan, who could not finish basic education, possess valuable knowledge and skills. However, such knowledge and skills are not always recognized. To help remedy this situation, Amman provides special support in the

form of flexible arrangements for marginalized groups. The city is also developing procedures to identify, validate and accredit the learning outcomes of non-formal learning. Amman's 'Jeera' project, a collaborative initiative between the Arab Education Forum and Greater Amman Municipality, aims to combat the marginalization of informal and non-formal learning and to encourage citizens to recognize that they all have valuable roles to play both as teachers and learners. The project focuses on Amman as a 'Learning and Convivial City', as the concepts of neighbourliness, hospitality and conviviality have a rich tradition in Arab culture and are central to Jeera's efforts to provide the citizens of Amman with positive learning experiences beyond the structures of formal education. The ultimate objectives are not just to promote lifelong learning at a community level throughout the city, but also to help promote integration and a sense of belonging in this multicultural city.

Cities such as Namyangju and Amman are making great efforts to make learning accessible to as many of their citizens as possible. By strengthening connections between formal education and training and the world of work, by supporting cross-sector cooperation, by promoting non-formal and informal learning settings and by fostering entrepreneurial skills, cities can offer all citizens—especially those from disadvantaged backgrounds—more diverse and flexible development opportunities in both their private and professional lives.

Establish a Monitoring and Evaluation Process to Ensure Learning City Progress

The guidelines emphasize the importance of continuously monitoring and evaluating progress made in building a learning city.

In 2001, Beijing began developing a set of evaluation indicators for learning districts/counties, sub-districts and townships, enterprises and schools to steer learning society development activities. This led to the publication in 2013 of the Beijing Evaluation Index, which enables city authorities to monitor the performance of the learning city. This index, which incorporates elements of the Key Features of Learning Cities but also draws upon the local context, is based on the 'Structure–Process–Product' model (Wu et al. 2014). This model has three tiers. The first tier comprises the following four indicators: (1) 'Guarantee of input and conditions', which measures structure and is comparable to the 'fundamental conditions' in the Key Features of Learning Cities; (2) 'Development of lifelong education and learning service systems' and (3) 'Development of learning communities and organizations', both of which measure process and are equivalent to the 'building blocks' in the Key Features; and (4) 'City development and management innovation', which measures the benefits of the learning city and is the counterpart of the 'wider benefits' in the Key Features. These four tier-one indicators are further broken down into eighteen tier-two indicators and seventy tier-three indicators

covering factors such as policy, legislation, media coverage, organization, management, funding, human resources, research, innovation and implementation across all levels, from preschool to education for older people, immigrants and disadvantaged groups. In 2014, the Beijing Evaluation Index was used to conduct a round of assessments on learning city developments in four districts and counties. This pilot exercise found that the evaluation index can be very useful for measuring a district or county's stage of development as well as its strengths and challenges. However, the exercise also revealed the necessity of adjusting certain indicators to local contexts. The results of the exercise were used to refine and improve the evaluation index for monitoring and evaluating the development of learning cities in Beijing.

Other cities around the world have not yet defined indicators for monitoring progress, but they are nonetheless able to report on the outcomes of specific strategies. For example, the learning city initiative has helped residents of all ages in Mexico City to become healthier, develop greater civic and environmental awareness, and be better prepared for natural disasters. Mexico City's SaludARTE programme, for instance, aims to improve the health, nutrition, personal hygiene, well-being and civic awareness of public primary school children in some of the most disadvantaged areas of Mexico City. SaludARTE has had an impact on children's lives, as an evaluation conducted by the National Institute of Public Health has demonstrated (Valdés-Cotera et al. 2015: 107). This evaluation found that the programme increased children's physical activity, as demonstrated by the fact that the amount of time they spent watching television fell by 7%. There was also a notable decrease—from 21.3 to 17%—in the levels of obesity among children in schools participating in the programme. In addition, children's dental plaque decreased by 9%, and almost 15% of the children participating in the programme acquired the habit of washing their hands before and after eating.

Evaluating the effectiveness of learning cities to solve local problems and improve social conditions is complex. However, it is the only way to assess the benefits of the strategies that have been put in place.

Ensure Sustainable Funding

One of the biggest challenges facing urban communities is securing sufficient financial resources to build and maintain the basic structure of the learning city. The guidelines state that 'in order to realize the multiple benefits of becoming and sustaining a learning city, multiple sources of sustainable funding should be secured and allocated in a fair way'.

Multistakeholder partnerships can help ensure that a learning city has sustainable funding. One good example of this approach can be found in the City of Balanga in the Philippines, where the learning city project centres on becoming a 'university town'. By replicating some of the structural features of renowned university towns around the world, Balanga aims to create an environment that encourages learning

not just among university students, but also among citizens of all ages. Public–Private Partnerships (PPPs) have enabled the City Government of Balanga to implement several projects that are part of the university town master plan. The redevelopment of the Plaza Mayor to make it a public learning space, for example, was realized through investments made by the private sector that support the city's vision.

The guidelines identify a wide range of potential collaborators for PPPs, including companies, foundations, philanthropists, international partners, local and national governments and supranational organizations. Considering such partners as stakeholders in developing learning cities is crucial for maintaining their support (see also Section “[Create a Coordinated Structure Involving all Stakeholders](#)”), while celebratory events, as discussed in Section “[Initiate and Maintain the Process with Celebratory Events](#)”, present good opportunities for strengthening partnerships with stakeholders. Finally, monitoring and evaluation (see Section “[Establish a Monitoring and Evaluation Process to Ensure Learning City Progress](#)”) enable learning cities to prove that learning resources provided by stakeholders are being put to effective use.

Looking at the twelve role models discussed in *Unlocking the Potential of Urban Communities: Case Studies of Twelve Learning Cities*, it is clear that, when it comes to ensuring sustainable funding, there is no such thing as a one-size-fits-all approach. While the guidelines offer some useful suggestions, such as developing cost-sharing mechanisms through PPPs, every city will find itself in a unique position.

The Second International Conference on Learning Cities

To celebrate the progress that has been made in promoting lifelong learning in cities across the world since the first International Conference on Learning Cities (ICLC) and to discuss strategic directions for sustainable learning cities, more than 650 people—including ministers, vice-ministers, mayors, vice-mayors, education executives, education experts and representatives of UN agencies, the private sector and regional, international and civil society organizations—travelled from 95 countries to gather in Mexico City for the second ICLC. The theme of the conference, which took place in September 2015, was ‘*Building Sustainable Learning Cities*’. The term ‘sustainable learning cities’ refers to the stability and vitality of the learning city itself, but also to environmental, economic, social and cultural sustainability (Juceviciene 2010: 420).

The conference gave participants an opportunity to discuss ideas, share experiences and build synergies. It took place just after world leaders had met in New York to adopt the Sustainable Development Goals that will define the next fifteen years of human development. As mentioned above, learning cities have an important role to play in implementing the global Sustainable Development Agenda.

Participants shared ideas on developing innovative strategies with a focus on lifelong learning to empower citizens, improve social cohesion and equality, increase economic and cultural prosperity and protect the environment. They identified effective ways of nurturing the kind of multistakeholder partnerships that are essential for fulfilling the Sustainable Development Agenda. Discussions focused not only on how learning cities can help citizens to develop the attitudes, skills, values and knowledge to secure a sustainable future, but also on how the process of building learning cities can itself be sustained.

The UNESCO Global Network of Learning Cities (GNLC) officially opened to membership at the conference. The UNESCO GNLC does not ask for a membership fee, and all cities willing to adopt the learning city concept are eligible to join. Some of the key benefits of becoming a member of the UNESCO GNLC include the following:

- receiving guidance and support during the process of building a learning city;
- being part of a dynamic network and strengthening the city's own partnerships and networks;
- receiving recognition for the efforts and showcasing the actions of the city; and
- being eligible for the UNESCO Learning City Award (UNESCO Institute for Lifelong Learning 2015a).

One month after the conference took place in Mexico City, the secretariat of the UNESCO GNLC started receiving the first membership application forms. These forms provide basic information about the cities' profiles, motivations for adopting the learning city concept, plans for implementing lifelong learning, challenges faced and support requested. This information will enrich the network's Website, which will feature case studies illustrating how learning cities all over the world are developing.

The conference also saw the launch of the biennial UNESCO Learning City Award. The UNESCO Learning City Award is not an award of excellence, nor does it constitute an official label. Instead, its purpose is to recognize and reward outstanding efforts devoted to developing learning cities in communities around the world. It is awarded to cities that, by putting in place the building blocks of a learning city, have achieved exceptional progress in promoting lifelong learning (UNESCO Institute for Lifelong Learning 2015c). The inaugural award was conferred on twelve cities that had made outstanding progress in implementing the Key Features of Learning Cities since the first conference: Melton (Australia), Sorocaba (Brazil), Beijing (China), Bahir Dar (Ethiopia), Espoo (Finland), Cork (Ireland), Amman (Jordan), Mexico City (Mexico), Ybycuí (Paraguay), Balanga (Philippines), Namyangju (Republic of Korea) and Swansea (United Kingdom).

The conference culminated in the adoption of the Mexico City Statement on Sustainable Learning Cities and the Guidelines for Building Learning Cities. The Statement identifies strategic directions for building sustainable learning cities and outlines eight action points to further the development of learning cities and to ensure lifelong learning as a driver of social, economic and environmental sustainability in cities throughout the world (UNESCO Institute for Lifelong Learning

2015d). As discussed in more detail in Section “[Establish a Monitoring and Evaluation Process to Ensure Learning City Progress](#)” above, the Guidelines are a set of actionable recommendations for becoming a learning city.

The conference also led to the development of the $3 \times 3 \times 3$ Youth Statement on Learning Cities, which was devised after the conference with the support of youth delegates. The Youth Statement defines three recognitions, three calls upon UNESCO, three encouragements for local and national governments and three commitments from the youth to help build learning cities (UNESCO Institute for Lifelong Learning [2015e](#)).

Conclusion

This chapter has shown how cities in different contexts have formed a variety of strategic approaches to developing into a learning city. These cities' specific social and economic realities provide the foundation for their approaches and shape the main 'themes' that are pursued, such as entrepreneurialism, creativity, health and inclusivity. What the cities have in common is that they all add a well-organized lifelong learning dimension to sustainability in all its aspects: social, economic, cultural and environmental.

The learning city approach is a practical, holistic and comprehensive way to implement lifelong learning in all sectors and at all levels, from families, communities and municipalities to national levels. Learning cities foster inclusive and sustainable learning systems that provide broad and flexible lifelong learning opportunities through formal and non-formal pathways. They thereby help create inclusive, sustainable, creative and entrepreneurial societies that promote the health, well-being, prosperity and civic engagement of their citizens.

This chapter also described how the rapidly growing UNESCO Global Network of Learning Cities is supporting the practice of lifelong learning. Given the critical role that cities will play in tackling global challenges, the network represents a unique platform for implementing the 2030 Agenda for Sustainable Development at the local level.

While learning cities are making great progress, much remains to be done. UNESCO will continue expanding the UNESCO Global Network of Learning Cities and synchronizing its actions with cities and partners to ensure the development of education and lifelong learning.

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Authors Biography

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Part II
Entrepreneurial Skills and Attitudes

Chapter 6

Entrepreneurial Learning: Knowledge, Skills, Behaviours and Attitudes-An Introduction

Gay Haskins

Abstract In this chapter, Gay Haskins introduces the section on Entrepreneurial Learning: skills, behaviours and attitudes by teasing out new definitions of learning in general and their relevance to entrepreneurial learning. Gay provides a contextual framework for the following five papers showing the unique contribution of each to the overall picture.

Over the last thirty or so years, there has been increasing discussion and emphasis on the importance of education that is really meaningful and results in real learning. But what is learning and how do we learn? How do we make learning happen? And what does entrepreneurial learning involve? What kinds of skills, behaviours and attitudes is it trying to develop? What are some innovative approaches to the development of entrepreneurial learning around the world?

From Teaching at, to Learning with

If you put the question “What is learning?” to twenty people in a room, you would be sure to come up with many different answers. But there would be general agreement that true learning involves both acquiring knowledge and using knowledge. It is likely too that there would still be general acceptance of a definition offered in 1980 by Dale S. Beech in *Personnel: The Management of People at Work* (Macmillan 1980) that learning is the process by which skills, knowledge, habits and values and attitudes are acquired and utilised in such a way that behaviour is modified.

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In many parts of the world, conventional teaching is led and dominated by the teacher as expert, handing down knowledge. Frequently, it is a one-way flow of information: the teacher gives and the student takes. Thus, in the delivery of educational programmes, we find that a teaching emphasis differs from a learning emphasis. A teaching emphasis is led and dominated by the teacher as expert, handing down knowledge. And it can work. One can be truly inspired by a great lecture. But it is not the only pre-eminent route to learning.

Indeed, there are many pathways to learning beyond conventional classroom teaching. Many of these are developed and used with the aim of using knowledge and experience. Just a few include the following: day-to-day problem-solving; on-the-job learning (learning by doing); action/reflection learning; learning through feedback and action plans; observation of peer behaviour and peer group consulting; experimentation and “imagineering”; brainstorming, conversation, discussion and debate; distance and online learning; outdoor training, site visits and all kinds of investigative learning; and learning through the arts (music, painting, poetry, for instance).

Most of these approaches require courage on the part of the educator. They cannot rely on imparting knowledge. They must work very closely with those that they are seeking to educate and really focus upon their learning priorities. They require a leap from “teaching at” to “learning with”.

Skills, Behaviours and Attributes

The need for “learning with” is particularly important in the delivery of Entrepreneurial Learning. To be effective, the educator must look carefully not only at imparting knowledge but also (and particularly) at the skills, attributes and behaviours that they are aiming to foster. The lists below (adapted from an original list developed by Allan Gibb) give some examples of entrepreneurial skills, behaviour and attributes.

- **Entrepreneurial Skills:** problem-solving; persuading; negotiating; strategic thinking; creative and innovative thinking; articulating ideas; selling; proposing; decision-making under uncertainty; holistic task management; social skills; and social networking;
- **Entrepreneurial Behaviours:** opportunity seeking; creative problem-solving; grasping/organising opportunities; rapid use of judgement; taking initiatives; managing interdependence; persistence in seeing things through from beginning to end; and concern for quality; and
- **Entrepreneurial Attributes:** ambition; self-confidence; strong ego; autonomy; “natural” leadership; achievement-orientated; “fixer”; determination; hard-working; commitment; action orientation; gets things done; and perseverance.

Entrepreneurial Learning Programmes

In this section, we focus on five programmes, each developed in different parts of the world, in which entrepreneurial learning has happened—but each in very different ways. Excitingly, they involve a wide variety of learning approaches and seek to develop a number of the skills, behaviours and attributes shown above.

- In their highly stimulating paper, “Developing and Evaluating Enhanced Innovation Thinking Skills in Learners”, Fiorina Mugione and Andy Penalula describe an innovative UNCTAD initiative to train over 350,000 entrepreneurs in 37 developing countries. Called the *EMPRETEC* programme, it focuses on the development of ten personal entrepreneurial competencies and its curriculum includes experiential learning delivered by interactive teaching methods that incorporate practical experience and encourage learning by doing. Particularly fascinating is the paper’s reference to the need for the stimulation of “breadth of thinking” and of new neurological studies that indicate that “unless learners are provided with opportunity to try and experiment with breadth as opposed to depth of thinking, and to thus form new neurological structuring that enhances creative capacity, their ability to act in this way may be limited by the physicality of their brain as it evolves”.
- In the second paper, “Women Entrepreneurs in São Paulo, Brazil”, Tales Andreassi and Maria José Tonelli focus on the significant impact of the *10,000 Women Programme* on the city of São Paulo, emphasising the value of programmes that focus specifically on women entrepreneurs. This programme incorporates both access to knowledge of business disciplines and to initiatives available within the city to support entrepreneurship and lengthy debriefing sessions for experience sharing between participants. The formation of a network to support women entrepreneurs has emerged. This has had a significant impact beyond the classroom experience.
- The third paper, “Sustaining Entrepreneurship Education in Hong Kong as a Learning City through Partnership Building” by Christina Wai-Mu Yu and John Chi-Kin Lee, focuses upon the emergence of Entrepreneurship Education in Hong Kong, where SME’s provide 47% of the jobs and yet enterprise start-up rates are rather low. It focuses particularly on an initiative in Schools, the team-based *Teen Entrepreneurs Competition*, which ran annually in Hong Kong between 2003 and 2010. The competition focussed on student-centred learning through engaging fully and actively in a complete business venture process and through focusing both on business knowledge and on the practical skills necessary for running a small business. Importantly, the paper concludes that “Entrepreneurship Education could be flexibly and creatively built into the existing school education”, a demand that should surely be made in many other countries of the world.

- The fourth paper takes us to Wales, where increases in productivity are a key challenge. In “The Role of Entrepreneurial Leadership in City Region Economies; a Case of Developing Small Firm leaders”, Louisa Huxtable-Thomas and Paul Hannon describe a highly successful leadership programme, *Leading Growth*, specifically developed to stimulate new job opportunities and to contribute positively to the Welsh economy. They stress the need for a learning experience that is “highly contextualised and relevant; based on specific challenges and opportunities; associated with a clear need and a tangible action; action-oriented and allowing for reflection on prior actions and decisions; encouraging storytelling; testing out new ways of thinking and acting; learning from respected and trusted peers; and living with the emotional roller coaster of successes and failures”. The paper is rich in many respects, for instance: its description of the design of the programme and the concept of a “ladder of experiential learning”; the use of learning outcomes linked to emotional intelligence models; and its discussion of the positive impact of learning and of gender specific learning.
- The final paper, “From Student to Enterprising Researcher” provides a refreshing story of Owen Bidder’s time at Swansea University and his transition from business-adverse undergraduate zoology student to his time studying for a master’s degree in environmental biology when, to his surprise, one of the course modules asked him to write a grant application for a project of his own invention. All of a sudden, he found that, “I started talking to people about my projects, trying to explain why they were important, why they should be interested, I was selling all the time”. This proved to be the start of an exciting journey—PhD studies in biological sciences which included a residential summer school designed to develop entrepreneurial skills, exposure to interdisciplinary team work (and new ways of looking at problems), the successful development of a very innovative new product (and the trials and tribulations of selling it)... and much, much more. He concludes, “I believe my experience shows why enterprise skills are useful, even to those that do not intend to start their own businesses, and demonstrates the value of being an enterprising researcher.”

These five examples show entrepreneurial learning taking place in five very different contexts. They demonstrate the value of entrepreneurial learning both to countries, cities and regions and to individual learners. They illustrate the need for design tools beyond conventional classroom teaching and, in particular, the need to focus not only on knowledge but, particularly on the competencies, skills, behaviours and attitudes.

Author Biography

Gay Haskins is Associate Fellow, Saïd Business School, University of Oxford. She has worked for over thirty years in the field of management education and has been Dean of Executive Education at Saïd Business School, the Indian School of Business in Hyderabad and London Business School. She was also Director General of the European Foundation for Management Development (EFMD) in Brussels, a major international association, acting as a catalyst to promote and enhance excellence in management development around the world. Earlier, she was Director of The Economist Newspaper's conferences and before that worked for the Government of Ontario, Canada and as a consultant for what is now Deloitte's. She originally trained as a teacher of drama and, as a result, has consistently encouraged the contribution that the arts can make to leadership development. She obtained her MBA at the Schulich School of Business in Toronto. She is a member of the International Advisory Boards of the University of Dublin's Innovation Academy and of the international business school, EADA in Barcelona, a founder member of the European Women's Management Development Network (EWMD) and an Honorary Fellow of the National Centre for Entrepreneurship in Education (NCEE).

Chapter 7

Developing and Evaluating Enhanced Innovative Thinking Skills in Learners

Fiorina Mugione and Andy Penaluna

Abstract Utilising local thinking for an international audience, the United Nations Conference on Trade and Development (UNCTAD) is undertaking a supervised research project at the International Institute for Creative Entrepreneurial Development (IICED) in the University of Wales Trinity Saint David, Wales, UK. This develops a new curriculum that aims to enhance innovative capacity within learners on educational programmes—delivered to thirty-seven Empretec countries. Policy implications are also drawn for governments to consider, specifically, enhancing entrepreneurial education and skills development and facilitating technology exchange and innovation. Findings from empirical data point to the significant role of education in developing innovative capacity, but current student assessment practices may be hindering development. Frameworks have been developed that assist the evaluation and assessment of student performance beyond knowledge acquisition. This is important, because in an ever-changing landscape knowledge is increasingly temporary and the ability to harness meaningfully and flexibly breadth as well as depth of knowledge, at appropriate points in time, becomes a new goal.

Introduction

Utilising local thinking for an international audience, the United Nations Conference on Trade and Development (UNCTAD) is undertaking a supervised research project at the International Institute for Creative Entrepreneurial

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Development (IICED) in the University of Wales Trinity St David in Swansea. The research project is being undertaken by UNCTAD's Chief of Entrepreneurship (Mugione) and supported by IICED's Director (Penaluna). It is further informed by IICED's international networks and associated events, for example in 2014, IICED held an International Summit of Entrepreneurial Educators that attracted speakers from thirty-two countries (IICED 2014). This chapter is intended to offer insights into the research project and its associated activities.

Entrepreneurship enhances productivity growth and can help find practical business solutions to social and environmental challenges. It also has the potential to contribute to specific sustainable development objectives, such as the employment of women, young people or disadvantaged groups. In this way, entrepreneurship contributes to the reduction of economic and social inequality, as well as to the income gap that persists in many countries.

Moreover, the most effective entrepreneurship development programmes are part of a holistic and coherent policy framework that takes into account the complementary roles of the government, private sector and donor community. International policymakers are looking to adopt a comprehensive policy approach. However, many developing countries encounter challenges in designing and implementing entrepreneurship policies in a coherent and coordinated manner. Moreover, financial support is uncertain in most developing economies; hence, a reliance on innovative capacity becomes paramount.

As a result of the Multi Year Expert Meetings, UNCTAD has developed an Entrepreneurship Policy Framework (EPF) and Implementation Guidance that aims to support developing country policymakers and those from economies in transition in the design of initiatives, measures and institutions to promote entrepreneurship.

The framework, a direct result of three years of UNCTAD's research and engagement with international experts and government representatives, outlines key policy areas that have a direct impact on entrepreneurial activity. These are:

- Formulating a national entrepreneurship policy
- Optimising the regulatory environment
- Enhancing entrepreneurship education and skills development
- Facilitating technology exchange and innovation
- Improving access to finance
- Promoting awareness and networking (UNCTAD 2012: 2).

Of course, national entrepreneurship strategies need to be tailored to each country's specific conditions and the most appropriate policy packages depend on the existing level of entrepreneurship and the structural characteristics of a country. Pre-conditions for any programme fostering entrepreneurship are the existence of sound macroeconomic conditions, enabling business environments and positive investment climates. Less obvious, however, is the capacity of entrepreneurs to become flexible adaptable 'knowledge harvesters' who are capable of seeking and finding opportunities, usually through the solving of problems that others may not

as yet have identified. The specific dilemma of youth education is also cause for concern (Chigunta 2002: 10).

As one example, based on the EPF, UNCTAD assisted the government of Ecuador in developing a national strategy to develop an ecosystem for Entrepreneurship and Education. The challenges facing entrepreneurs is showcased in learning sessions through the story of a young boy named Pedro. The story of Pedro is similar to that of many youngsters in any developing country, so it is used to illustrate the difficulties and the challenges faced by today's entrepreneurial youth.

When Pedro was 10 he was selling newspapers to help his family gain income. At 16, he attended high school thanks to a lot of efforts made by his parents. He was however bored at school and felt he was not acquiring skills useful for the job market. He managed to graduate at 21. Without any support and advice readily available, he was lost on how to start up his own business he always dreamed about. Yet, he managed to overcome all the administrative difficulties and launched a hot dog food cart. Without access to credit and unable to grow customers, his business failed a few years later. Scared to fail again, he returned to selling newspapers in the street. All his life Pedro faced roadblocks that a lot of young entrepreneurs encounter in the business environment (UNCTAD/Mugione 2014 presentation at the Swansea Learning City Symposium).

This situation can be reversed by building an enabling policy environment. We know that successful entrepreneurship requires ideas, opportunities and 'entrepreneurial spirits' and though important, not simply business acumen. In developing nations, there are often several individuals who embody these characteristics, but lack the knowledge, funds or self-confidence to pursue their business ideas.

One of the pioneering programmes in the United Nations effort to develop entrepreneurship that embodies this understanding is Empretec, a programme that instils behavioural change into a select group of promising entrepreneurs (Empretec 2015: 5). The programme started in 1988 in partnership with the United Nations Development Programme. Under the leadership of UNCTAD and its public and private partners and donors, the Empretec programme has engaged more than 600 local certified trainers to train over 350,000 entrepreneurs in 37 developing countries and economies in transition. The pipeline to becoming entrepreneurial in these countries is complex, but research indicates that necessity often overrides intention (Youth Business International 2012; Youth Business International 2013: 9) and innovative capacity needs to be encouraged and nurtured in an entrepreneurial context, especially as education appears to be doing little to support entrepreneurial development.

Empretec provides a one-stop-shop for information and business training. By stimulating public-private sector partnerships and developing institutions with forward-looking advisory boards, Empretec plays a major role in connecting entrepreneurs with institutions. Empretec is based on behavioural approaches and places significant emphasis on the identification, selection and recruitment of workshop participants (Empretec 2014). This is done through a combination of pre-screening tests, a behaviour-focused interview and a business-related interview. The Empretec Training Workshop currently comprises modules focusing on the ten

personal entrepreneurial competencies developed by McClelland (1987) and informed by Amabile's (1992) discussions on creativity and youth. The curriculum includes experiential learning delivered by interactive teaching methods that incorporate practical experience and encourage learning by doing, in contrast to more traditional forms of didactic/academic learning.

McClelland (1987, 1989) developed the Empretec methodology at Harvard University, basing it on research findings that indicated that everyone has an inner motivation to improve. This 'motive for action' is divided into three motivational categories: achievement, affiliation and power. The ten personal entrepreneurial competencies that form the basis of the Empretec Training Workshop are:

1. Opportunity seeking and initiative

Entrepreneurs seek opportunities and take the initiative to transform them into business situations.

2. Persistence

When most people tend to abandon an activity, successful entrepreneurs stick with it.

3. Fulfilling commitments

Entrepreneurs keep their promises no matter how great the personal sacrifice.

4. Quality and efficiency

Entrepreneurs try to do something better, faster or cheaper.

5. Calculated risk taking

Taking calculated risks is one of the primary concepts in entrepreneurship.

6. Goal setting

This is the most important competency because none of the rest will function without it. Entrepreneurs set goals and objectives that are meaningful and challenging.

7. Information seeking

Entrepreneurs gather information about their clients, suppliers, technologies and opportunities.

8. Systematic planning and monitoring

Systematic behaviour means acting in a logical way. Planning is deciding what to do and monitoring means checking.

9. Persuasion and networking

Entrepreneurs influence other people to follow them or do something for them.

10. Independence and self-confidence

Entrepreneurs have a quiet self-assurance in their capability or potential to do something (Empretec 2011: 6).

Empretec teaches thirty behaviours associated to these competencies, and all studies are undertaken using experiential learning approaches that can be contextualised to the learners' environment. The programme then builds on this by adopting an interdisciplinary perspective and taking into account research aimed at synthesising existing studies on competencies and behaviours of innovators.

Following UNCTAD's interest in a paper by Penaluna and Penaluna (2006) that utilised alumni experience to review teaching and learning that had taken place in Swansea, Penaluna, now Chair of Enterprise Educators UK (EEUK), was invited to speak at UNCTAD in January 2011. Following his presentation at the international Multi Year Experts Meeting in Geneva, UNCTAD became aware of gaps in provision and a lack of understanding related to the development of creative capacity within learners (UNCTAD/Penaluna 2011).

In the UK, the Quality Assurance Agency for Higher Education (QAA) had engaged Penaluna to lead and develop a new national guidance framework, the first of its kind in the UK university sector (QAA 2012). This addressed the views and concerns of over 250 expert entrepreneurial educators who, in 2010, joined together to create the International Entrepreneurship Educator's Concordat (IEEC2010 Concordat 2010). Supported by Welsh Government, and in collaboration with two expert UK bodies, Enterprise Educators UK (EEUK) and the National Centre for Entrepreneurship in Education (NCEE), definitions evolved that distinguished between the development of business skills (QAA 'entrepreneurship' definition) and the broader innovation skills (QAA 'enterprise' definition) (For full definitions see QAA 2012: 8).

These interventions had much in common with the work of Empretec and their evolving understanding of successful entrepreneurs. Subsequently, Mugione, Chief of the Entrepreneurship Section at UNCTAD, initiated a sabbatical study year at University of Wales Trinity Saint David, so that she could undertake additional research related to the discussions that followed Penaluna's 2011 presentation at UNCTAD in Geneva. This Chapter provides insight into this work, which is ongoing and evolving.

Entrepreneurship and Innovation—Understanding Creative Thinking

Before we enter into further discussion, essential premises need to be clarified. For example, when we hear about a new idea or new initiative, it usually comes as something of a surprise. If the information has been heard before or is easily predicated, it fails to meet the surprise factor that we expect. However, if explained

well, we can usually see the mental connections that the innovative person has made, and sometimes even wonder, ‘Why didn’t I think of that?’

Understanding such thinking after the event is relatively straightforward, because we are simply analysing the information and tracking the links that have been made, so we can see the journey of discovery with clarity. This is often the way that entrepreneurship is taught; it looks to past events in the hope that they will inform new ideas. However, it also begs an important question, if we seek future visioning skills development, and the educators cannot therefore predict the outcome, how can they create a known target to measure performance against (see also: Christansen 2013; O’Connor 2008), and how can they assess their students’ progress or provide a grade? It leads an educator to ask, what metrics do we need and what learning needs to take place?

To add emphasis to this point, traditionally, learning outcomes are specified that clarify what the educator wants a student to learn, and what measurements will be utilised when grading the work. The results are usually compared to pre-existing knowledge and thought leaders in the field. However, if we do not know the answer beforehand because it will be new and original, we have to revisit this approach. The innovative entrepreneurial mind may well discover a solution that the educator has not foreseen or may provide new perspectives on a problem that the experts have not considered in the literature.

Moreover, the generation of alternative ideas and the ability to see multiple solutions that are different and varied requires the ability to make links and connections from as broad a knowledge base as possible, something that sits against the traditional silo approaches we find in subject driven education. Often termed ‘divergent thinking’, it places emphasis on drawing into play as many factors as can be found, and discarding them analytically in following phases of ‘convergent thinking’—where appropriateness to the goal or problem to be solved utilises more traditional thought processes. However, in the simplest of terms, the more ideas generated through diverse mental links the more opportunities there are for new discoveries. Goal-driven and target-driven assessment of learner performance focuses on the latter stage and offers little or no evaluation of the breadth of thinking that preceded the solution gathering process. Moreover, in an era of unprecedented access to information through the internet, the skills of harvesting potential knowledge from a broad spectrum of sources in order to provide multiple solutions to choose from, becomes a key goal of this aspect of the learning process (Gliddon 2006).

Although beyond the remit of this chapter, we must also take into account recent advances in cognitive neuroscience, where micromolecular studies into brain development, including the role of emotion and reward mechanisms, offer significant new insights that support this argument (European Commission 2014; Newton 2013; Kounios et al. 2006). These neurological studies indicate that unless learners are provided with opportunity to try and experiment with breadth as opposed to depth of thinking, and to thus form new neurological structuring that enhances

creative capacity, their ability to act in this way may be limited by the physicality of their brain as it evolves. (For a full discussion see Penaluna et al. 2014. Also see Chap. 15 of this book.)

We now know, for example, that different physical areas of the brain offer support to problem solving through ‘insight’ as opposed to the more traditionally evaluated analytical processes (Ollinger and Festler 1997), and that intelligence and creativity are not necessarily linked. Insight is when diverse connections suddenly make sense in what, to the learner, appears to be in a sudden moment of inspiration or ‘eureka moment’. These insights where new solutions pop into your head occur through what is sometimes described as ‘defocussed thinking’, when the mind is occupied with routine tasks such as showering or driving. It is only then that new and tentative neural connections that have been evolving under the radar of consciousness become known. Moreover, they rarely occur in stressful situations, but rely on a sense of well-being that facilitates the brain’s ability to bring them to the fore (Newton 2013). An easy way to illustrate this is to recall a stressful moment in an argument or disagreement when things are said that may not have been as helpful as they could have been, and on returning home and relaxing, suddenly discovering an alternative and less confrontational way to have presented your argument. It suddenly comes to you, ‘Why didn’t I say ...’.

In short, this discourse suggests that reward mechanisms such as evaluation of performance through assessment may have a significant impact on the way learning takes place, and importantly, the type and nature of activity that the learner undertakes. If we wish the learner to understand and know ‘about’ being entrepreneurial, we can test them through essays and examinations. However, if we wish them to have innovative capacity that brings into play diverse connections that may be new and offer alternative insights, this type of testing is clearly limited.

Entrepreneurship and Innovation—‘Two I’ Lenses on Learning and Evaluation of Performance

To assist with practical ‘educator-friendly’ approaches to the problems identified above, and following additional collaborative work with the European Commission, the Organisation for Economic Cooperation and Development (OECD) and the Government of the Republic of Macedonia (FYROM), the concept of the ‘Two I Lenses’ has emerged (OECD/Penaluna and Penaluna 2015; Polenalovik et al. 2015).

We know that to be constructively aligned (Biggs and Tang 2009) any assessment of creative performance needs to reflect the task in its entirety, not merely asking the learner to write using theory that precedes the experience. The experience precedes reflection using harvested knowledge. Moreover, if the assessment asks the learners to follow prior guidance and to ‘implement’ a staged learning

process, ultimately one that leads them towards achieving the well-known predicated goal, they will undertake their practice using theories or models that have been pre-determined, and effectively do as they are instructed by expert teachers or lecturers.

Clearly, this approach does not fit when we want students to discover new things and to offer different perspectives to potential problems and their plausible solution. As discussed above, we want our learners to think broadly and widely, to understand their own moments of ‘aha’ and to gather breadth of understanding from diverse sources, maybe from different disciplines or different cultures. We also wish them to become flexible and adaptable, as what is correct today may not be correct tomorrow. We are in a world of fast-paced change.

One way to achieve this is to offer learning environments where multisolution finding is the goal, and there are no finite and exact outcomes (See: QAA 18). Termed ‘Curiosity Based Learning’ (OECD/Penaluna and Penaluna 2015), this approach offers the learner ‘wicked’ problems, where there are no known ‘perfect’ solutions is a useful way to achieve this. For example, listing learners’ skills and abilities and asking them to invent a new job that makes use of them, opens as opposed to closes the mind, and offers opportunity for divergence of thought. We can ensure this by asking for multiple solutions that respond to the identified requirements; then, through a series of visually evidenced mind maps such as alternative idea development charts, provide the evidence for each of the proposed solutions. This in turn, of course, provides opportunity for the development of, and validation of, essential pitching skills.

In order to ensure relevance and up to the minute thinking, the task could ask students to watch the news each day and to explain how what they have learned may have changed their world. Alternatively, teachers may simply appear to change their mind because of something that makes sense to the learners and ask for something a little different than first requested in the initial task. This requires the learning environment to have change as an integral part of the process, as without it the learners will have no way to demonstrate their evolving abilities (Anderson et al. 2014).

The ability to change direction is inherently creative and is reliant upon the ability to have multiple solutions in the mind that are not too ‘precious’, but that can be evolved, changed and adapted. As learning develops, the more changes, the more opportunities the learner is offered for more ideas. This may well go against existing paradigms of formal business education, yet is, for example, common in creative disciplines such as design education (Weisburg and O’Hara 1989).

Table 7.1 is adapted from IICED’s contribution to the OECD’s recent literature (OECD/Penaluna and Penaluna 2015), and follows the Macedonian education model that has evolved within systematic schooling for innovation and entrepreneurship (Polenalovik et al. 2015). Through an alternative lens approach teachers and educators have been asked to look at their teaching, learning and

Table 7.1 Implementation versus innovation assessment issues

Implementation—assessment types	Innovation—assessment types
Can the student write and follow a business plan as directed by the teacher?	Can the student respond positively to short term and ever-changing venture environments/does she/he come up with new ideas in response?
Can the student come up with a good idea using the theories she/he has been taught?	Can the student come up with many varied ideas that respond to changing circumstances?
Does the student’s solution match the expectation of the test or exam?	Does the student’s solution surprise through new insights and alternatives?
Does the student respond to the problem identified by the educator?	Does the student identify new problems and opportunities for her/himself?
Is the solution correct, finite and complete in the view of the educator/evaluator?	Is the solution part of an ongoing process of prototyping that responds to stakeholder feedback, maybe from outside experts?
Can the solution be easily compared and contrasted to previous work and understandings?	Does the solution offer new insights and potentially challenge accepted understandings?
Can the student adhere to the use of accepted theories and practices when undertaking an assignment?	Can the student experiment and self-define a range of theories and practices that she/he has discovered, which may support or argue against her/his findings?
Does the student follow the rules carefully when developing a solution?	Does the student compare their solutions to rules and adapt accordingly? Ideas first, rules later?
Does the solution require significant resource? A bank loan for example?	Is the solution based on what the student has to hand in terms of resources and contacts?
Is the assessment based on past understandings and texts?	Does the assessment look to support new understandings—links and connections that the student has made for her/himself?
Does the assessment look to past events for guidance?	Does the assessment consider future and unknown contexts that are ‘best guesses’?
Does the leadership style in the task (teamwork) require decision-making by the manager?	Does the leadership style in the task (teamwork) require the management of an inclusive decision-making?

Source OECD/Penaluna and Penaluna (2015: 23)

assessment through the ‘Two I lenses’ of Implementation of Innovation, and to attempt to seek a balance between the two.

- **Implementation**—doing things that are determined by teachers and matching against their expectations.
- **Innovation**—producing multiple and varied solutions that respond to change and often surprise the teacher.

Defining Innovation Competencies for Youth

The insights provided by this ongoing work were utilised to help to initiate research by Mugione during her sabbatical at UWTSD Swansea. Her survey on young entrepreneurs aimed to identify the key challenges that they face and different resources that may be needed to unleash their potential. Elaborating upon existing literature and considering it in conjunction with the UNCTAD presentation and IICED initiatives, her survey design identified the following innovation competencies and behaviours (Table 7.2).

To validate the identification of innovation behaviours among young entrepreneurs, a questionnaire listing thirty-five statements describing the behaviours associated with innovation competencies, and an interview protocol for case studies based on the above were developed. In an online survey, respondents were asked to identify with a checkmark how accurately the statement proposed described his/her personal situation and identified specific constraints.

The online survey helped Mugione to select ten young entrepreneurs to interview, with a view to identifying their specific drivers and motivation. The case study as a research method allows the researcher to investigate a contemporary phenomenon within its real-life context when the boundaries between the phenomenon and context are not clearly evident (Yin 2008: 3). Case studies were decided upon as a method because they are also capable of handling both qualitative and quantitative data and a combination of data collection methods, such as interviews, questionnaires and observation. These interviews have thrown further light on the behaviours of young people who had started or were in the process of starting a business.

The entrepreneurs to be interviewed were selected according to the following criteria, which also aligns to the needs of the specific Empretec work being undertaken by UNCTAD:

- Age: youth, according to UN definition, between 18 and 34 at time of start-up
- Qualification: university graduates or under-graduates;
- Innovation content: the business idea recognised by an award and or a successful pitch with stakeholders resulting in seed funding;
- They were at early stage of business development;
- They had links with hubs, workspace sharing, incubators or other private or public support structures;
- The business works with hubs, workspace sharing, incubators assessing challenges of sustainable development in economic, social and environmental dimension.

Whilst the discussion of the online questionnaire and findings would take this chapter beyond its scope, to illustrate the survey's findings, we present a case study on young entrepreneurs from Wales. It highlights that entrepreneurship education plays an important role in inspiring youth to start-up their innovative businesses.

Table 7.2 Competencies and related behaviours identified for innovators based on existing research and interviews process

Competencies/definition	Behaviours	Existing research and learning components to stimulate competency developing
1. Future problem solving	He/she identifies challenges in the future scene and able to select an underlying problem He/she produces solutions to the underlying problem He/she is able to develop an action plan	Weisburg and O’Hara (1989)
2. Building knowledge	He/she has ability to develop expertise, sometimes outside of his/her area of expertise He/she stimulates own curiosity in everything including travels and develops observation skills by listening, reading and recording He/she is resourceful and has the help-seeking skills from others	Amabile (1992)
3. Creative thinking	He/she has the ability to generate ideas that are novel, high quality and task appropriate He/she has ability to judge the value of one’s own idea, to evaluate strengths and weaknesses and suggests ways to improve	Ideo (2009)
4. Incubation	He/she develops multiple proposals based on the initial discovery He/she is able to combine knowledge from previously disparate fields He/she is able to step away from an effort and return later with a fresh perspective	O’Connor (2008)
5. Adaptive planning	Action leads to results, he/she learns from them, and modifies assumptions and approaches accordingly; He/she sees the results whether good or bad as new insights. They shape actions that are better calibrated to the market needs Modifies his/her approach to achieve a goal. He/she is open to change and new information; rapidly adapts to new information, changing conditions or unexpected obstacles	Christensen (2009)

(continued)

Table 7.2 (continued)

Competencies/definition	Behaviours	Existing research and learning components to stimulate competency developing
6. Networking	Builds trust implicitly, removing fears wherever possible Respects rights and opinion of others Values the intent and context of collaborative relationships, inside and outside the company	McClelland (1987)
7. Personal motivation	He/she enjoys the challenge of the work and will take time to explore pathways and alternatives, taking his/her time and enjoying the process along the way	Amabile (1992)
8. Ethical leadership	Understanding our connection to each other and to the earth Seeking always to see the big picture, taking the impact of his/her actions into consideration Caring about the legacies for future generations	www.ethicalleadership.com

Source Mugione (2014a, b)

Sample Interview—A Success Story from Wales: XD STUDIOS—27 January 2014

The company is made up of seven current students from the University of Wales, Trinity Saint David (Swansea Mount Pleasant campus) all men, aged between twenty and twenty-six. Five of them met in their first year in the university during a course on computer games development. They shared a passion for computer games, and they used to dream about developing their own games, often in relaxed periods of reflection over a beer. The first interdisciplinary Start-Up Weekend was held in Swansea in November 2013. This provided an opportunity to engage two more partners in the team.

At the time of the research interview, they formed a company, XD Studios, which had been registered as a formal company in Swansea for six months. XD Studios is a game and tools development studio and also takes on outsource contracts. Despite being a very young start-up, it has been extremely successful with bringing in big name contracts such as Disney and Jakks Pacific. The company reported that they were already working on a contract with Vida Systems, a medical technologies company based in Silicon Valley. Starting small, the main goal of the studio was to expand and develop. Not only has the team got a passion for out-sourced projects, they already plan to develop their own games. The team was clearly very knowledgeable on the technology side, but lacked overtly identifiable

training on entrepreneurship. Courses on enterprise and entrepreneurship are only offered at this university in computing courses in the final year of the undergraduate programme, and all team members, who were still studying at the university, felt that this was far too late. Having entrepreneurship training during the second year would be the best fit, according to their experience, and they wished to mirror the experiences of other disciplines within the Art and Design Faculty at the university whose introduction to entrepreneurship and entrepreneurial behaviour is initiated at the beginning of year two of a three year undergraduate degree programme, and usually with the support of programme alumni.

The Market

The team had conducted a thorough market analysis by researching competitors and opportunities. As this is an international market this took place primarily via the internet. It included the preparation of case studies on companies offering similar games development in order to benchmark what they offered, their organisational structure and management. Networking and personal contacts through emails completed the thorough information search, but this is a continuous process because the game industry is very volatile and changes very rapidly. The current trends identified as a target were social games and free-to-play games. The behaviour of youth and entertainment are other complementary research areas that are of interest for game development. However, the team felt that the technology trends that evolve very rapidly are those that affect the market the most. As students, the young team has always kept abreast of these changes. Learning just by through the university curriculum is simply not enough to maintain the knowledge up to speed of technology development, and they are encouraged to research continuously. Only two members of the team have any experience in entrepreneurship, so they have sought help to prepare a business plan. This was offered through active support of the university's Enterprise Manager, who works within the Research Innovation Enterprise and Services (RIES) department under the manager for commercialisation. Marketing is another area that the team would like to strengthen as they are aware that constant monitoring is required. Eventually they hope to recruit a specialist or engage another partner.

The Product

The company members pursue a dual approach of delving into outsourcing and developing their own Intellectual Property (IP). Learning about IP is integral to their studies and the various opportunities this brings are highlighted. This helps to stimulate their creativity and keep up with industry developments. An additional and very innovative component of the company product offering is the ability to

develop bespoke technical tools on demand. The team also understands the importance of managing a project well, and the frustration that bad communication can cause. XD Studios prides itself on providing professional level communication from the planning stages right through to delivery of the product. The products offered by the company include:

- Game design (Levels, Mechanics, Story, Balancing, etc.)
- 3D Props, Characters, Weapons, Vehicles, Full Environments
- Shader and Script development
- Game Programming (AI/mechanics/Graphics/Physics/Scripting/Debugging)
- Project Management
- Professional Documentation
- On demand services.

Insights on Innovation Behaviours

All members of the team are enthusiastic learners; they are curious and resourceful. Most of all, they have a passion for games and, from an early age, decided that this is what they wanted to do. Another trait that the team share is determination; they are willing to persist and are committed to do what it takes to make their company successful. Everyone has the same vested interest since they committed to invest all their time and energy for at least a year without any earnings. For example, to honour a contract all the team have engaged on working very intensively for long hours for about thirty days. The team discussed it and considered it important that everybody committed to do that not just some.

Since they are equal partners, the relationships are horizontal but well structured. M—said, for example, ‘Since everybody expects the same, we should put in equal inputs’. All team members have a job description according to their skill set. They have plans ahead, driven by their passion and motivation. XD has a strong team spirit, and collaboration is first sought within the team. They are also keen on networking and having done quite a bit of freelancing individually, they already have good contacts in the industry. Thanks to these contacts they have been able to win the trust and work with a prestigious company such as Disney and Jakks Pacific. The team also values their new collaboration with Vida Systems, which called on them to develop educational material on medical technology. This is an opportunity for them to engage in research on health issues and on new tools for education.

The team also believes in participating in events that would raise their profile both with government, partners and the public. For example, their participation in the first ever held in Wales in Swansea Start-Up Weekend brought them instant recognition, as the team won the third place and gained access to a wide range of

publicity. They also received good advice and subsequently added two new members to the team who had interesting and complementary skills for the company. As the team has a ‘can-do’ attitude they are not afraid to take carefully evaluated risks. The team values further opportunities for networking and were keen, for example, to participate in a trade mission to Silicon Valley organised by the Welsh Government.

The company envisages strong links with the University of Wales, Trinity Saint David and going forward it plans both to integrate with some of their courses in the form of offering internships and graduate positions, in addition to undertaking industry level research in conjunction with them. This UWTSd strategy of engaging with their alumni is long established in curriculum enhancement and development, and is known as the ‘Continuous Conceptual Review Model’ (Penaluna and Penaluna 2006: 7; see also Chap. 15 in this book).

Given many of the changes within the university and its near future plans for expansion, this start-up team believes that, with its support, they are in a strong position to grow over the next few years becoming an important feature in the South Wales creative scene. Despite the young age, the company has already experienced setbacks. They worked very hard to prepare a game for a competition that was cancelled with no notice at all. Yet, they took it as a learning process and posted the game on their website to raise interest in it. The biggest hurdle the company faces is to find affordable office space. Because of confidentiality issues, the company cannot locate in shared desk space such as the local Tech Hub. Given the link with the university, the team believed very strongly that it would be a win-win to locate the company within facilities in a new campus that is being developed as a ‘business neighbourhood in Swansea’ SA1 district. In the interim, the University’s Enterprise Manager has negotiated space in their Technium building in the same district.

Training, Education and Emerging Strategies

Based on the IICED initiatives and Mugione’s survey questionnaire and case studies, training for trainers’ material has been developed in collaboration with the United Nations Institute for Training and Research and Youth Business International, and delivered to selected youth communities in Argentina, Algeria, Italy, the United Kingdom and Switzerland. Informed by UWTSd’s five years of experience of delivering an ‘educating the entrepreneurial educators’ module in formal teacher training studies (UWTSd/Welsh Government 2010. See also Chap. 15), new training modules for youth have been made available upon request to the network of Empretec centres, and whilst this is emergent at the time of writing, the feedback thus far has been extremely positive.

Developing Youth Entrepreneurship—Policies and Pillars

Although not directly related to the discussion above, another policy spin-off of the research conducted at UWTSD was the review of UNCTAD's policy options to create the conditions that will increase economic opportunities for young people. A research study on youth entrepreneurship policy has been subsequently further developed with the Commonwealth. In order to offer the reader some insight into this extended research and the result of the collaborative work between UNCTAD and UWTSD's IICED, we provide an outline here.

Youth entrepreneurship is widely identified as a plausible solution to the unprecedented global youth unemployment challenge. It has the potential to stimulate economic growth by fostering innovation and competitiveness. Supporting youth business not only can create jobs for these self-starters, but also contribute to the creation of employment for other young people. Beyond its economic advantages, youth entrepreneurship can also contribute to social development by raising the living standards of young people, thereby reducing poverty and building sustainable livelihoods. By tapping into young people's ingenuity, youth entrepreneurship can foster social inclusion by enabling young entrepreneurs to unleash their potential and enabling them to develop innovative solutions to the pressing challenges in their communities.

In an effort to help unlock this potential, UNCTAD and the Commonwealth have developed a Policy Guide on Youth Entrepreneurship (UNCTAD/Commonwealth 2015) that aims to support policy makers in designing national entrepreneurship policies and programmes that will better serve the needs of young entrepreneurs. The guide builds on UNCTAD's EPF of (2012).

The Policy Guide is designed to outline key policy areas that can have an impact on promoting entrepreneurial activity among young people. It then presents a systematic and coordinated strategy for the formulation and implementation of a comprehensive strategy, covering the crucial aspects for enterprise development. These cover setting up a conducive policy and regulatory environment; education and skills development; access to finance and technology; as well as networking and awareness-raising. The six key pillars of the Policy Guide are presented below:

The first pillar is formulating a national youth entrepreneurship strategy.

The policy guide identifies the key elements for a national youth entrepreneurship strategy and outlines a step-by-step process for its development. Developing an effective national strategy, coupled with policy measures in key priority areas, can lay the foundation for an enabling entrepreneurial ecosystem that will help young people unleash their potential. In order to ensure that youth entrepreneurship makes a meaningful contribution to job creation and the achievement of the SDGs, governments need to partner with the private sector, NGOs and international organizations. They should also engage young people as partners and collaborators in the development and implementation of a comprehensive national youth entrepreneurship strategy.

The second pillar is Optimising the regulatory environment for enterprises.

While all entrepreneurs face barriers in the business environment, aspiring young entrepreneurs face unique challenges that often discourage them from pursuing and engaging in

business activities. Optimising the regulatory environment for youth can go a long way to encouraging young people to engage in business activities. Recognising this, the Policy Guide highlights government's role in addressing barriers in the regulatory environment that discourage young people from registering their businesses, such as high business registration costs and cumbersome administrative processes.

The third pillar, and most pertinent to our discussion, is providing appropriate education and skills development.

Entrepreneurship training can ensure that young people acquire the competencies and skills they need to pursue entrepreneurship. Strengthening the capacity of vocationally valid education and training to equip young people with the skills for self-employment or for the job market is essential. Beyond building the capacity of educational systems to provide entrepreneurship skills, initiatives that introduce entrepreneurship across countries such as the International Labour Organisation's (ILO) Know Your Business (ILO, http://www.ilo.org/suva/WCMS_213731/lang-en/index.htm) and UNCTAD's Empretec programme (Empretec 2011) allow young people to acquire much-needed entrepreneurship education. UNCTAD's "Business Schools for Impact" initiative (UNCTAD 2014: 4) also offers inclusive curricula, internships and networking opportunities for youth, notably in the social entrepreneurship realm.

The fourth pillar is facilitating technology exchange and innovation.

Ensuring access to technology and innovation can lay the foundation for economic development. Access to affordable technology can enable young people to create new products and services. Business incubators and accelerators, co-working spaces and ICT for business will allow young people to take advantages of the economic opportunities that technology provides.

The fifth pillar is improving young people's access to finance.

Access to finance is critical for young people to start or grow a business. Eliminating collateral requirements and reducing banking fees, among other measures, can help young entrepreneurs gain access to finance to start and grow their businesses. Financial institutions can tailor-make their services to meet young people's financing needs. Youth's access to financial services and financial literacy are key aspects of social inclusion.

The sixth pillar is promoting awareness and networking.

Persistent negative societal attitudes towards entrepreneurship as a career choice, young people's fear of failure, insufficient promotion of entrepreneurship opportunities and lack of access to markets, all hinder young people from pursuing entrepreneurship and undermine efforts to create a culture of entrepreneurship. The Policy Guide identifies measures that can be undertaken to shift mind-sets about entrepreneurship and address underlying biases about entrepreneurship as a career choice for young people.

Based on the Policy Guide, UNCTAD and the Commonwealth will offer advisory services and capacity building to countries that wish to develop youth entrepreneurship. The Guide will help policy makers to build a conducive environment for the young generation to have a meaningful and inclusive participation in the economic development and wealth creation of their countries. It is only by empowering youth in an inclusive manner that societies can be built that will be peaceful and prosperous.

Conclusion

The partnership between UNTAD and UWTSD's IICED has borne much fruit. From UWTSD's and EEUK's initial intervention in Geneva in 2011, through to Mugione's sabbatical year and subsequent research, greater international emphasis is now being placed on understanding innovation as an entrepreneurial competence. Through a better understanding of the creative mindset, and the preparation of new curricula that addresses the identified gaps, UNCTAD and its partners have been able to commence a series of innovation-based and internationally relevant projects that develop skills 'for' entrepreneurship.

Our discourse takes the reader through the research journey, indicates key strategies such as the 'Two I' lenses on assessment that have evolved and offers insight into the type and nature of companies that UNCTAD and UWTSD wish to support. The partnership continues, as research into cognition evolves, and as better understanding of the need for reward mechanisms that take into account the dialogue above, new initiatives for education will undoubtedly evolve. We have also introduced new policy youth entrepreneurship guidance that was informed by the research undertaken by Mugione. This considers the entire entrepreneurial ecosystem and the role that key players can have in delivering success.

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Professor Andy Penaluna is Director of the International Institute for Creative Entrepreneurial Development (IISCED), University of Wales Trinity Saint David (UWTSD). He is a former Chair of Enterprise Educators UK, the Higher Education Academy's Entrepreneurial Learning Group and the Quality Assurance Agency's Enterprise Guidance team. Other roles include a Distinguished Visiting Professorship at the American University in Cairo, a Visiting Professorship at the University of Leeds, and a Visiting Business Fellowship at the Royal College of Art's professional development service for innovation—FuelRCA. He sits on the Advisory Board of the Small Firms Enterprise Development Initiative (SFEDI), the UK Government-recognised sector skills body for small businesses. His current work includes the development of entrepreneurial teacher training in eight countries as part of the South East Europe Centre for Entrepreneurial Learning team. He has also advised the European Commission and became an expert contributor at UNCTAD in 2011.

Chapter 8

Women Entrepreneurs in São Paulo, Brazil

Tales Andreassi and Maria José Tonelli

Abstract Until fifteen years ago, the ambition of any business administration graduate was to work for a big multinational company or an investment bank. Since 2000, more and more students have been considering setting up their own business as a real career option. FGV-EAESP, one of the main Brazilian Business Schools, created its Entrepreneurship Centre (GVCENN) in 2004. Its main objective is to contribute to the entrepreneurial culture not only inside FGV but also outside the school, specifically in São Paulo city. Over the last decade, GVCENN has developed many programmes, projects, and activities. The objective of this chapter is to describe some entrepreneurship aspects of Sao Paulo city region, as well as the contribution of the city policies and the GVCENN activities to boost entrepreneurship in São Paulo city. The chapter focuses on female entrepreneurship in Brazil.

Introduction

Before the year 2000, the dream of almost every student on a management course in Brazil was to work for a multinational company or in an investment bank. This was also the case in other countries. According to Tan and Ng (2006), the conventional aim of programmes in business schools is to prepare “middle managers” for big companies, with an emphasis on techniques to be used in the corporate world, rather than to produce leaders who will take risks. Nevertheless, nowadays,

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increasingly more students are considering opening their own businesses as a career option.

There are many explanations for this boom in entrepreneurship. With the phenomenon of re-engineering in the 1990s, many jobs ceased to be as attractive as they had once been. Longer working hours, little investment in training, less attractive salaries, the end of job stability, and a tireless drive for profit made the corporate environment more stressful. Concomitantly, the emergence of young entrepreneurs who struck it rich working out of their own garage with a good business idea became a source of inspiration for those that had yet to find a niche in terms of a career in the corporate world.

In this context, business schools began to view entrepreneurship as a way of attracting and retaining new students and, consequently, developed a series of activities along those lines. Entrepreneurship is viewed as a solution for creating opportunities for these students and to jump-start different types of careers at a time of full employment in the country. Many of these young people, the children and grandchildren of great entrepreneurs, sought to forge their own careers.

To a certain extent, in the context of inequality in Brazil, entrepreneurship achieves two goals. For those who are richer, it is a form of differentiation and expansion of business opportunities. For the less wealthy, it is a survival strategy in the period of economic development that the country has experienced in the last twenty years. There have been more opportunities for success, and consequently, more people have moved into the middle-income bracket.

Therefore, since the beginning of the new millennium, the main business schools in the country have begun to structure their entrepreneurship centres and offer disciplines and courses in this field. In a recent study, Hashimoto (2013) identified 33 Brazilian entrepreneurship centres, most of which had been operational for less than four years. In this context, several spaces have been created for co-working and there have been initiatives by schools and other social groups. Today, numerous groups offer support to women entrepreneurs in several Brazilian states. APEX, the federal government agency that supports exporters, created a specific programme that provides support to businesses run by women.

In 2004, the São Paulo Business Management School run by the Getulio Vargas Foundation (FGV-EAESP) established its entrepreneurship centre, the GVCenn, one of the first of its kind in the country. The São Paulo Business Management School was established in 1954. It was the first business school in the country to play a differentiated role in the industrial development of São Paulo State in the 1950s, providing training for business leaders and public leaders nationwide. Likewise, from the outset, the GVCenn has adopted a number of initiatives such as holding lectures (given by the likes of Mark Zuckerberg and David Neelman, who have visited the school to address its students) and competitions for business plans, with the winners earning a place in international competitions organized by the University of Texas in Austin. There have also been missions to analyse the entrepreneurial systems of other countries, such as Israel and Peru, focusing on social entrepreneurship, and other activities. An accelerator has also been created,

enabling the development of start-ups by students, given that there is growing interest among graduates and MBA students in opening their own businesses.

In addition to these activities, one that has made a considerable impact among entrepreneurs in the city of São Paulo is the 10,000 Women Programme. This is run jointly with another EAESP Study Centre, the NEOP (Nucleus for Studies of Organizations and People), and will be analysed in this chapter. The programme provides free training in management for women entrepreneurs.

This chapter addresses two issues. The first, which is more in the external environment, is to show the main characteristics and actions on the part of the city of São Paulo related to entrepreneurship, which have made the city one of the main hubs of entrepreneurship in Brazil. The second, which is more in the internal environment, is to describe and analyse the impacts of the activities involved in the 10,000 Women Programme. This programme has had a domino effect and led many other groups to contribute to the development of entrepreneurship in the city of São Paulo. It is to be hoped that the reports presented here can inspire and encourage the adoption of policies and training programmes that focus on women entrepreneurs in other cities in Brazil or even in other countries.

Entrepreneurship in Brazil and in São Paulo

Small and microbusinesses play a very important role in the Brazilian economy. They represent almost all Brazilian companies (98%), and they are responsible for creating approximately 52% of formal jobs and 40% of wages and salaries in the country (Sebrae 2013a). These facts highlight the contribution that they make to the national economy.

In comparison with other countries, the rate of entrepreneurship in Brazil is very high indeed. The study conducted by the Global Entrepreneurship Monitor (GEM 2014) reports that, of the seventy countries included in the study, Brazil has the seventh highest rate of entrepreneurs who have had an operational business for longer than forty-two months. This is equivalent to 17.5% of the Brazilian population. If we add this percentage to the 17.2% of entrepreneurs who have a business that has been operational for under 42 months, we can be led to the conclusion that 37.4% of the population who are aged between 18 and 64, i.e. forty-six million people, are involved in some form of entrepreneurship. In 2002, this number was only 20.9%, which shows that the country has seen an entrepreneurial boom in the last ten years.

However, despite this boom, Brazil is ranked in third place as one of the most difficult countries for doing business, occupying the 130th place out of the 185 countries that were analysed (World Bank 2013). Data from the Sebrae (2013b) show that 25% of new businesses closed their doors within two years of their creation. The main factors that limit entrepreneurship in Brazil include the complex tax legislation, lack of credits, high interest rates, and low levels of education and qualification of entrepreneurs and their employees (GEM 2014). Unfortunately, this

situation is even more difficult when it comes to women entrepreneurs. Although many such women open new businesses (51%), according to the GEM, they are the owners of a smaller number of established enterprises. Furthermore, Brazil is in sixtieth place in the Female Entrepreneurship Index for 2015. In Latin America, the best country for female entrepreneurship is Chile, which holds the fifteenth place in this ranking. In Brazil, women are responsible for their homes and families (35% of families have a woman as the head of the household), and it is a fact that many of the businesses that they open are created through necessity and to help these women juggle the responsibility of working and of looking after their families.

Although these limitations apply all over the country, some cities have succeeded in minimizing their effects. This is the case of the city of São Paulo, which is the largest city in the country and one of the largest in the world. With a population made up of twelve million residents of seventy nationalities, which also welcomes approximately fifteen million tourists per year, São Paulo is a global and cosmopolitan city with many different cultures (Guia da Cidade 2013). According to Capazoli (2016), based on the data provided by the Commercial Federation of the State of São Paulo, of all the cities in the world, São Paulo has the tenth highest GDP, and 10% of all the businesses in the entire country are concentrated there. The city also has five million vehicles.

Endeavor Brasil, a non-governmental organization that was created on the model of the American Endeavor, has published the Index of Entrepreneurial Cities in Brazil since 2014 (Endeavor 2015). This index is constructed by examining indicators from 32 Brazilian cities and towns. The following indicators are considered when compiling the index: the regulatory environment (process times, cost of taxation, and the complexity of the taxation system), infrastructure (transport in and between cities and towns and urban conditions), the market (economic development and potential clients and customers), access to capital (capital available through debt financing and access to risk capital), innovation (inputs and outputs), human capital (labour and skilled labour), and entrepreneurial culture (potential entrepreneurs and the image of entrepreneurs).

In 2015, the city of São Paulo was voted the best city in Brazil in terms of entrepreneurship. Of the thirty-two cities that were subjected to analysis, São Paulo came in first place in the indicators for infrastructure, market, and access to capital.

Easy access to capital is complicated in other Brazilian cities and towns. São Paulo borrows over twenty-two times the value of its GDP every year, almost 50% more than the city that came in second in the ranking. Furthermore, 57% of the venture capital investments in the country are made in São Paulo (Endeavor 2015). São Paulo also has the best infrastructure, with a logistics system supported by large international airports, a port and harbour system, and a vast road network. All of these factors mean that the region is highly interconnected.

Regarding the market indicator, São Paulo also came in first place. The GDP of the city is approximately five hundred billion reais, which is equivalent to over ten per cent of national production and 126% higher than that of Rio de Janeiro, the city with the second highest GDP (Endeavor 2015).

Public policies developed by a society, whether at the municipal, state, or national levels, can be classified as either regulatory policies or stimulation policies (Sarfati 2013). The regulatory policies include the rules for the entry and exit of businesses, labour rules and social rules. There are also rules of ownership, tax rules and those that apply to intellectual property, bankruptcy and those that affect liquidity and the availability of capital (including interest rates and access to financing and funding). To a certain extent, most of the time, the regulatory policies are similar in all Brazilian cities and towns, given that, most of the time, the policies are the same for the whole country. Such policies include the policies for labour norms and those concerned with intellectual property. The policies that can vary most from one city to another are the tax rules, especially taxes and tributes at the municipal level.

On this specific issue, the city of São Paulo has some points that are not in its favour, given that some municipal and state taxes have higher rates than those charged in other cities and states. The study conducted by Endeavor revealed that the city is in twelfth place in terms of the regulatory environment indicator. The time required to open a business in São Paulo, for instance, is eighty-eight days, whereas in Uberlândia, in the State of Minas Gerais, which was ranked in first place, the time required to open a business is only twenty-four days. Even so, twenty-four days are still a long time, if we compare Brazil with other countries such as Chile, where a company can be opened over the Internet in only one day (Endeavor 2015).

Stimulation policies have to do with actions related to directly promoting entrepreneurial activity. These activities can be classified as follows: the promotion of an entrepreneurial culture, the development of the business incubator industry and venture capital, programmes to promote innovation (research and development), and programmes to promote internationalization.

Female Entrepreneurship in Brazil

When attempting to enter the work market, Brazilian women face the same problems as women in other countries. These include difficulties in reconciling work and family, gender stereotypes, sexual harassment, and differences in terms of the opportunities that arise. Furthermore, they also suffer when it comes to climbing the rungs and moving up to higher levels in the organization, which are generally occupied by men. More recently, in order to reconcile work and family, many women have decided not to attempt to improve their professional positions and remain at the lower levels of the organization (Morgado and Tonelli 2015).

In recent years, there has been a change in the demographic aspects of Brazil, with a sharp drop in the birth rate. The family in general has become smaller, and there has been a sharp rise in the number of women who have become the head of the household. The population in general has aged, with increased life expectancy, which has risen to 75.8 years for women and 68.1 years for men (Bruschini et al.

2008; Costa et al. 2008). Moreover, there have been improvements in the levels of schooling for women to such an extent that women in Brazil, in general terms, have a higher level of schooling than men do. Women have also been occupying more places in universities. These new patterns have changed the relationships between genders and led to changes in traditional cultural standards.

The major obstacle that faces women who wish to have a more productive life continues to be their obligation to look after their children. The distribution of domestic tasks between women and men remains very uneven (Venturi and Racamán 2002; Cyrino 2011). Women with small children have become more active in recent years, but their responsibilities with the home and the children mean that women are not able to invest in their careers as much as men do (Bruschini and Pupin 2004). There is also dissatisfaction on the part of male leaders, who often ensure that women are not appointed to higher positions in an organization (Moore and Buttner 1997), a phenomenon known as the “glass ceiling”. Owing to these factors, entrepreneurship has turned out to be a very attractive option for a woman who wishes to reconcile work and family life.

According to the data of the GEM study (2014), approximately forty-six million Brazilians are involved in entrepreneurial activities. Of these, twenty-two million are women. When it comes to new entrepreneurs, i.e. entrepreneurs who opened their businesses less than forty-two months ago, the percentage rate of women has overtaken that of men. Women are now in charge of 51.2% of these businesses, compared with 48.8% by men. This is a phenomenon that occurs nationwide, as the percentage of women involved in new entrepreneurial activities is higher than that of men in all regions with the exception of the north-east of the country. This shows that women have essentially turned to entrepreneurship as a career option. However, when it comes to established businesses, i.e. those that have been operational for more than forty-two months, the hegemony remains masculine, with 54.9% of these businesses being run by men, compared with 45.1% in the hands of women.

For women, flexible working hours are one of the reasons that lead them to open their own business (Boden 1999), as this flexibility allows them to fulfil their responsibilities with their families and run their households while running their businesses and tending to other cares outside the home (Jonathan 2011). These other cares include voluntary work or helping in the communities where they live.

Striking a fair balance between work and dedication to the family appears to be a great source of concern among contemporary women. This double shift that they face, at work and in the home, leads to conflict, problems, and stress. A feeling of guilt arises in women who attempt to reconcile work and family, and many of them are led to believe that handling both tasks is irreconcilable, and women blame themselves and feel guilty about working and cease to do so in order to take care of their families (Jonathan 2011). Indeed, a study of American women revealed that they viewed work as a source of conflict within the family, especially due to the lack of time that they have to be at home with the family (Posig and Kicku 2004).

Concerning Brazilian women, studies have shown that the fact that they choose to open their own businesses results in a better balance between their roles in the

workplace and with the family (Lindo et al. 2007; Quental and Wetzel 2002), especially because household management, in most cases, appears to be a task that falls to the woman of the house.

This brief overview of female entrepreneurship in Brazil shows the care that women in the country have when it comes to balancing their professional and family life. This issue is one of great importance in a country in which the role of managing the household and looking after the children is one that in most cases is the responsibility of women. In this context, entrepreneurship emerges as a possibility for women to reconcile work and family, given that they can enjoy the flexibility of having lunch with the family or being present on important occasions in the lives of their children. Furthermore, in a city like São Paulo, with twelve million people and serious problems of transport and mobility in general, entrepreneurship is a way of escaping the drudgery and stress of transport and traffic by opening a business close to home.

For this reason, initiatives that favour female entrepreneurship are important, as they are in tune with a very strong trend in Brazil and in São Paulo in particular. In the following section, one of these initiatives in the city of São Paulo will be addressed, a programme that was developed to train women entrepreneurs.

The 10,000 Women Programme

In 2008, the Getulio Vargas Foundation was invited to participate in the 10,000 Women Programme, a worldwide initiative established by the Goldman Sachs Foundation (GSF). The aim of this programme was to offer training in management to 10,000 underserved women entrepreneurs, in 22 countries, to provide them with knowledge that would help them to overcome the daily problems that they face in the development of their businesses. Many women who open their own businesses do so without necessarily being aware of any management tools, as they embark on their ventures with an entrepreneurial spirit and are motivated by the recognition of a business opportunity. Being able to access and share knowledge of finance, marketing, human resources, strategy, and other aspects of entrepreneurial life allows them to become more professional in their business outlook and broaden their view of the business world.

The Goldman Sachs Foundation established some parameters to be followed by the schools that participated in the programme regarding the criteria for the recruitment and selection of the women entrepreneurs. These included a maximum income, having no political connections, never having studied outside the country, and other measures to ensure that the opportunity would be given to those who would make the most of it and needed it. Nevertheless, the preparation of the curriculum was delegated in full to the participating schools. Further information on the worldwide programme (the Brazilian programme can be accessed on the following Websites: 10000women.org and 10000mulheres.com.br). The programme was offered twelve times between 2009 and 2013. Three hundred and fifty

women were given training by the FGV, most of them from the city of São Paulo. The main aspects of the programme included selecting the participants; the content; the impact on the businesses; and the impact on the self-esteem of the women entrepreneurs. How all these things were done is described below. In the following section, we also discuss the impact that the programme made on the other courses run by the school.

Selecting the Participants: Focus on Women Entrepreneurs Who Run Their Own Companies

In the first year of the programme, women entrepreneurs who already had their own businesses and others who would like to be entrepreneurs in the future were accepted on the course. This initiative did not work out very well, as few of those selected for the group of future entrepreneurs actually ended up opening their own businesses. Furthermore, the learning process is more beneficial and richer when the participants have a company and can implement or discuss the initiatives and experiences commented on by their teachers. Consequently, in the ensuing years, only women entrepreneurs who had already opened a company were accepted on the programme. Another important aspect was to guarantee that the women attending the course, even if they shared their business with a partner, would have some degree of autonomy to implement necessary changes in their businesses.

Designing the Content of the Programme

The initial idea of the programme was to offer concepts on the basic content for managing a business, such as finance, marketing, and strategy. However, after each programme, the criticisms and suggestion that were made helped the coordinators to improve the curriculum for the next course. By the twelfth programme, the curriculum had become quite different from that of the first. For the final programme, one hundred and fifty hours of classes were offered over a period of three months, with eight hours on Fridays and eight hours on Saturdays. Two networking meetings open to all the participants were held that year; twenty-five consultancy courses with professionals were offered, and a business fair was held.

In general, the courses given by the school are evaluated by the students, who are given a form to fill in when the course is concluded. In this programme, in addition to the evaluation, there was also the monitoring of a series of indicators, the main ones being the evolution of sales and the number of employees. Therefore, there was no point in having good evaluations of the course if the indicators did not show a substantial growth of the business. The companies run by the entrepreneurs

who participated in the programme were monitored twice a year over a period of three years.

In addition to the content presented in the curriculum, one of the purposes of the 10,000 Women Programme was to inform the participants of many of the initiatives taken by the city to aid entrepreneurship. Thus, visits were organized to business incubators, and lectures were held by the banking federation to publicize opportunities for financing. Lectures were also given by representatives of public institutions and agencies to publicize technical improvement programmes for small businesses, to announce competitions and prizes, and to explain any other initiatives that might be taking place. As São Paulo is a very large city, the information ended up being dispersed and often failed to reach its target audience. Therefore, one of the concerns of the programme coordinators was always to attempt to publicize initiatives that could be of benefit to the participants.

During and at the end of the programme, two debriefing sessions were held, lasting four hours each. The purpose of these sessions was to enable the participants to share their experiences with one another regarding how they applied the content of the course and what they learned in the classroom to their companies, the steps they took to do this, and the results of these initiatives. These sessions proved to be highly enriching to the participants as they encouraged other students to follow the examples of those who had applied the knowledge they had gained in the classroom.

Impact on Business

It did not take long before the results of the programme became evident. On average, one and a half years after taking part in the programme, the women entrepreneurs saw their sales rise by 30% and they had hired four new employees. In addition to the monitoring of the businesses over a period of three years, after the formal content of the programme had been taught and all the formal procedures had been concluded, a number of meetings were arranged for the women to exchange their experiences with one another. There was also monitoring by marketing consultants, finance consultants, and local bank representatives who volunteered a day of their time to debate the business dealings of the women entrepreneurs. Indeed, the formation of a network to provide support for the women had an extremely positive impact, as they were able to exchange information on how their businesses were progressing and, whenever possible, they were also encouraged to do business with one another. Nevertheless, the most interesting aspect is that the benefits were not only related to the business. The major impact was on how they perceived themselves and their conditions as women entrepreneurs.

Impact on the Self-Esteem of the Women Entrepreneurs

The women who were selected for this programme were from the lower income brackets where the lack of suitable economic and social conditions is tied up with issues of low self-esteem. After the course, many of the participants emphasized that the programme also affected their personal side, as they now felt they belonged to a group. This feeling of belonging to such a diverse group of women enabled them to share the problems they have in common and propose solutions for them. They can attend entrepreneurship events together, recommend each other's businesses to their customers, and improve their self-esteem. In general, they began the programme at a low ebb, and when it ended, they felt better about themselves. Their faces clearly showed that they felt empowered that they now had responsibilities and privileges that could be shared in their communities. Many began to develop initiatives for the empowerment of other women, bringing in new members to their ever-growing network.

Impact on the Other Programmes of the FGV-EAESP

For the school itself, the 10,000 Women Programme was a constant source of learning during the five years that the programme lasted. Some of the main lessons that were learned are described below:

Focusing on a Niche

When a programme is structured to focus on a niche (women entrepreneurs, ethnic minorities, etc.), it is easier to attract sponsors and interested parties. After the 10,000 Women Programme, other programmes that focused on specific niches were offered by the school, such as a discipline in the graduation course to focus specifically on the issue of gender and a programme for the ongoing education of women in business.

10,000 Women is not a Course; It is a Programme

The results presented by the women entrepreneurs improved significantly, as we came to view 10,000 Women as a programme rather than a mere course. Over the years, activities other than classes were introduced, such as business fairs, consultancy with specialists in the field of small businesses, mentoring in small groups with professors, and networking events involving all the groups, encouraging

business among the 560 participants in the programme. There was also a Facebook page to enable greater interaction between the participants, and a Website was created where all the participants could register their products and offer them for sale. A meeting was held with executives from Goldman Sachs in São Paulo, at which the women entrepreneurs were given guidance and advice to improve their businesses.

Furthermore, it should be highlighted that the programme enabled productive interaction with other courses run by the school, such as the graduate course and the MBA. Disciplines of these courses involved the companies of the women entrepreneurs on a voluntary basis to allow students to develop applied projects. A point in question was a discipline of the marketing course, which recruited companies that wished to have their marketing plans prepared by students from the school free of charge. Another discipline that was involved in the practices of consultancy allowed a company that participated in the 10,000 Women Programme to set a problem to be analysed and tackled by the group of students. In the final class, the students presented their report to the entrepreneur.

In 2015, a new phase of the programme was initiated. In this phase, the programme was to be run in only five countries: Kenya, China, India, Brazil, and Egypt. Harnessing the experience of the twenty-two schools that participated in the first phase, Babson College, one of the most renowned schools of entrepreneurship, was retained to structure a new curriculum common to all the countries in which the programme will continue to be offered. This new curriculum introduces a number of innovations, such as the presence of two to three professors simultaneously sharing the same space in the classroom, so that knowledge is passed on in an integrated manner. A single case is debated by a professor of finance, marketing, or strategy. A number of dynamics and games have been developed to facilitate the assimilation of the programme content.

Cases

To exemplify the impact of the 10,000 Women Programme, we present a summary of three cases of women entrepreneurs who attended the programme and whose cases were published in books and journals. The first example is that of manufacturing and selling candles. The second is a company that works with free gifts and promotions, and the third is a cosmetics manufacturer and wholesaler.

Candle Store

As reported by Abreu (2015), Carla Melo worked as an electronics technician in a telecommunications company. The environment at the company was mostly male dominated, with few women working there. Due to an injury she suffered as a result

of repetitive actions, she decided to move on and open a small candle factory in the backyard of her mother's house. "I always liked lighting candles and I noticed that they were not cheap, despite their low production cost", Carla said. In 2011, after listening to a radio interview with one of the coordinators, Carla became interested. She applied and was accepted as a participant in the 10,000 Women Programme.

Through the programme, Carla learned tools that helped her to improve productivity and manage the financial side of the business, one of the problems that face the participants in the 10,000 Women Programme. While drafting her plan for expansion, which was required of all the participants, she left her mother's house and expanded her business by moving to a small factory, currently employing four workers. Carla sells her products to retailers on Rua 25 de Março, a traditional sales point in São Paulo. She also sells her candles to hotels and spas.

When asked about the main contributions of the programme, Carla says that before she attended the programme she relied mostly on her intuition when it came to her business, with no professional organization. Consequently, after six years, she had seen practically no increase in production. After she took part in the programme, her production increased by thirty per cent. Carla is in charge of the administration and finance, in addition to the production at the factory. Her husband is in charge of the commercial side and sales. Such an arrangement is not commonplace in family businesses, as the man is usually the one that is placed in charge of finance and production.

Although satisfied with the advances that the company had made, Carla still feels that she needs more time to spend with her children and parents, in addition to having some time for herself. She says that the biggest advantage of being an entrepreneur is that unlike in her former job as an electronics technician, she now feels less vulnerable. While she worked at her former company, she was always afraid of losing her job because she worked in an environment that was very prejudiced against the presence of women. She now feels that she has much more financial freedom, and even with her busy routine, her working hours are more flexible when it comes to working her double shift as an entrepreneur and mother. She has greater control over her daily life.

FR Free Gifts and Promotions

As reported by Sandim (2015), Railda Santos always wanted to be an entrepreneur, so much so that in all the jobs she ever had she sought to learn something that she could use in the future in her own business. In 2011, when the distribution and sale of plastic bags were banned in supermarkets in the city of São Paulo, Railda and her sister had an idea. They would make bags out of PET bottles. As the bottles were recyclable, this practice was permitted by the municipal government.

At that time, when she was attending an event on entrepreneurship, she was told about the programme, applied for it, and was accepted. According to Railda, the relationships that the women have with each other and interactions empower them

and are very important because the women gain strength and energy to forge ahead with their businesses. The network that the women and participants from other groups formed was not limited to the duration of the programme. The network continues to help them stay in touch on a permanent basis, exchanging information and news about events that are of interest to entrepreneurs.

Another fundamental gain was the consultancy that she received after the classes she attended. Through this consultancy, Railda was able to learn simpler and faster ways of pricing her products, calculating her profit margins, and planning her marketing strategies. Furthermore, she was able to respond to her clients' needs more readily and has fewer doubts regarding negotiations, budgeting, and calculating estimates. Therefore, the management of her company has become simpler and more transparent with the help of the techniques and tools that she discovered and developed during the programme. All of these factors have had a direct impact on the feasibility and survival of her company, which she runs from her home in the neighbourhood of Capão Redondo, in the city of São Paulo.

According to Railda, it is of fundamental importance to learn something new every day, so much so that after attending the 10,000 Women Programme, she has attended a number of other courses. She is always seeking new forms of innovation and looking to create strategies that will enable her to expand her business. She has already finalized her marketing plan for this year. Her main goal is to broaden her range of customers, seeking to supply her products to other market segments. Even today, Railda continues to seek advice from the programme consultants whenever she finds herself in doubt about her business.

Aromatic Spells

As reported by Roma et al. (2015), Raquel da Cruz graduated in languages and was working as a secretary when she decided to open her own business, as she did not feel fulfilled in her profession. The time that she spent travelling to and from work, the limited time that she had to spend with her family, and the desire to try something new on her own led her to rethink her career. As she had always liked aromatherapy, in 2002 she made up her mind to leave her job and open her own business, naming it Feitiços Aromáticos (Aromatic Spells). To understand the sector better, she enrolled in a technical course on chemistry and did a postgraduate course in cosmetology.

A few months after opening her business, Raquel began to have problems with financial management. Her cash flow did not appear to be healthy, and she had to resort to borrowing money from the bank. It was a great struggle for her to pay her bills, and the company was constantly in the red.

It was at this point that Raquel decided that she had to look around for training courses. She consulted the Sebrae, an institute that provides support and advice to small businesses with help from the Brazilian government. She applied for a place in the 10,000 Women Programme and from that time on never stopped studying.

The courses that she attended taught her that her cash flow problem was the result of unnecessary stock. As the debts grew, she decided to negotiate directly with her suppliers to gain time and reorganize her finances. It worked.

Realizing how much she had benefitted from the knowledge she had gained on the courses, she decided that it would also be a good idea for her staff to receive training. She hired several young people from the region of Itaquera, a deprived area of the city of São Paulo, and provided them with training courses. This was a highly successful move, so much so that many of these young people began their careers as interns and are now in important positions in the company. As the company focused on its own community, it was awarded the *Isto É* magazine prize for being the most socially conscious business in the country.

Final Considerations

The environment for entrepreneurs to develop their businesses in the city of São Paulo is a stimulating one, and the adversity facing women entrepreneurs in the Brazilian context is mitigated in the city. The first reason for this is that women with businesses in the service sector find that the city is a major hub in this sector, a place that provides favourable conditions for businesses to develop and flourish. The second reason is that as the city has a cosmopolitan environment, there are fewer instances of prejudice, and such issues are minimized. The multicultural environment is ideal for organizing numerous events that contribute to the effervescence of creative businesses such as fashion, cinema, and gastronomy. In these segments, there is a strong female presence. In third place, female entrepreneurship thrives because the city is the most important financial centre in the country. It lends over twenty-two times the value of its GDP and is the city with the highest concentration of risk venture capitalists and angel investors in the country.

Investing in the development of women has good results in the long term, because when women develop, the resources they receive and the profits they make are invested in their own communities, in their families, and in their children, improving the living conditions in their social environment.

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Chapter 9

Sustaining Entrepreneurship Education in Hong Kong as a Learning City Through Partnership Building

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Abstract The UNESCO Institute for Lifelong Learning (Conference report, international conference on learning cities, October 21–23, Beijing, China, 2014) has promoted the idea of the learning city which highlights inclusive, lifelong learning and learning for and in the workplace as well as emphasizing quality and excellence in learning involving the use of modern technologies and the revitalization of learning in families and communities. In this chapter, we focus on the emergence and evolution of entrepreneurship education (EE) in Hong Kong, seen as a city region. In particular, we address the importance of partnerships and the participation of various stakeholders in providing quality learning opportunities. Very few studies have addressed the needs and approaches required for the continued delivery of EE programmes and activities in a sustainable way. After reviewing the literature relevant to EE, we draw on experience in Hong Kong to discuss how EE can be continued over a sustained period of time so as to create wider ranging impacts that match higher level objectives other than those at the individual level.

Introduction

The economic transition after the financial crisis of 1997 led to Hong Kong becoming a world-class business and service centre with a knowledge-based and innovation-driven economy. The vast proportion of Hong Kong's workforce is employed in the service sector, and more employers require their employees to

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possess the ability or generic competencies to formulate alternative strategies and to engage in entrepreneurship, communication, interpersonal relationship building, and teamwork. Hong Kong's success will depend crucially on the human capital of its current young generation (Education and Manpower Bureau 2005). Moreover, in Hong Kong, over 98% (around 320,000) of business establishments are small and medium-sized enterprises (SMEs), and these SMEs provide 47% (1.3 million) of the jobs in Hong Kong (Trade and Industry Department 2015). SMEs represent the backbone of the Hong Kong economy, but according to a Global Entrepreneurship Monitor report, the enterprise start-up rate in Hong Kong was just 9.4% in 2016 (Global Entrepreneurship Monitor 2017). A number of short-term factors may have influenced the slow enterprise start-up rate leading to the unsatisfactory financial situation, but insufficient provision of entrepreneurship education (EE) for young people could be a significant long-term inhibitory factor.

Internationally, the UNESCO Institute for Lifelong Learning (2014) has promoted the idea of the learning city which highlights inclusive, lifelong learning and learning for and in the workplace as well as emphasizing quality and excellence in learning involving the use of modern technologies and the revitalization of learning in families and communities (p. 27). While the school curriculum in Hong Kong has advocated the concept of lifelong learning (Curriculum Development Council 2001) since the start of the new century, more recently, the emphasis has been on the use of information and communication technology in education (Education Bureau [EDB] 2014), and the promotion of life planning education and career guidance in schools (Career Guidance Section, School Development Division, Education Bureau 2014) has been highlighted. However, there is still an urgent need and ample room to enhance learning for and in the workplace. EE can perform a distinctive role in enabling young people to be equipped with entrepreneurial competence to cope with challenging jobs or starting businesses (self-employment) to fulfil their personal, community, and working lives in Hong Kong. McLarty et al. (2010: 33) defined enterprise competency in their evaluation report of enterprise education in England: "enterprise capability [includes] innovation, creativity, risk-management and risk-taking, a can-do attitude and the drive to make things happen". This enterprise concept embraces, and provides clear guidance on, nurturing active citizens to have the "you can if you want to" mindset (McLarty et al. 2010). It is not necessary for everyone to be an entrepreneur, but everyone can be "enterprising" in today's competitive society, including Hong Kong. This is especially important considering the fact that many youths are looking for further education or job training opportunities in Hong Kong due to the keen competition in the workforce market.

Seikkula-Leino (2011: 71) cited Kyrö's (1997) conceptualization of EE in the school context that entails the three components of "self-oriented entrepreneurship, internal entrepreneurship and external entrepreneurship", which, respectively, emphasize "motivation, self-awareness, and creativity... and responsibility for learning in self-oriented entrepreneurship" and the encouragement of innovation through "co-operation between schools and work life" (Kyrö 1997: 72). In a systematic review of EE, Mwasalwiba (2010) stated that EE enables learners to cultivate positive attitudes towards life and career planning; develop personal skills;

form new businesses; recognize opportunity; and manage existing business ventures. The long-term impact of EE is useful for enhancing young people's enterprise mindset and empowering their entrepreneurial competence, which will in turn help to lower their psychosocial stress from unemployment and eventually lower the social stability risks. This impact of EE also reminds Hong Kong, as a learning city, of the need not only to focus on venture creation but also to seek opportunities and innovation through EE in order to sustain its further economic development. The UNESCO Institute for Lifelong Learning (2014: 35) indicated that one of the strategies to develop learning cities is to provide quality learning opportunities. This chapter will address the needs and approaches required for the continued delivery of EE programmes and activities in a sustainable way through a case study of the Teen Entrepreneurs Competition (TEC).

The TEC was a team-based inter-school entrepreneurship competition that was held annually in Hong Kong from 2003 to 2010, and one of its ultimate goals was the promotion of an educational movement to raise awareness of EE amongst stakeholders at all levels for the benefit of both students and local communities. Hence, the TEC was more than a concept, a process, a series of strategic actions and a mindset of learning: it was also an evolving vision and mission for the future in Hong Kong schools (Yu 2013). Between 2003 and 2010, the TEC attracted an average of 50 teams from over 25 secondary schools every year. Starting with roughly 200 participants from 2003 to 2005, the number of participants increased, being maintained at around 450–500 after 2006. The promise of the TEC as an EE programme was indicated by the doubling of the student participation rate and a dropout rate of less than 1% (with exceptional reasons) throughout its history. Moreover, the TEC effectively illustrated the beneficial sustainability of EE by creating an authentic learning environment and producing a win–win mechanism among participating schools, entrepreneurs and the Education University of Hong Kong (EdUHK) (formerly known as The Hong Kong Institute of Education) in the Hong Kong context. Thus, the TEC will be used as a case study in this chapter to address the sustainability of EE in Hong Kong as a learning city through partnership building.

Development of Entrepreneurship Education in Hong Kong

According to the definition of entrepreneurship given by the Commission of the European Community (CEC) (CEC 2006: 4), entrepreneurship no longer refers just to business-oriented activities but also to an individual's ability to actualize his/her own ideas through a combination of creativity, innovation, risk-taking, management, opportunity seeking and striving for sustainable development in different aspects of life. Entrepreneurship is more than just business ventures: it also involves the entrepreneurial mindsets that are essential to life in general (Gibb 2011). Thus, EE is multifaceted education that covers the aspects of both entrepreneurship and enterprise competencies (Seikkula-Leino et al. 2010) to fulfil two significant functions: first, to develop the entrepreneurial knowledge, skills and attributes of

young people to enable them to cope with future challenges (Gibb 1993; Hytt and O’Gorman 2004; Jack and Anderson 1999); and second, to alleviate the burden of meeting job market and economic development needs in society (McKeown Millman et al. 2006; Matley 2005; Kirby 2004; McMullan and Long 1987). EE is one of the possible key drivers in building an enterprising society (Mwasalwiba 2010) to sustain social and economic development (Volkman et al. 2009).

Currently, EE has become “a mainstream education component” across disciplines at university and school level in many countries (Cherwitz and Sullivan 2002; Gibb 2011; McLarty et al. 2010; Volkman et al. 2009) because it provides a means for students to gain an understanding of how their interests and talents can be integrated into further study, employment, community service and educational opportunities through its interdisciplinary nature (Oklahoma Department of Career and Technology Education 2000). Among the recipients of EE, a growing area of interest is young people in the school sector (Gibb 2008; Wilson and Mariotti 2011; Draycott and Rae 2011): for example, EE became part of compulsory education in the UK and Ireland in the 1990s (McLarty et al. 2010) and has been part of cross-curricular themes for basic and upper secondary education in Finland since 1994 and 2003, respectively (Seikkula-Leino et al. 2010). In Europe, a survey conducted by the Education, Audiovisual and Culture Executive Agency (EACEA) (2012: 29) found that two-thirds of 31 participating European countries highlighted entrepreneurship in primary education and almost all of these countries integrated the component of entrepreneurship into their secondary curricula to some extent. In the USA, entrepreneurship has been seen as the key driver of economic growth (Wilson and Mariotti 2011) and 12 “competencies” that every young person should learn about business and entrepreneurship before leaving secondary education have been identified. In Asia-Pacific countries, EE is a key consensus area for development (United Nations Educational, Science and Cultural Organisation, Asia-Pacific Programme of Educational Innovation for Development [UNESCO-APEID] 2013).

In Hong Kong during the early 2000s, EE was concentrated mainly in tertiary-level education; the hope was to inspire and encourage individual students to become entrepreneurs. Over the past decade, EE programmes have also been increasingly offered in secondary schools by various organizations and universities, including Junior Achievement Hong Kong, the Young Entrepreneurs Development Council (YEDC), the Wofoo Foundation, the University of Hong Kong and EdUHK (Cheung 2008; Yu 2013): for example, the school–company–parent programme (formerly known as the school–company partnership) was established by the YEDC in 2003 and later sponsored by the Hong Kong Jockey Club Charities Trust (Chiu and Zhang 2013: 58). The common goal of these programmes has been to develop young people’s “entrepreneurial spirit” and character through real experience gained in entrepreneurship, and the positive responses given by the participating schools, teachers and students indicate that this goal has been achieved to a certain extent (Chan 2005; Cheung 2008; Yu and Man 2009; Chiu and Zhang 2013: 58). However, figures show that in 2011, the unemployment rate of youths aged 15–24 was 8.3% (Economic Analysis Division 2017), and the percentage of

youths aged 15–19 taking part-time jobs increased from 7.5% in 1999 to 20.3% in 2009 (The Commission for Hong Kong 2011). In highly uncertain economic and job market conditions, employers are cautious about hiring new employees, especially inexperienced youths. In 2011, even employed youths aged 15–24 had more stable jobs, mainly working as service workers and shop sales workers (35.8%) or as clerical support workers (20.4%) (The Commission on Youth 2016); around half of the employed youth worked in junior posts. It seems quite normal for youths to start in junior posts, but the great challenge is to ensure their lifelong career development. A number of studies (e.g. Mok and Cheung 2008; Ngai and Chan 2007) have suggested that the provision of quality career-oriented curricula such as entrepreneurship programmes is urgently needed in the school and non-school sectors in order to tackle youth unemployment. Cheung (2008) further confirmed the effectiveness of EE in enabling secondary school students to understand many aspects of work, but it will be hard to acquire resources support for promoting EE if the existing EE programmes cannot be further refined to become quality school curricula. Currently, there are no official curricula and there is no policy commitment to promote EE to young people in Hong Kong. It is questionable whether Hong Kong is an “enterprising” learning city which is able to constantly meet the ever-changing needs of the economy.

In fact, EE is believed to have a close connection with the development of an entrepreneurship culture within a society that places emphasis on the values of competitiveness, innovation and creativity (Gibb 1993; Jack and Anderson 1999; Robertson and Collins 2003), and many of the existing EE programmes are actually based on the belief that they can contribute to both individual and societal improvements (Erkkila 2000). Some programmes even carry specific objectives with specific purposes or are targeted at particular groups of participants. For example, Deuchar (2006) argued that EE can contribute to promoting and enhancing citizenship education, and Kouriksky and Esfandiari (1997) reported the positive impacts of an entrepreneurship programme on lower socioeconomic black youth in the USA. In Europe, given the significant role of EE in supporting the main goals of the Europe 2020 strategy, the European Commission (EC) commissioned an international study on the impact of EE; the study identified 91 studies from 23 countries which found that, in general, students participating in EE are more likely to start their own companies in a more innovative and successful way than proprietors without an EE background (European Commission [EC] 2015). Moreover, compared with their peers, EE alumni are at a lower risk of being unemployed, are more often in steady employment, have better jobs and make more money (EC 2015). According to the EC’s study (EC 2015), EE has a positive impact not only on individuals but also on educational institutions, the economy and society. Hence, it is necessary for EE to be continued over a sustained period of time so as to produce these wider ranging impacts that match higher, macro- and micro-level objectives.

In the recent review of the “Learning to Learn” curriculum reform of 2001 in Hong Kong, entrepreneurial spirit was addressed through promoting STEM (Science, Technology, Engineering and Mathematics) education to further develop

students' creativity, innovation, collaboration and problem-solving skills, which are essential skills and qualities required in the twenty-first century (Curriculum and Development Council [CDC] 2015). It is expected that STEM education will also enhance the international competitiveness of Hong Kong and enable Hong Kong students to face challenges and contribute to opportunities that arise, such as the "One Belt One Road" policy in the latest development of Mainland China (CDC 2015). Apart from STEM education, the current business-related curricula in Hong Kong can instil an entrepreneurial spirit in young people and play a key role in empowering them to survive better in the future regardless of the career and life path they take. Cheung and Chan (2010) suggested that EE would have a positive impact on the strength of secondary school students' entrepreneurial spirit in terms of starting-up new businesses in Hong Kong. In Cheung's (2008) study, in which a group of 30 business subject panel chairs were asked their views on the possibility of offering EE through the introduction of a business subject, Business, Accounting and Financial Studies (BAFS), at senior secondary level, it was found that BAFS can fulfil the aim of promoting EE in existing secondary schools. The Education Bureau of Hong Kong should seriously consider the incorporation of EE into BAFS. In setting their educational aims, countries such as the USA, Australia, Japan and Taiwan view business-related curricula for secondary schools as cultivating entrepreneurial spirit and citizenship.

The TEC began as a response to the lack of a wider spectrum of focus and development of EE in Hong Kong secondary schools. As such, the aims of the TEC were: to promote EE in Hong Kong secondary schools through partnership building among EdUHK, schools and local communities; to enable secondary school students to integrate their conceptual learning into real practice in the business field so as to arouse their interest in active lifelong learning; to provide field experience learning for student teachers at EdUHK; and to offer an opportunity for business frontline practitioners to share their real-life experience with school students.

Teen Entrepreneurs Competition

The TEC was initiated as an entrepreneurship programme by the Business Studies Teaching team at EdUHK in 2003. It was an open inter-school competition, and all local secondary schools in Hong Kong were invited to participate in the competition by forming teams of between two and ten participants and running a market stall to sell Christmas or Chinese New Year items at the EdUHK campus for two to three days. The competition aimed to provide an opportunity for senior secondary students to put business theories into practice and to arouse their interest in opting for entrepreneurship as a possible career plan by running a small business in the form of a competition which was judged according to business plans and selling performance. Each school paid a registration fee of around HK\$1500 to enrol a maximum of two teams. The competition teams then brainstormed an innovative business venture on the theme of Christmas or the Chinese New Year, depending

on the period when the competition was held; wrote a business proposal; turned their business proposal into a real business; and competed on the market days. Different prizes, including best proposal, best product, best stall design and highest sales return, were awarded by a group of business teachers, school principals and local entrepreneurs.

Design Rationale

Different EE programmes use a range of methods to achieve various learning outcomes, which include the ability to identify opportunities (DeTienne and Chandler 2004) and the acquisition of entrepreneurial skills through experiential learning and reflective practice (e.g. Pittaway and Cope 2007). Lewis and Massey (2003) strongly emphasized that student-centred learning should form the basis of any EE programme, with students acting as agents who are able to learn and apply their knowledge in other contexts. In addition, EE should be led by “creativity, informality, curiosity, emotion and its application to personal and real-world problems and opportunities” (Penaluna and Penaluna 2008) that take place outside the formal classroom setting. Developing students’ interpersonal skills to maximize social interaction with different parties is also critical in the EE learning process (Man and Yu 2007; Yu and Man 2009). Hence, the TEC’s design rationale was to allow secondary school student participants to engage fully and actively in a complete business venture process in an authentic context under the supervision and guidance of their school teachers and instructors (student teachers). The TEC was a practical activity that stressed the multifaceted nature of business venture development by putting theory into practice through learner-oriented and social constructivist perspectives.

Organization

The TEC was executed as a team-based inter-school entrepreneurship competition in the format of a public flea market held at the EdUHK campus. Each team was provided with an instructor who guided and supervised the team and individual participants during the course of the competition to maximize the educational outcomes. In the hope of achieving a win-win mechanism for students at both secondary and tertiary level, student teachers studying the Bachelor of Education or Postgraduate Diploma of Education programmes majoring in Business Studies at EdUHK took on the role of instructors. The instructors participated in special training courses and workshops which conveyed entrepreneurship concepts and theories alongside practical business start-up skills. Equipped with such knowledge, the instructors collaborated with secondary school business teachers to: provide the knowledge and skills necessary for the creation of an innovative small business;

facilitate the writing of a business proposal, including details such as how the team would raise capital and target customers and issues such as the management of products, stocking, pricing policies, marketing, budgeting and possible risks; monitor the process of setting up the actual market stall and selling products; and conduct reflective learning after the competition. Such organization and design allowed the TEC to be an action-orientated, experiential and collaborative EE programme.

Core Activities

The core activities of the TEC can be divided into three main periods: preparation prior to the start-up of the flea market, actual start-up and post-start-up evaluation. The preparation period leading to the start-up took three to four months and involved a series of training sessions (for both instructors and student participants) and the ultimate output of a drafted and presented business proposal. First, the student participants needed to generate a creative business idea fitting a preset theme, such as love and care or environmental protection; to write and present their business proposals; and to transform the proposals into reality through either sourcing or producing their business products. In the actual start-up, which was a three-day period over a weekend, the teams learned to establish and manage their business in the form of a flea market stall at a weekend public flea market at the EdUHK campus. The output of this period was the market sales. Finally, after the flea market, the teams produced an evaluation report including individual and group reflections to seek indications of enterprise growth. During the competition, a range of parties, including entrepreneurs, school principals, teachers, students and customers, were invited to be judges.

Fruitful Benefits

The running of the TEC had fruitful benefits for the different participating parties, including the instructors, the school student teams and the customers of the flea market. The student teachers who acted as instructors were able to learn and conduct EE through actual practice. Each year, student teachers formed an executive committee in charge of the organization and promotion of the entire TEC event. While there was guidance from the EdUHK Business Studies teaching team, at its core, the TEC was uniquely an EE programme fundamentally owned and executed by student teachers and secondary school students. With regard to the school student teams, the TEC allowed the students to gain skills and inspiration in executing an actual business plan from start to finish. Importantly, they performed this under the suitable and useful supervision of instructors and school teachers to develop their enterprise competencies.

Intended and Unintended Outcomes

Throughout the years, the TEC was able to achieve both intended and unintended outcomes. One outcome was the positive increase in participation not only from school students but also from flea market customers and sponsors. When the TEC began in 2003, a total of 180 students from 14 secondary schools who formed 18 teams took part in the competition. As the event drew positive responses from schools and local communities, the participation rate steadily improved over the years. In 2004, a total of 42 teams participated, and by 2006, the number had increased to 49 teams involving 480 student participants from 29 different secondary schools. From 2007 onwards, the number of student participants averaged around 500 from 30 secondary schools, and the number of participating teams averaged 50.

Furthermore, the number of customers at the weekend flea market sale grew threefold, from around 1000–3000, between 2003 and 2010. The reason for this increase was that the flea market gradually became a recognized annual event both at EdUHK and among the local community through the media and press exposure it received. The success of the TEC also attracted sponsorship from different companies. Thus, the TEC can be seen as a successful promotion of EE among Hong Kong secondary schools and the local community.

There were also unintended outcomes, namely strong support from participating secondary schools and the excellent training opportunity provided for student teachers in their role as instructors. The student teachers gained more experience at the academic, operational and professional levels. At the academic level, the student teachers were able to strengthen their knowledge of EE and what entrepreneurship symbolized through hands-on practice. At the operational level, the student teachers took a leadership role as instructors, learning to manage teams, solve problems, take risks, control finances and communicate effectively. At the professional level, the student teachers were given an opportunity to act as facilitators, supervisors, co-workers and team builders through collaborative work with the secondary school teachers.

Significant Findings on the TEC

Over the lifespan of the TEC, systematic studies were conducted to improve the competition and its activities. These studies included an investigation of: the impacts of TEC participation on participants' perceptions of entrepreneurship and their level of entrepreneurial competency; the social interactions that impacted participants' effective acquisition of entrepreneurial characteristics; and participants' intentions towards an entrepreneurial career. Questionnaire surveys in both

the pre- and post-TEC periods and more than 20 focus group interviews were conducted over the 4-year period of the study (2003–2006). Both qualitative and quantitative evidence illustrated by the studies showed that the TEC helped to develop entrepreneurial characteristics among its secondary school participants (Man and Yu 2007; Yu and Man 2009). Most of the participants gained both business knowledge and the practical skills necessary for running a small business from the TEC. Participants reported positive views on personal growth despite the fact that some of them may not have had a good experience or made a profit in the competition. The findings also showed that most participants were strongly aware of the real difficulties and challenges of running a business. Fortunately, through social interaction with team members, instructors (student teachers), school teachers and business stakeholders such as suppliers, most of the participants were able to develop entrepreneurial skills such as planning, decision-making, marketing and risk management and to acquire proper attitudes towards entrepreneurship. Some participants, however, exhibited hesitation and reluctance in their entrepreneurship (Yu and Man 2009). In fact, the desirability of entrepreneurship lies in an attitudinal change in terms of entrepreneurial characteristics; therefore, a more in-depth conceptual understanding of entrepreneurship is needed for enabling an attitudinal change. Moreover, the studies showed that social interactions among the key stakeholders play an essential role in sustaining EE. The businessmen involved in the TEC commented that, through social interactions, they could see the participants' creative ideas and their adequate understanding and application of entrepreneurship in the context of an actual selling situation. The school teachers reported that the TEC had enabled their students to engage in a creative business venture and develop the necessary entrepreneurial competencies. The instructors (student teachers) found that the TEC strengthened their skills in facilitating group activities and that they gained more professional insights through collaborative work with school teachers.

The participants and other stakeholders generally provided positive feedback on the TEC. The research findings showed that the TEC had a positive impact on developing the participants' entrepreneurial character and was sustainable as an enterprise education programme in the local community. It was suggested that the sustainability of the TEC could be attributed to three dimensions: opportunities for individual comprehensive understanding, context for collaborative learning, and network for institutional support. Further strengthening of the sustainability of EE programmes through these three dimensions is necessary: for example, by maximizing individuals' practical experience and conceptual learning to make attitudinal change possible, improving the quality of collaboration by extending the community network through partnerships, and developing a closer working relationship with various stakeholders.

Sustaining Entrepreneurship Education in Hong Kong as a Learning City Through Partnership Building

In the Hong Kong context, the idea of establishing Hong Kong as an “Entrepreneurial Learning City Region” based on the “Learning Cities Networks” could be considered. This would entail a three-pronged approach: the incorporation of entrepreneurial skills and attitude development within all formal and non-formal school curricula, the enhancement of ICT and digital skills and the setting up of partnerships (Learning Cities Networks 2016). In addition, Mrs. Lai Chan Chi-kuen, Marion, the Permanent Secretary for Education of Hong Kong’s Education Bureau remarked (EDB 2015):

In Learning to Learn 2.0, our school curriculum...remains student-centred. It emphasises whole-person development. It aims to develop students to be self-directed life-long learners. It is about learning experiences inside and outside the classroom that promote holistic thinking, with an emphasis on the development of students’ positive values and attitudes, creativity, critical thinking and problem-solving skills, as well as humanistic literacy and entrepreneurship.

According to the Entrepreneurial Learning City/Region Worksheet provided by Longworth (Longworth 2014), other initiatives, such as the YEDC’s School–Company–Parent programme (YEDC 2016) and the recent advocacy of EE and career and life planning education (CLPE) by the Education Bureau, provide a context conducive to strengthening EE in both formal and non-formal school curricula. Hong Kong could consider linking local universities with overseas partners and governments to learn from their experiences with a futures orientation. More could also be learnt from the UNESCO-APEID (2015). Attention could be given to promoting schools, universities and other related institutions engaged in EE into learning organizations.

As discussed at the beginning, providing quality learning opportunities through building partnerships with different stakeholders is one of the possible strategies to establish Hong Kong as a learning city. From the case of TEC, it is not difficult to see that the sustainability of EE is not limited to making partnerships within the school organization possible: it also includes external support such as stakeholders, community practices and policymaking. From a formal and institutional perspective, a city-wide collaboration and partnership with larger institutions such as art galleries, libraries and museums on different areas could be created and could possibly explore innovative ideas about how these institutions can contribute to lifelong learning (PASCAL International Exchanges [PIE] 2016). Currently, schools in Hong Kong are preparing secondary school students for the school-to-work transition, but their focus is mainly on the dissemination of career information. EdUHK is conducting a project, the “School-University-Reaching-Enterprises (SURE) Partnership”, on promoting CLPE by planning education and career guidance for schools. This project aims to build a tripartite partnership among secondary schools, EdUHK and enterprises in Hong Kong which will perform a distinctive role to enable EdUHK students, enterprise practitioners,

school students and teachers to gain a better understanding of the values, principles, practices and resources of CLPE through a diverse range of learning activities. The major activities will include inviting enterprise practitioners to be career coaches and to offer seminars and talks to EdUHK and school students, conducting related research work on the CLPE curriculum framework, providing job engagement activities for school students, offering professional development programmes on CLPE to existing school teachers and facilitating EdUHK students to become CLPE ambassadors and to produce teaching materials in some career-related courses. There are two important values and principles underpinning this SURE partnership: first, across boundaries, that is, encouraging partnership and maximizing outputs by crossing the boundaries of school, university and enterprise; secondly, empowerment, that is, engaging all the key parties and training them as trainers to maximize the possible impacts. It is believed that through such institutional- and individual-wide partnership building, more creative and innovative ideas on CLPE can be worked out.

From the school organization perspective, Anfara and Mertens (2012) identified five key components for developing a new reform agenda in schools: programme coherence, teacher readiness, professional communities, technical resources and leadership. Teachers are the crucial agents of change in any school reform agenda and are the pioneers in learning activities; thus, they must possess the necessary subject and pedagogical content knowledge, high teaching competencies, and a positive professional attitude. Also, teachers need to work collaboratively and actively in building professional learning communities for the benefit of student learning. At the same time, schools need to ensure that the curriculum and assessment practices are aligned with the implementation agenda and that proper resource support and time are provided. Of course, the principal's leadership in setting directions, handling staffing issues and relocating resources for the reform within the school organization is essential. These components are interrelated and essential for solid partnership work throughout the process and within the school organization.

From the individual perspective, an emphasis on opportunity seeking in EE may possibly lead some to become opportunists without proper concern for others; therefore, ethical and social competencies and capabilities need to be stressed in EE (Yu 2014). According to Yu (2014), it is important to lead school students to engage in a wider learning context of social interactions and to help them to become more aware of the concerns of others and to better understand the world around them. Taking social responsibility and running social enterprise in a way that benefits society is a possible way to address and respond to public concerns and to strike a balance between individual and societal interests in the provision of EE. Hence, in Quebec, Canada, the local community needs would be the major concern of the entrepreneurial activities in school (Pelletier 2007). The key performance indicators of EE in Scotland are not limited to business or academic success but also include responding to community issues and the need for justice, truth and honesty (Deuchar 2008). Taking good care of ethical character building and social responsibility is the genuine meaning of "being entrepreneurial". Moreover, Nobel Prize winner Amartya Sen has reminded us that as cities become increasingly diverse with ever

increasing job and population mobility in the global economy, cultural issues may become critically important for future city development (PIE 2016). Facilitating students to learn about their heritage is also important (PIE 2016).

In a broader educational sense, schools could gain external support and continue to learn from relevant stakeholders, community practices and policymaking. Schools could consider: addressing both present and future community needs as well as the benefits of sustaining educational changes in EE for all stakeholders; attracting more collaborations and sponsorships from companies that uphold the spirit of entrepreneurship and concern for youth development in the running of their businesses in response to community needs; collaborating with social enterprises and selling their products in schools to raise awareness of social needs and need of social enterprises; conducting research work on EE with the tertiary education sector; building a school-to-school learning network; and building systemic change by aligning different stakeholders and enterprises to mutually support each other.

Developing EE in schools needs to call upon all the capacities built around both the internal school organization and external support. This could include the following components: students' learning needs, teachers' professional development, principals' leadership, professional learning communities, programme coherence, technical resources, school-based development in terms of systematic and cultural changes, a school-to-school network, educational needs, community practices, stakeholders' views, government support and policymaking. More importantly, creating a strong partnership building mindset for the sake of promoting students' interest in active learning needs is to be at the heart of sustaining EE in schools in Hong Kong as a learning city. Nevertheless, to establish Hong Kong as a learning city, and to take EE as an example, substantial work to gain government and policy support for reinitiating the TEC and promoting other EE activities in the school system is urgently needed in the near future.

Yu (2013) suggested that EE learning activities could be flexibly offered as formal or informal learning activities in different subjects or learning domains in schools, once the ultimate outcomes of EE can sharpen the enterprise mindset, enterprising capacity and entrepreneurial competence of students. Given the innovation-driven and interdisciplinary nature of EE, school principals, teachers, students and parents should work together to identify the most suitable mode for offering and arranging EE in schools. In addition to the example of the TEC in Hong Kong, a qualitative analysis of another business–university–school partnership (project W) using an “adopting-a-school” approach and involving members from the business units of a company as a funding agency and partner, a team of school development officers from a university and core group members from participating schools revealed that the development of such a partnership relies on clear roles and responsibilities being agreed upon, assigned and followed closely by parties as well as regular reporting and continual dialogue between the various partners so as to close any gaps and manage mutual expectations (Chiu and Zhang 2013: 59 and 68–69).

Recently, the publication of the Guide on Life Planning Education and Career Guidance for Secondary Schools (Career Guidance Section, School Development

Division, EDB 2014) highlighted the enhancement of career-related experiences for senior secondary students in various dimensions, such as “facilitating learning experiences about work” through the provision of “mentorship programmes” with non-governmental organizations (NGOs) and other agencies and “professional/business partnership programmes” (Career Guidance Section, School Development Division, EDB 2014: 27). Such emphases on life planning education and career-related experiences provide good and timely opportunities for schools to explore, in both formal and informal curricula, building up business–school–university partnership endeavours linked to fostering students’ entrepreneurial character, promoting learning for and in the workplace and revitalizing learning in the community, especially through the consensual engagement of experts and students in universities, teacher leaders and parents in schools, and members of business corporations and NGOs. Such multifaceted partnerships will further advance Hong Kong as a learning city. In the short term, it is imperative for teacher education institutions, under the auspices of the government, to enhance their pre-service teacher education and in-service teacher education curricula in EE under the context of curriculum reform and life planning education.

Conclusion

Entrepreneurship brings wealth and other intangible benefits to individuals and society, but its existence depends on the acquisition of enterprise competencies through quality EE at different levels. EE is well recognized as having a significant influence on the development of entrepreneurial knowledge, skills and attitudes in youths, and it appeals to all students no matter what career path they choose. In order to widen the impacts of EE in society, it is necessary to sustain such EE programmes over an extended period of time through an extension of partnerships. The TEC was founded to enhance EE in Hong Kong schools, and it not only brought forward new teaching methods and assisted teacher training but also highlighted some possible avenues of academic research. EE could be flexibly and creatively built into the existing school education through future studies focused on turning the TEC and other similar EE learning activities into quality school learning opportunities in order to keep Hong Kong a learning city. It is recommended that a series of thorough studies be conducted to review the development of EE in Hong Kong and to suggest strategies for policymaking, curriculum development, resource implications, teacher education and research work in the Hong Kong context.

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Chapter 10

The Role of Entrepreneurial Leadership in City Region Economies: A Case of Developing Small Firm Leaders

Louisa Huxtable-Thomas and Paul Hannon

Abstract Entrepreneurs are key actors in the knowledge economy and are fundamental to any entrepreneurial and dynamic ecosystem. They drive change and innovation through starting new ventures, growing businesses and investing in new ideas. They spot viable opportunities, they mobilise resources, they take risks and they are action focussed. The capacity and capability of entrepreneurs to lead and develop their ventures affect future success and sustainability. How entrepreneurial actors learn to lead is then central to developing a strong and adaptable ecosystem able to respond to the challenges presented by unpredictable and complex environments. This chapter presents a case study of how a leadership learning programme has been used in Wales to improve the learning of leaders of SMEs and how this has subsequently impacted on the regional economy as a result.

Challenges for a Nation

Since the year 2000, the UK devolved nation of Wales has benefitted from funding from the European Commission aimed at improving economic productivity in order to bring it closer in line with the European average. The overall aim of the funding is to make the funded regions more competitive within Europe and for the European Union as a whole to be more competitive globally.

During the last two periods of funding, between 2000 and 2013, approximately £3.5 bn was invested in Wales. Together with match funding from public and private sources, the funded projects have resulted in additional jobs, more sustainable businesses and increased GDP (Welsh Government 2015). In addition,

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these programmes support innovative practices and infrastructure, addressing problems of poverty, climate change and equality.

Even with some notable successes, Wales has not been lifted above the European average GDP. Not only is the UK the second lowest in productivity of the G7 countries, but Wales has the lowest nominal Gross Value Added (GVA) per head of the UK regions (ONS 2015). Add to this Wales' high economic inactivity rate (StatsWales 2015) and the result is a regional economy failing to keep up with its global peers.

The complex issues around productivity and global competitiveness have been dealt with comprehensively by authors over the last two decades (Jorgenson 1992; Schwab and Xavier 2011; Love and Roper 2015) and will not be addressed further here, other than to say that this background of productivity in a global context is a key challenge for regions of Wales, and not least for the city region of Swansea.

It is clear that direct investment in the region's small firms has been effective, albeit limited, but it has failed to address the apparent stagnation and slow development that prompted the funding programmes in the first place. This has resulted in a region dominated by small firms without the resilience to keep up with the fast-moving changes of contemporary global business.

If investment is not the keystone to improved performance, then what is? Research undertaken by numerous policy bodies suggests the underlying problem that of entrepreneur ambition and productivity. From a policy perspective, the Welsh Government have stressed the importance to the future of Wales of developing leadership skills within a business context: 'if we fail to improve workforce leadership and management skills and to apply those skills in the workplace, Welsh businesses will gradually find it more difficult to compete' (Welsh Government 2008: 10) and this viewpoint is shared across the UK. A report for the UK Government claims that both entrepreneurship and leadership skills are associated with enhanced turnover and productivity and that the development of these skills leads to behaviours that mediate improvements in firm performance (Hayton 2015).

This chapter will argue that these factors, which have failed to be addressed by cash interventions in the past, can successfully be improved through personal leadership development programmes and describes the key factors for such programmes, ultimately setting out how this type of learning can drive productivity in the entrepreneurial learning city.

The Role of the Entrepreneurial Leader in the City Region

Entrepreneurs are key actors in the knowledge economy and are fundamental to any entrepreneurial and dynamic ecosystem. This is because they drive change and innovation through starting new ventures, growing businesses and investing in new ideas. They spot viable opportunities, they mobilise resources, they take risks and they are action focussed. The capacity and capability of entrepreneurs to lead and

develop their ventures affect future success and sustainability. It has been argued elsewhere that environments with increasingly higher levels of uncertainty, unpredictability and complexity demand entrepreneurial responses (Gibb et al. 2012).

It then appears logical that entrepreneurial leaders would be an even greater asset; retaining the action-oriented, opportunity-exploiting aspects of the entrepreneur while setting visions, thinking ambitiously and driving performance. Traits and tricks of the 'leaderpreneur' are starting to be expounded in the popular press; however, the traits of these all-in-one business actors are of little practical use without understanding the processes or systems they create and how people can become entrepreneurial leaders.

The notion of entrepreneurial leadership has been explored from different approaches, but there remains a lack of consensus towards an overarching definition. The article by Roomi and Harrison (2011) aimed specifically to 'offer a relatively stable definition'. Further, they developed some practical approaches to how entrepreneurial leadership should be taught through considering how leaders learn to be entrepreneurial and how entrepreneurs learn to be leaders.

The authors reviewed existing literature to seek common themes: some identify the common aspects across both constructs; others define the inherent traits and/or behaviours of entrepreneurial leaders; while others explore the environmental conditions and stages of firm development affecting the need for entrepreneurial leadership modes or styles, in particular, transformational leadership. The task of finding a definition is also covered in the review: Surie and Ashley (2007: 235) adopt a simple working definition of entrepreneurial leadership: 'leadership capable of sustaining innovation and adaptation in high velocity and uncertain environments' and the linked view expressed by Vecchio (2003) that entrepreneurship is simply a type of leadership that occurs in a specific setting. However, Kuratko (2007) concludes that leadership is a type of entrepreneurship, i.e. that it is essentially an entrepreneurial activity.

In creating their own definition, Roomi and Harrison (2011: 2) discount the focus on innovation and the view that entrepreneurial leadership is a component of either entrepreneurship or leadership and suggest that it is instead the fusion of its two-component constructs. Their definition of entrepreneurial leadership as 'having and communicating the vision to engage teams to identify, develop and take advantage of opportunity in order to gain competitive advantage' is perhaps the most logical. However, none of the definitions to date is supported by empirical evidence or robust critical analysis.

It is clear from the lack of agreement in the reviews and studies undertaken to date that two things are happening: First, that researchers have identified a form of leadership that is more akin to the behaviours and attitudes expressed in entrepreneurs (or entrepreneurial individuals) and secondly that the study of entrepreneurial leadership is still in its infancy. A comprehensive review of leadership theory and research conducted by Dinh et al. (2014) published in a special issue of *The Leadership Quarterly* identified 39 theories ranked by thematic category. Entrepreneurial leadership as a form of leadership study was ranked 37 out of 39

with less than 1% of papers published during the 25-year time period reviewed being on this subject (Dinh et al. 2014).

The key outcome from this brief review is that the study of entrepreneurial leadership development is lacking the evidence needed to back up the assumptions made by policy makers about the value of developing the relevant mindsets and behaviours in entrepreneurs and leaders through well-designed educational learning programmes.

Furthermore, the research that has been published about how leadership is developed is largely focussed on the corporate community. Few academically robust studies have been undertaken into the ways that entrepreneurs learn leadership (Huxtable-Thomas et al., in press); however, a more complete concept of how entrepreneurs learn or how people learn to be entrepreneurs has been developed. This is described as ‘entrepreneurial learning’.

Why the Need for an Entrepreneurial Learning Approach?

Entrepreneurial learning is a current and growing area of research. For nearly three decades, many studies and conceptual ideas have been presented (Pittaway and Thorpe 2012) and in particular the implications for the design and delivery of educational programmes to stimulate outcomes of entrepreneurial thinking, mindsets, behaviours and skills. There is no need to repeat that work here, other than to say that it is evident is that the development of leaders within entrepreneurial contexts needs to reflect the modes of learning as experienced in the entrepreneurial life-world. This then impacts on the learning needs and outcomes and the underpinning design philosophies of any educational programme.

As identified above, there has been considerable research into understanding the concept, practices and contexts of entrepreneurial learning (see Pittaway et al., forthcoming, for a synthesis). The importance of this effort is realised when it impacts on education practice and processes, especially for entrepreneurs. This has previously been mapped by Pittaway and Thorpe (2012) and reflects many aspects that have informed the design and development of entrepreneur learning during the past three decades from the works of Cope and Watts (2000), Gartner (1988), Gibb (1987), Kempster (2009) Rae (2013) and many others. In essence, these authors have highlighted the importance of recognising specific contexts and ways within which entrepreneurs learn: situated; observational; vicarious; experiential; by doing and experimenting; from others; and through reflection.

It would make sense, then, that the pedagogic approach required to align with entrepreneurial contexts needs to be embedded not only within course design but more fundamentally in the delivery principles, i.e. the learning experience must be seen as: highly contextualised and relevant; based on specific challenges and opportunities; be associated with a clear need and a tangible action; action-oriented and allowing for reflection on prior actions and decisions; encouraging storytelling;

testing out new ways of thinking and acting; learning from respected and trusted peers; and living with the emotional roller coaster of success and failure.

The case presented in this chapter is built upon a strong research base and a learning model that has been tested in a university setting to provide a learning experience for entrepreneurs that aligns with those delivery principles.

Context for the Case Study

This case study is located in Wales, UK, and it is important to understand the context in which the leadership learning programme exists. Wales is an economy more than ever dependent upon the creation and growth of thousands of small and medium enterprises that add revenues to the economy and provide jobs for the local population. In summary, there are just over 238,000 private enterprises in Wales of which 77% provide employment only for the founder but still contribute 18.7% of total employment in the private sector. Of the remainder of enterprises, 21% have less than 50 staff with the larger firms comprising only 2% of the remainder. Only 1595 enterprises (0.7%) have 250 or more employees. These large employers account for around 38% of employment and 63% of turnover in the private sector which presents a major risk to a resilient economy. This has been illustrated clearly by recent threats to employment in south Wales represented by one of the largest private sector employers selling their interests in Wales (Kelsey 2016).

Using only basic descriptive statistics, it can be shown that small firms are central to the economic and social well-being of Wales. Not all firms are capable of growing, but Wales is certainly performing worse than other comparable nations. The recent performance of European Structural Funds in Wales suggests that investment alone is not enough to stimulate the growth considered to be possible in Wales. A new approach, as advocated by the UK Government and CBI, suggests looking at the individuals within the firm, not the products or services they produce. Using this same logic, effective leadership is considered to be one of the major factors of success in small- and medium-sized enterprises (SMEs) (Soriano and Martinez 2007) but more importantly lack of leadership is cited as a cause of failure in firms and a risk to the national and regional economy. When considered at the micro-level, small firms' change and growth are driven by the leader, often the founder, of the firm. With such a strong influence on the firm, the capacity for innovation and growth must be directly related to the capacity of this individual to embrace opportunity, risk and failure (Drucker 1985).

The need for leadership and management skills faces a further barrier because in practice many people who start up and cultivate SMEs do so without any formal prior entrepreneurship or business training and even fewer have exposure to formal leadership training before becoming the leader of their own organisation (Upton 1995). The high potential for background stress and emotional disturbance, isolation or attachment to their role that entrepreneurs experience because of their responsibilities as leaders in dynamic, agile but often vulnerable organisations

makes the pursuit of leadership skills more appropriate (Huxtable-Thomas et al. in press).

There are few peer-reviewed publications that agree on what SMEs should be taught or developed (Bolden and Terry 2000; Shalley and Gilson 2004; Adair 2009) and even fewer on how leadership development for the leaders of SMEs should be guided (Kempster 2009). This has left a space, only recently being filled, to look at qualitative research into leadership and in particular, entrepreneurial leadership development.

Since 2004, there has been an increasing move towards integrated, non-instructional models of leadership learning in the UK informed by the work of Kempster (2009) and the use of situational and experiential learning theory for entrepreneurs as advocated by entrepreneurship educators such as Rae (2005) and Gibb (1987). These types of learning aim to engage the learners in real-world learning that they can relate to everyday experience.

This chapter introduces observations made during research into the LEAD Wales and Leading Growth Programmes that back up the calls in the recent literature for further research in this area. The chapter will continue by providing a case study of what can be done by a university to stimulate the development of entrepreneurial leadership across the SME sector in Wales and its impact on economic and social well-being.

A Short History of the Leading Growth Programme at Swansea University

LEAD Wales, and subsequently Leading Growth, was created to address the gaps in knowledge and experience of the people that are taking up the challenge to grow the Welsh economy: the leaders of the nation's SMEs.

When LEAD Wales was first commissioned in 2009, it was well known that leadership development could lead to improvements in the performance of enterprises but exactly what caused this to happen had not been identified. Nearly 6 years later, a far better understanding of what really works, both during the programme and afterwards, has emerged due to the dedicated research that helped measure and develop both programmes.

At the time of writing (January 2016), 906 LEAD Wales and Leading Growth delegates have contributed at least 2424 new job opportunities and an additional £52,433,908 to the Welsh economy. These are only headline numbers based on impacts achieved during the 10 months that each delegate was enrolled on a programme and clearly cannot tell the full story behind the impact on the individuals and their organisations beyond this experience. Changes that start during these leadership development programmes continue for years afterwards as witnessed by follow-up interviews and discussion groups with past participants.

Where Leading Growth Began

LEAD Wales is a 10-month programme of leadership development, delivered through a combination of experiential and situated learning. The course was funded from the European Social Fund administered by the Welsh European Funding Office and the university partners. During each 10-month course, groups of up to twenty-eight delegates (all decision makers in SMEs and often owner/managers) spent up to seventeen days attending a diverse series of sessions which encouraged them to look at and often challenge their preferred leadership styles, re-evaluate their perceptions of effective practice in small business leadership and help them address opportunities specific to their organisations, particularly focussing on their future aspirations.

This model had originally been designed by academics at Lancaster University based on work with leaders of small business and ran there successfully as the LEAD programme. During 2013, it became clear, as a result of the collection and analysis of data from programmes that the LEAD Wales delegates responded differently to those in Lancaster. The response of the Lead Wales lead partner (Swansea University) was to combine their evolving knowledge of the programme in practice with published academic research and prior experiences of programme team leaders to identify not just what worked but also why it worked. Keystone learning elements, such as coaching training, formal reflective practice, presentation skills and sector- or gender-based learning groups, were identified for leaders in Welsh SMEs and, as a result of a funding opportunity through WEFO, the Leading Growth programme was designed and piloted between spring 2014 and summer 2015. During the 5 years of the combined programmes, 906 individuals from 750 enterprises completed one of the leadership development courses.

The remainder of this chapter relies heavily on the various elements of the combined leadership development programmes to explain how and where the influence on leadership development has been experienced (Fig. 10.1).

Design of ‘Leading Growth’

Leading Growth was developed as a structured programme, formally introducing the practice of reflection and reflective learning, as well as giving the learners the opportunity to complete a formal assignment in order to achieve a recognised qualification. This is a key difference—experience gained from LEAD Wales taught us that there are different levels of ‘experiential’ outcomes that can be thought of as a ladder of progression (see Fig. 10.2). At the bottom of the ladder is the superficial experience; it may be fun, it may jolt a few thoughts, but the wider implications of the learning are often lost. This is often described by those who have participated in role play, or team building exercises that did not reflect their real lives.

Pedagogy	Activity	Emotion and/or consequence level
Action research and/or action learning in the workplace	Observation, experimentation and reflection in real life situations. Learning translated directly to action	High emotional engagement with the task and the outcome. Emotions are authentic and relate to consequences for self and/or others.
Reflection on practice	Reflection on existing practice, which may take place away from the location of practice. Learning relates to principles of action	Some authentic emotion related to consequences of the activity and desire for personal improvement of skills or circumstances
Simulations (electronic or in practice)	Simulated activity in a virtual or real-life environment. Learning may relate to action or practice.	High levels of emotion and engagement but few consequences.
Team games in contrived situations	Learning experiences , based on metaphors, designed to engage emotions and reflectivity. Doesn't translate to action or behavioural change.	Some level of emotional engagement as a result of engagement with the task, rather than the outcome.
Performance and/or scripted role playing	These are engineered experiences that bear little or no similarity to real life practice, often in a formal learning environment. No lasting impact on action or behavioural change.	Little or no emotion or perceived consequences

Fig. 10.1 Ladder of experiential learning (Hannon et al. 2015)

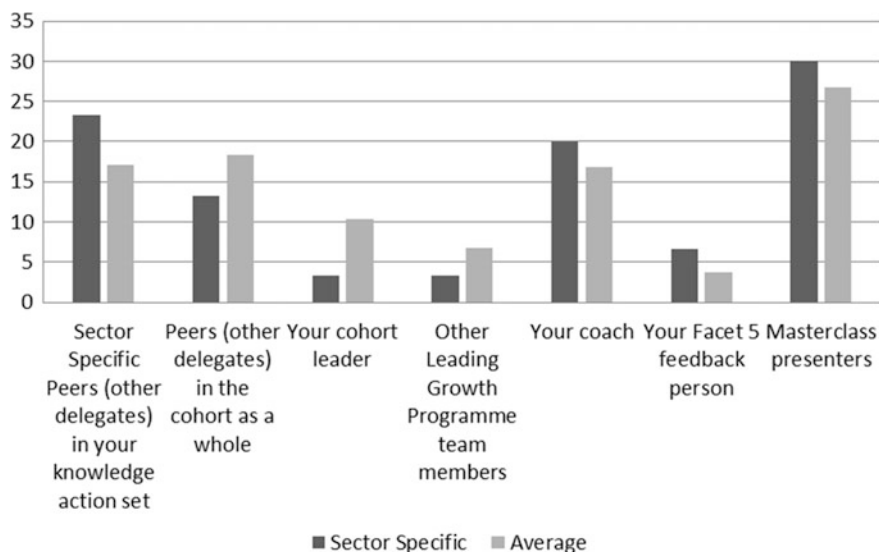


Fig. 10.2 Percentage responses to statements about influence of programme elements or individuals for sector-based cohorts

At the top of the ladder are the lived experiences, those that had real credibility and consequences and as a result are often learnt and remembered outside of or beyond formal learning environments.

The aim of creating the Leading Growth programme was to push the learners up the ladder to deeper experiences whose relevance and implications beyond the formal learning environment were immediately obvious and whose lessons remained with them. In addition, the Leading Growth programme aimed to create lifelong learning habits and to encourage the participants to reflect on, learn from, and continuously develop themselves and their enterprises as a result of encountering new experiences.

Leading Growth discarded the unstructured and generalised format of LEAD Wales and recognised the delegates' needs to assign and apply what they were learning to key leadership tasks. The structured approach described above was coupled with a deeper recognition of the value of emotional engagements and the unique leadership preferences of the delegates, identified through personality profiling and personal reflection. The model adopted in Leading Growth was developed by the Programme Manager (Gary Walpole), and this explicitly stated the learning outcomes and linked the learning to emotional intelligence models.

Each session was described as either:

- *Leading self*—focussed on self-awareness and self-management
- *Leading people*—focussed leaders on their awareness and management of others
- *Leading the organisation*—taught the leader to set visions and instil values and culture
- *Leading growth*—introduced new tools and methods for strategic thinking and growth (Table 10.1).

Personal reflection became the mode of assessment for delegates seeking to achieve a qualification in leadership and management. While it is true that leaders of SMEs are not, as a group, oriented towards gaining additional qualifications, the value of using a formal structure of reflection that is aimed at strengthening the learning was appreciated by delegates as a good habit that allowed them to 'slow down and think about their next steps'. In short, by writing a reflection on a learning experience and how this could be applied to their firm, delegates felt that they were more likely to implement change. Delegates became more realistic and specific about what would be achievable. The results of the study suggest that they experienced a greater sense of achievement as they were able to measure and celebrate their progress.

Results of Research into LEAD Wales and Leading Growth

The following sections summarise the outcomes from the LEAD Wales and Leading Growth programmes achieved between 2010 and 2015. The start of the section identifies which elements of the programme had an impact on leadership

Table 10.1 Description of the elements of the combined programme

Element	Description	Purpose (notes)
Induction	Introduction to the programme	To start the process of building trust in the group
Experiential event	Experience-based learning activities, including games and tasks	2-day overnight residential course to cement the trust in the groups, to introduce the delegates to the habits of reflecting upon their actions
Shadowing	Observing another in their workplace and being observed	To experience alternative perspectives of leadership and enterprise
Masterclasses	Presentations and workshops from credible experts and leaders	To provide knowledge and/or information about alternative leadership tools and styles
Coaching	Personal leadership coaching	One to coaching with a professional coach to help address personal barriers to action
Action learning	Small group sessions of delegates using action learning principles	To assist delegates to identify and address pathways to effective action
Informal peer interactions	Any informal interactions amongst delegates, i.e. breaks, lunchtime	Allows delegates a non-facilitated space to discuss issues and ask questions of peers
Exchange	Short consultancy-type activity	One-to-one exchange of skills between delegates
Online forum	Online platform for communication	To provide consistent communications to delegates
Learning and reflection days	Days where prior learning is discussed	To allow and promote reflection and to collate the learning
Graduation	Final celebration of the programme	To provide a forum for sharing experiences

development from the educational perspective while the remaining identifies the key learning about how entrepreneurial leaders learn and the outcomes that they can achieve when they do.

Learning Lessons from Leadership Development

Researchers from the LEAD Wales and Leading Growth programmes collected data from delegates about their intentions, aspirations and the programme's development and impact throughout a 5-year period. During this time, the knowledge and understanding of leadership development programmes have improved and alterations have been made to the questions asked and delivery styles used.

Data were gathered from delegates at entry to the programme and at graduation to measure changes in the delegates as a result of participation. This was analysed

throughout the 5 years by a dedicated team of researchers and lessons passed to the leadership development team on a regular basis in order to influence delivery and design of the Leading Growth programme, as well as report against progress of LEAD Wales.

The remainder of this section of the chapter looks at the results of that analysis and provides an insight into some of the lessons learned about the impact of the combined programmes on the individuals, their enterprises and how policy actors can encourage learning in order to facilitate real change.

Leaders Learn Together, But They Are All Unique

The last 5 years of running the LEAD Wales and Leading Growth programmes have shown that there is no common characteristic amongst the individuals that self-select to undertake leadership development programmes. What they do have in common is that they have experienced challenges within their businesses and personal lives, motivating them to seek support in their personal development to allow them and their businesses to move forward.

The LEAD Wales and Leading Growth teams have delivered leadership development programmes to cohorts of business leaders. Cohorts have typically been made up of business owners from various business sectors, with varying years of experience in leading a business, and varying levels of prior education. Cohort members have consistently been of mixed age and gender throughout. However, in order to assess if there is more to be gained from single sector or single gender cohorts, the Leading Growth programme trialled these options.

Following the completion of the LEAD Wales and Leading Growth programmes, analysis of the influence and outcomes of the programmes on the delegates indicates that the approach taken by the leadership development team is supportive and influential to all types of learners. While it is evident from the analysis that different groups, cohorts and delegate types will respond differently, it is equally evident that the level of flexibility in the programme due to the mix of delivery and teaching styles offered provides learning opportunities suitable to all these different types. While sector, experience and position in the business influence the way the programme impacts on delegates, the design of the programme allows for delegates to experience teaching methods that suit them personally.

Gender- and sector-based cohorts had excellent outcomes for enterprise growth, achievement of leadership aims and well-being, despite initial concerns about competition and the ability to trust their fellow delegates. The programmes' strength and the benefit for the delegates are in facilitating a trusted and supportive environment for learning, which can be done in any diverse group of leaders or potential leaders.

This starts during an initial experiential event which sets out the mode of learning and interaction for the rest of programme. Introducing shared and personal reflective learning within a group environment, as well as developing trust through

encouraging open sharing of leadership experiences, forms the foundation of the rest of the programme.

The Impact of Sector-Specific Learning

Following the development of the Leading Growth programme, specific business sector cohorts were trialled for delegates from firms specialising in computer technologies, life sciences, energy or construction. The aim of the trial was to assess whether they could benefit the delegates' learning experience. Initially, there was trepidation by the delegates' about the potential for close competition and unwillingness to share experiences within a sector-specific cohort. However, these fears were unfounded. What was witnessed within these sector-based cohorts was a closer peer-to-peer experience because of their shared experience and knowledge. This did, however, create a problem during the action learning sets where the aim was to help each other by asking open questions to get to the bottom of issues, but required facilitation to stop delegates providing direct advice.

The results illustrated in Fig. 10.2 show the comparison between the average reactions of mixed cohorts and sector-specific cohorts to the different people involved in the learning. The trust and influence developed within the action learning activity was more influential for the sector-specific cohorts, and they became more influenced by masterclass speakers, the person who fed back their individual personality profile (Facet 5) and their coaches.

Based on the delegates' feedback on their shadowing experience, it became apparent that a sector approach facilitated trust that enabled them to be honest in their conversations. The proximity of a sector-based cohort may present challenges for some potential businesses: perceptions of competition, a lack of respect for the delegate's own sector and confidentiality issues could have hindered the building of relationships. However, once these challenges and potential barriers were overcome, targeted groups were able to challenge and drive each other forward.

The Impact of Gender-Specific Learning

A women's cohort was facilitated by the Swansea University team. The demand for this programme was the highest ever experienced by the team, supported by recommendations made by a network that the women already trusted, which helped reduce the concerns, barriers and uncertainty about committing to a new programme. Figure 10.3 illustrates the differences between how men and women are influenced by the various elements of the programme and highlights how men and women learn in different ways.

The evidence suggests that women-only groups have a stronger preference for learning from peers and from the cohort leader, who is seen as a facilitator but not necessarily a role model or expert. This is different from the average feedback

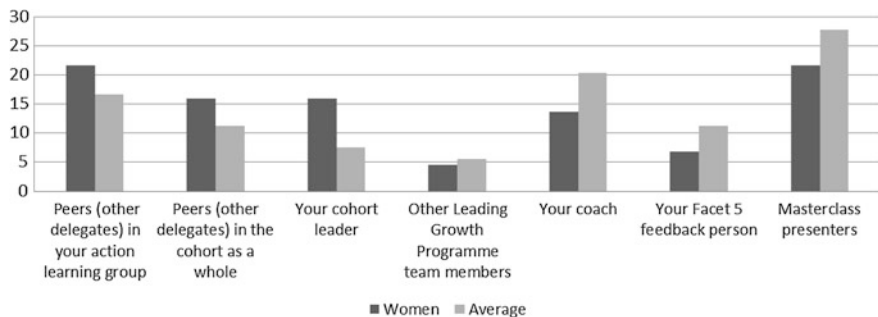


Fig. 10.3 Percentage response to statements regarding influence of peers and leadership development team members on delegates according to gender

received from mixed cohorts across the combined programmes who generally state a preference for one-to-one relationships such as those with the coach or the Facet 5 feedback person and role models such as the masterclass presenters.

Impact on Leaders and Managers

The Lead Wales programme had focussed on training owner-managers in leadership. However, for the Leading Growth programme, two cohorts were established to develop potential leaders in management roles. This cohort responded differently than the average to the training being offered, and as a result different elements of the programme were more influential to them than for the more typical ‘owner-manager’ learner group. The main difference seen between the owners and managers are the people they consider to be influential (Fig. 10.4).

On average, leaders are more likely to consider each other to be influential in their development throughout the programme, possibly because there is an understanding of how to establish and lead a business. However, the potential leaders’ (managers) cohort was far more likely to consider the programme leader to be influential. The differences seen in how this cohort chose to learn and develop are indicative of their experience of working within the hierarchical establishment of being an employee, whereas owners are more independent in their approach to gaining information and making assessments. Although the Facet 5 personality profiling was considered to be useful by all, potential leaders, in particular, considered the one-to-one feedback on the personality profile to be influential, whereas only 3.7% of owners considered this to be influential. This is possibly because Facet 5 provides the managers with ways of improving their relationship with those to whom they report, whereas owners do not have the same type of challenge within their roles. This is an important learning point as to where this type of detailed profiling is useful.

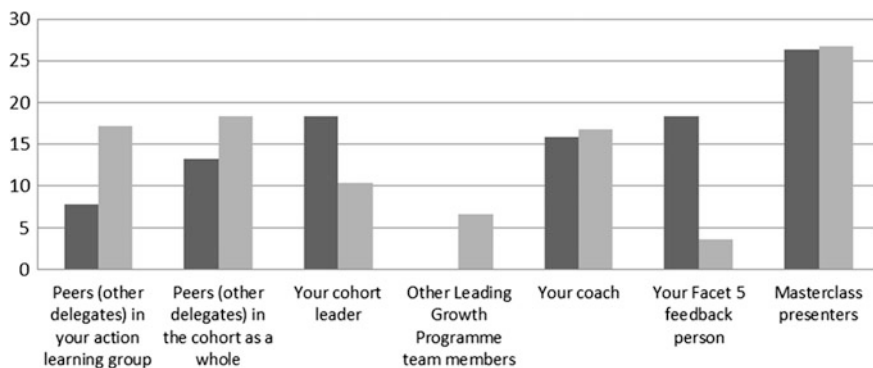


Fig. 10.4 Influence of peers and leadership development team members on leaders and managers

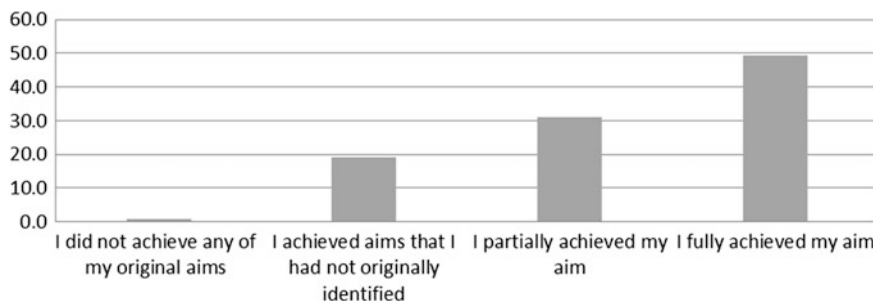


Fig. 10.5 Percentage responses to statements about achievement of their personal aims

Focus on Individual Achievement

Contribution to Individual Achievement

People who join LEAD Wales or Leading Growth are making a decision to join a programme aimed at supporting owner-managers who want to grow their enterprises. By graduation, over 80% of the delegates had fully or partially achieved their aims, while a further 19% succeeded in achieving aims that they had not initially highlighted for personal or business growth. The delegates identified their aims and objectives from the start. These aims were often both in terms of the business and for their personal work–life balance (Fig. 10.5).

On entering the programme, the delegates had their own expectations about what would be delivered and achieved via a leadership development programme. However, 51.7% of LEAD Wales and Leading Growth delegates considered the programme to have exceeded their expectations. Given the varying levels of education, prior experience and training amongst the delegates, it suggests that the quality of the programmes offered is high and effective for a diverse population.

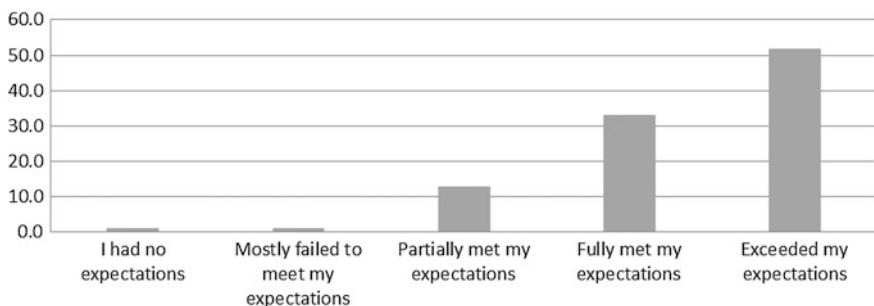


Fig. 10.6 Percentage responses to statements about meeting expectations

On the whole, the programmes being offered by Bangor and Swansea Universities provided successful and beneficial programmes for businesses (Fig. 10.6).

Enterprises Benefit from Leadership Development

When individuals have joined LEAD Wales or Leading Growth, a period of change or a major event in the lives of the owner-manager has often taken place in the 12 months prior to joining. These events, such as ill health, divorce, or a loss of a major contract, or a sense of being out-of-control or overwhelmed by the business, can lead to the owner-managers seeking support in order to re-establish their position within their business and driving their next phase of growth.

Delegates were asked to consider what has happened to their enterprises within the 12 months prior to joining the programme, and again at graduation. The results indicate that the influence of the programme allows the delegates to effect changes in their businesses during the 12 months of the programme, enabling them to grow and develop post-graduation. In Fig. 10.7, it is possible to see how the occurrence of events impacting the business changes from uncontrolled events, such as loss of a major contract, to expansion into new markets or premises. By the time delegates graduate from one of the programmes, they are often employing more staff, expanding their premises and introducing new products or services. While this matches with the overall project objective to encourage and support enterprises to grow, there is also a reduction in the number of companies reporting reduced turnover and employment. This suggests that the programme has a positive impact on maintaining enterprise size.

Turnover and Employment Trends

Results from the delegates who completed the programme suggest that the majority of participants' enterprises either increased or maintained the level of their turnover.

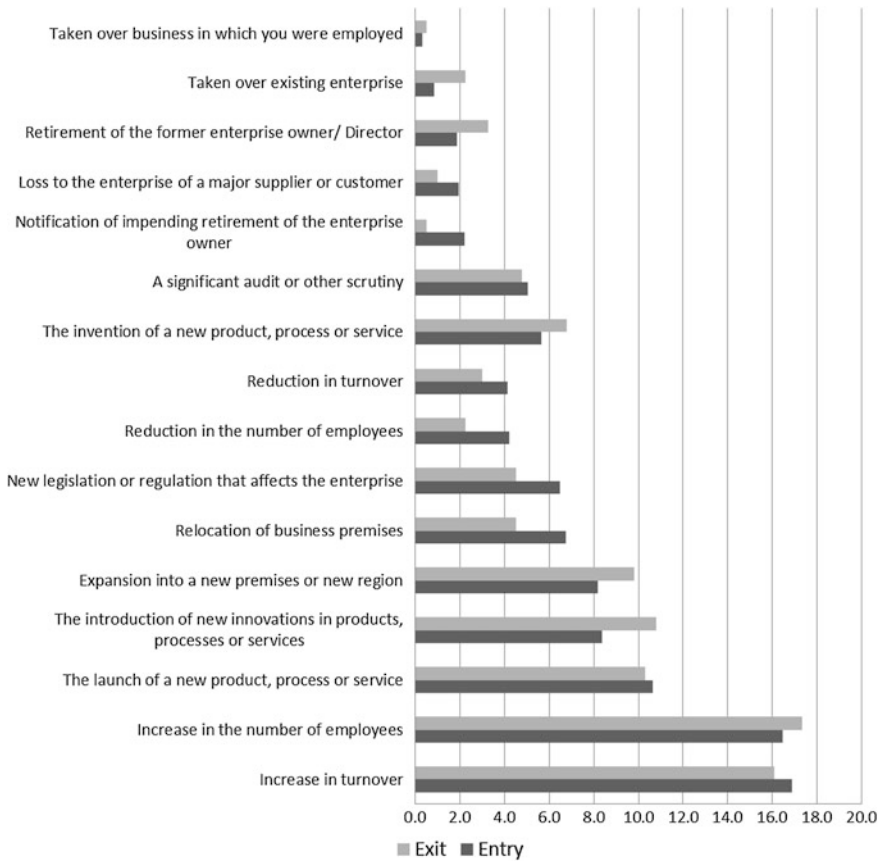


Fig. 10.7 Percentage of delegates reporting changes within their enterprises at entry and exit from the programme

As shown in Fig. 10.8, 53.5% of delegates were able to increase their turnover by up to or over 20%. Less than 10% of companies experienced a decline in turnover during the 10 months of the programme.

The same principle holds true for increases in employment, with 50% of participants reporting they had increased their employment levels during the period of the programme as shown in Fig. 10.9.

Impact of the Elements of the Programme

Table 10.2 shows the correlation score (rather than percentage score) between the participants’ preferred elements of the programme and the positive changes in employment or turnover. This is used to indicate which parts of the programme had the most positive reaction and benefits for delegates.

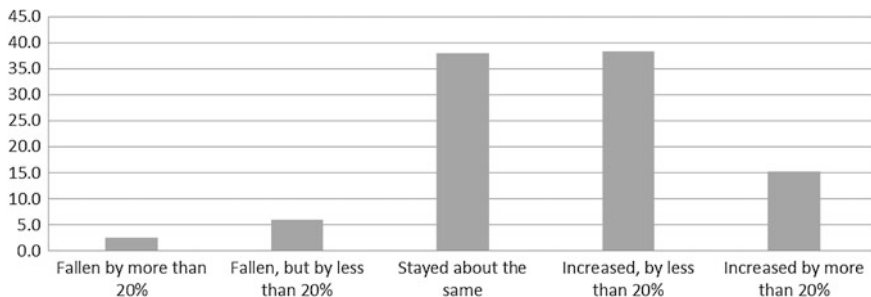


Fig. 10.8 Average percentage changes in turnover post-programme graduation

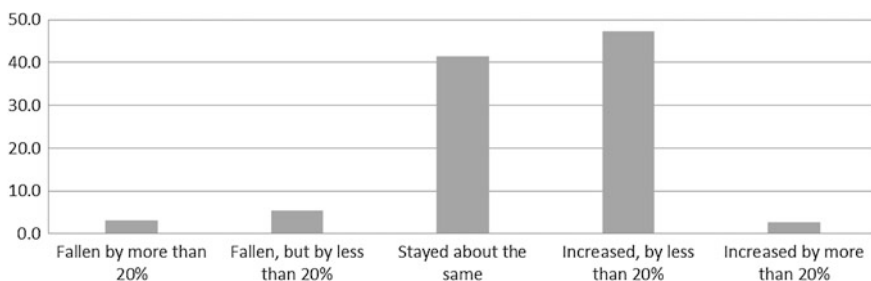


Fig. 10.9 Responses to statements about average percentage changes in employment at programme graduation

Table 10.2 Programme element impact upon firm growth

	Impact upon employment		Impact upon turnover	
	Negative	Positive	Negative	Positive
Peer-to-peer	0.68	82.65	1.37	81.28
Experiential	1.40	81.82	1.86	83.68
Masterclass	2.4	79.21	1.64	79.67
Action learning	2.10	76.46	0.70	76.46
Shadowing	2.28	71.32	2.54	71.83
Coaching	2.39	69.38	1.91	69.86
CMI Website	4.53	57.87	4.80	58.67
Online forum	5.22	44.58	4.02	46.59

The ‘positive’ data represents business owner-managers who reported the programme elements as being: ‘a little helpful’, ‘helpful’ and ‘very helpful’, and also turnover and employment remaining the same, or growing by up to, and over 20%. The ‘negative’ data presents the business owner-managers who reported the programme elements as being ‘unhelpful’ or ‘neutral’ and their employment and turnover reducing by up to and over 20%.

The findings presented in Table 10.2 indicate that each of the elements of learning has a positive influence on business development, either in impact on employment or turnover. While there is a positive trend indicated for each element of the programme, some elements were more influential than others.

The overnight experiential and the peer-to-peer elements of the course are described as most helpful, and there is a high correlation between those who report this together with improvements in both turnover and employment. Over 80% of the business owner-managers providing data claimed that they found these two programme elements to be: a little helpful, helpful or very helpful, and that their turnover and employment benefitted. Interestingly, those programme elements that were not considered to be as helpful (i.e. negative) had a lower correlation with negative changes on employment or turnover, showing that if delegates did not have a preference for a particular learning element, it was unlikely to have a negative impact on turnover or employment. The data support the design of the programme as influencing the strong, facilitated relationships garnered as a result and support the proposition that leaders of small businesses prefer learning in ways that involve others and have practical elements, and where the learning method is appropriate and preferred, there is a positive relationship with enterprise growth.

Return on Investment

The programmes have generated a 5.83% return on the original investment of £9,006,605 from the European Social Fund. In total, the delegates have contributed to the creation of 2424 new jobs—with the cost of investment per new job calculated at £3715. The creation of these new positions has also contributed a net increase of £52,433,908 to the Welsh economy, indicating the addition on average of £21,631 in turnover per new employee. On average each company has generated an increase of £57,874 in turnover.

The overall impact of the programme has been measured against increases in company turnover and new employment opportunities. Of the 906 delegates who graduated from the combined programmes, 725 delegates were on the LEAD Wales programme, and 181 delegates were on the Leading Growth programme (Table 10.3).

Since the 2014 annual report, the net increase in turnover in the delegates' enterprises has increased from £32 million and includes a further 400 new jobs. This indicates that the programmes have continually supported business growth despite ongoing economic challenges. LEAD Wales and Leading Growth have both developed since the original LEAD programme and have adapted to the changing needs of the businesses in Wales' convergence region. Even allowing that some of this growth would have happened without the combined programmes, external evaluation based on a limited sample has calculated a conservative return on investment to GDP of £2.5 for every £1 invested.

The return on investment for the LEAD Wales and Leading Growth programmes goes beyond the impact on the Welsh economy, business growth and jobs created.

Table 10.3 Summary of the total economic outputs of the LEAD Wales and leading growth programmes

Net increase in turnover	Gross increase in employment
£52,433,908	2424
Return on investment (public sector investment as a percentage of total net increase in turnover)	Programme cost per new employment opportunity
5.83%	£3715
Average increase in turnover per delegate	Average increase in turnover generated per new employee
£57,874	£21,631

The value of a leadership development programme to individuals and enterprises has allowed business owner-managers to increase their confidence and levels of well-being, in turn improving their work–life balance. Empirical evidence also indicates that leaders invest more back into their staff as a result of their own participation, which can also enhance and develop further university–business relationships.

The Leadership Development Team Must Be Responsive, Credible and Authentic

As stated previously, LEAD Wales was experiential in nature and encouraged business owner-managers to review their leadership styles and focus on change to drive growth. In addition, Leading Growth added a formal element of reflection and planning to leadership processes. The combined programmes were both designed to facilitate more effective leadership styles to be adopted and to expose leaders to peers and role models that who they would not otherwise have met. While the immediate outputs of this activity have been seen—delegates stating they are more able to think and act strategically and be more confident in their leadership—some less obvious learning outcomes have consistently been reported as a result of the programme, regardless of whether taught or introduced during the various learning elements.

Practical skills such as time management, delegation, strategic planning, setting and maintaining consistent policy and communicating vision were not directly introduced within the programme. However, those are considered to be the agents for improving business performance as a result of improving leadership, which delegates attribute to learning during the 10-month programme. This is also evidence that the course does not need to be completed to have an impact. Business owner-managers are seen to diversify, enter new markets and re-profile business aims and ambitions prior to course completion, apparently catalysed by the course rather than waiting for the course to be completed to feel empowered to engage in change.

What appears to be happening is that the habits of learning introduced during the programme, those of learning through observation, from peers, by seeking insights from credible role models and through structured reflection, motivates or inspires delegates to seek and/or practise other skills.

Feedback from delegates during the combined programmes has confirmed to us that the role and status of the people delivering the programme is of prime importance. Delegates often state that they could trust the facilitators and coaches because 'they had been there and done that' as current or former owners of small businesses, and further that they (the participants and educators) could relate to each other, which aided communication and empathy. The credibility of the facilitators, coaches and speakers appears to be an important element in engaging the participants in the learning, but more accurately, lack of credibility led to quick disengagement. This had an impact on the peer-to-peer networking, action learning sets and the reflection supporting each masterclass. It is within these less-structured learning environments that the knowledge was found to be cemented as a result of the masterclasses. The learning outcome was not that the participants had absorbed and could repeat the information presented to them, but rather that they had absorbed the information and considered how it could be relevant in their personal circumstances and business context.

Conclusions on the Leadership Development Process

It is clear from the research that the combined programmes had a significant positive impact on the health and well-being of delegates, ultimately leading to more sustainable enterprises capable of continued growth. Completing a qualification allowed learners to structure their thoughts and keep a record of their development, which in turn has enhanced the capacity for changing beyond what would be expected in the general population of leaders. The good habits that each leader (delegate) was encouraged to discover and adopt have been taken back to their enterprise and shared with the wider business community. There is evidence here to support the policy supposition that growing an entrepreneurial business starts with developing the leader.

Recognising the importance of diverse peer learning groups was an integral part of the programme, providing leaders of SMEs with the group of peers and role models needed to drive self-improvement, resulting in improvement in their enterprises. Even a sector-specific group can be diverse, as long as there is a mix of personal experiences, backgrounds, gender and age as well as product or market bases of the firms.

Personal and professional challenges motivate leaders to attend programmes. Focussing and, where possible, tailoring the programme to the needs of individuals allowed them to build the self-confidence and resilience needed to drive changes in their enterprises. By moving away from 'enterprise growth' and developing a leadership mindset in the individual, more and greater possibilities are pursued.

Doing this over an extended period (up to 10 months), and recognising the real-life implications of change on the individual, by providing a supportive environment, can also lead to improvements in well-being that are diffused into the workforce.

LEAD Wales and Leading Growth providers share the view that leadership is not about the day-to-day management of staff, resources or sales. The programmes do not teach processes of business planning or strategy creation. Instead, they promote creating and implementing a vision and culture based on clear values that are reflected by staff at every level. The programmes do this initially by encouraging self-awareness, empathy with others and the ability to change. This is what drives sustained growth outside of and beyond the programme.

Successful leadership development results from creating practical learning experiences that the leaders of SMEs can individually relate to and encouraging them to take a more considered approach to implementing this straight away in their enterprises. Real and practical experiences create deeper emotional involvement, encourage leaders to reflect on their activities and ultimately create habits that can turn challenging situations outside of the classroom into positive learning environments and even business opportunities. All of this is only possible if the team responsible for delivering the learning opportunities is credible and authentic.

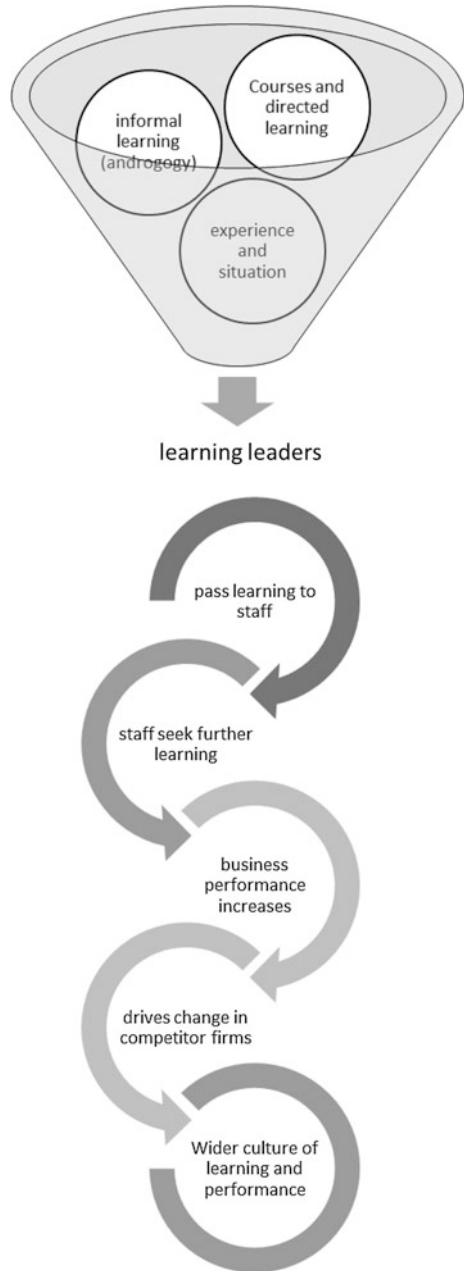
Conclusion on the Role of Entrepreneurial Leadership in City Region Economies

This chapter aimed to provide an illustration of the case of a university in Wales stimulating the development of entrepreneurial leadership capacities in the owners, directors and managers of SMEs. It is clear that this approach supports the development of such an ecosystem through wealth creation, job creation, new innovations, sustainable firm growth and positive links with the university.

This study is an important starting point in the journey towards understanding the complete role that a university can play within an entrepreneurial ecosystem. This model has been valued by practitioners for its contribution to Wales, as evidenced by the receipt of a national recognition award in 2015, but as yet there is little robust data to compare it to in understanding whether this type of performance improvement would be the outcome of any educational effort aimed at improving entrepreneurial leadership.

The findings described here provide only a single view of the way in which focussing on entrepreneurial learning can drive improvements in performance of entrepreneurs and, as a result, drive more diverse employment and economic growth. This case example offers a unique and valuable insight into the activities that work to improve the leadership development of entrepreneurs, but opens up more questions about transferability and scalability. Was the success seen in this programme inevitable due to a local culture of entrepreneurial learning? Or has the

Fig. 10.10 Logic model showing the journey from learning leaders to a wider culture of learning and business performance



culture come about as a result of the course? This requires a comparative study with other programmes which it is hoped this chapter will help to inspire.

Further questions about the transfer of entrepreneur(ial) learning have also been raised. Figure 10.10 is a logic model created to illustrate the pathway through which leadership learning can lead to a stronger economy. This pathway suggests that the first step towards successful economic growth as a result of entrepreneurs learning comes from passing learning on to others. The research to date on transfer of learning is limited in the realm of the entrepreneur. The assumption that improvements in one firm's performance as a result of learning force change in competitors has not yet been studied at the regional level, nor has the assumption that this leads to improvements across the board and, eventually, the adoption of a culture of learning across an entire region or sector.

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Paul D. Hannon is a Professor of Entrepreneurship and Director of the Institute for Entrepreneurial Leadership (IfEL) at Swansea University and Director of LEAD Wales, one of Europe's largest SME leadership development programmes. Paul has helped shape enterprise and entrepreneurship education, support and development in the UK and overseas during the past 35 years. He is a successful creator and innovator of local support initiatives for enterprise and entrepreneurship stimulation in the private and public sectors; he has won accolades for his innovative approaches to enterprise and entrepreneurship curricula design and delivery in higher education; and he is also an experienced entrepreneur with 10 years as the co-owner/director of a small growing firm in the food industry. Previously, Paul was Chief Executive at the UK's National Centre for Entrepreneurship in Education that supports long-term cultural change in UK universities and colleges. In 2016, Professor Paul Hannon won the Entrepreneurship Education Award, bestowed by the world-renowned Sten K. Johnson Centre for Entrepreneurship in Sweden, in recognition of his tireless contribution to the improvement of entrepreneurship education in Europe.

Chapter 11

From Student to Enterprising Researcher

Owen R. Bidder

Abstract In recent years, I have found myself coming into contact more and more with ‘enterprise education’. This relatively new discipline sets out to give students and graduates the capacity to generate ideas together with the skills and confidence to see those ideas through to fruition. After the shift in economic climate post-2008, many British students found it more difficult to find employment in their chosen fields and these efforts to develop students’ soft skills, those that perhaps are not developed directly by academic study alone, became more necessary. British universities now employ numerous methods and interventions, from business competitions to hosting public lectures from successful business leaders, to try to develop students’ ‘entrepreneurial spirit’. Pinning down accurately what that ‘entrepreneurial spirit’ entails is difficult. Of course, there are certain characteristics that many entrepreneurs share. They tend to be good problem-solvers, innovative, they take risks, and they can mobilise people and resources to make things happen. However, finding the blueprint for making an entrepreneur can be quite difficult. In addition, many students do not want to become entrepreneurs as they prefer to work in teams and join existing organisations. Can they be helped by enterprise education? People who are innovative within existing organisations can be referred to as intra-preneurial, and enterprise education aims to help them realise their potential too. In this case study, I recount my experiences with enterprise education indicating what helped me, explain how I found myself being more entrepreneurial than I had realised I could be, and how I ended up moving forward as an enterprising researcher in academia.

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Where It Began: Zoology Student

In 2005, I began studying zoology at Swansea University (then the University of Wales, Swansea). My method for choosing a university course was a little unorthodox. I had been reasonably good at biology in school, and so I looked through the Universities and Colleges Admissions Service in the UK (UCAS) Website searching for a course that might interest me. Reaching the end without success, I settled on zoology. Once I knew that the study of animals was a discipline of its own, the choice seemed quite logical for me, I had grown up on the beautiful Gower Peninsula in Wales, the UK's first designated Area of Outstanding Natural Beauty, so I was always outdoors or in close proximity to nature and had a great affinity for animals. I had considered other courses; I once took a tour around the steel works in Port Talbot in South Wales to see what it might be like to be a chemical engineer but, every time I thought about something else, I eventually settled back on zoology.

There is an important point to make here about the kind of student I was when I entered university. I had absolutely no interest in anything to do with finance, economics, or anything that could be considered relevant to the economy at all. I was somewhat idealistic and very naïve about the benefits of developing any sort of business acumen. When I started at the university, I was surrounded by others like me. We were there to protect endangered species from extinction, and we often took a dim view of businesses' commercial activities as often they led to environmental damage. This view was not uncommon amongst my peer group and many undergraduate biologists with whom I came into contact thought similarly. We were being taught about climate change, the loss of endangered species, and humanity's impact on the earth. Terms such as 'commercialisation', 'for profit', and 'exploitation' were toxic to us, and I do not think anyone on my course had ambitions to do anything other than work for an NGO or conduct academic research in the field. If anyone was to work in industry, they would probably try to become an ecological consultant and work hard mitigating the impacts of human development on vulnerable habitats and animals. As an undergraduate, I was more concerned with volunteering for litter picks or helping out with field research than I was with boosting my business acumen or employability skills.

Then, in 2008, there was a very different type of climate change, a change in economic climate. I graduated with a 2.1 Bachelor's degree in zoology at perhaps the worst time for youth employment prospects in decades. I applied to be a ranger at a local wildlife reserve and did not even get an interview. It turned out that I lacked any of the experience necessary to work in that environment. How was I to know that park rangers often sat at desks, met with managers and stakeholders, networked, or applied for grant funding? Looking back, I was a good student, but I was not equipped with the experiences necessary to land a job straight out of university. I was not at all enterprising. I had no tangible experience as evidence for my soft skills. I had worked in teams of students to prepare group presentations, which is not the same as contributing to a professional project. I realised that

employers wanted prerequisite experience, but I could not land a job that would give me the opportunity to obtain experience! It was a 'catch 22', and over the few months that I was unemployed, living at home back with my mother, I suffered from low self-esteem and I worried about my future prospects.

I decided to return to the university and study for a Master's degree in environmental biology in the hope that having a postgraduate degree might make me more competitive in the job market. I remember a turning point for me was a module in which we were required to write a grant application for a project of our own invention. It made me realise that everyone in this world needs to be able to sell things. Selling is an entrepreneurial skill in which you convince other people about the value of something. The things we sell are diverse: retail products, services, our skills and experiences on CV's, or, in this case, ideas for research and conservation. I started talking to people about my projects, trying to explain why they were important and why they should be interested, I was selling all the time! Before, I had usually described my work in terms of why it was important to me, but whilst writing that grant proposal I realised that it was better to describe it in terms of why it should be important to others. This is an important distinction, and I believe this change in attitude was the first step to becoming a more enterprising individual. I managed to gain top marks in my grant application assignment and went on to obtain an offer of a funded Ph.D. in biological sciences at the university.

Enterprise Education During the Ph.D. Years

My first experience with enterprise education came during a residential summer 'grad school', which was designed to develop entrepreneurial skills in students studying for a Ph.D. through the European Social Fund's Knowledge Economy Skills Scholarship. During the grad school, we were grouped with numerous other Ph.D. students drawn from universities all around Wales and asked to tackle business and social challenges. I was working in a team of social scientists, engineers, and sport scientists. Usually during undergraduate work, you are working only with other biologists, so this was the first time I had worked with students from other disciplines. I was interested in how we all approached the problem in different ways, and this made me realise how blinkered I had become in my thinking. The discussions we had during grad school were enlightening, and I think exposure to other disciplines was one of the things I had missed out on during my undergraduate studies. In addition, we were given a lot of information and resources detailing how universities commercialise research or how we might be able to fund a social enterprise if there was something we were passionate about and wanted to address. I remember at the time I was surprised at how useful some of my research skills might be in careers outside academia. Often, research students can be so focussed on their research topic that they have difficulty mapping their skills and experiences to other roles. Many research students go on to work in industry or the

public sector, so helping them to map their skills and experience to roles outside academia is important.

In the second year of my Ph.D. studies, Swansea University held a competition called ‘The £500 Challenge’. Backed by Welsh billionaire Sir Terry Matthews, the competition aimed to develop students’ entrepreneurial skills by giving them £500 of seed-funding to develop a business idea. I was initially told about the competition by Dr. Geoff Proffitt of the biosciences department. He gave me much support in formulating ideas for a business. We brainstormed together, and it was in these early discussions that we struck upon the idea to make a smartphone app to help the public identify wildlife. Spending time with Dr. Proffitt at this stage was immensely helpful as he brought a wealth of experience to bear on the project. Unfortunately, I had no experience of writing code or actually designing the software, but I had a friend in the computer science department, Andrew Ryan, who did. After some frantic emails back and forth, he agreed to be involved and all of a sudden I had a team. I would write the content for the app, and he would design and program it. We were required to pitch for the funding to Sir Terry Matthews in front of an audience. We had to make sure that our product could feasibly be finished in the six-week time period in which the competition would run.

We decided that we would focus initially on butterfly species, because there are only fifty-nine native species in the UK. This also gave us a sustainable business model, as once the butterfly app was finished we could move on to other groups of animals and continue to grow the business. Our pitch went well, we were awarded seed-funding, and we set to work on making the app. Development went well, and luckily, our initial outgoings were rather small as all we needed to do was register on the online app stores before we could sell our app online. I ended up learning quite a great deal about programming and even more about butterflies whilst I was writing up my database for the app, so the whole process actually had additional skills development benefits that I had not anticipated.

Finishing the app took about three weeks in total, and we set to promoting our product online in social media. Unfortunately, one of the lessons we learned was that a lot of ‘likes’ from friends and family do not necessarily translate into sales and that we would need to pursue other means of advertising the app if we were going to make any money. During the development of the app, we developed a citizen science aspect by including a function that enabled users to upload their sighting data to a central database, thus producing records of species distributions.

This caught the attention of the BBC, who invited us to talk on the radio about our product. The exposure was immensely helpful and gave us a significant bump in sales. This in turn shot us up the charts for the app stores we were hosted on, making our product more visible to users when they were searching the store, which in turn led to further sales. In all, by the time the competition was finished we had managed to sell over 600 copies of our app. In order to qualify for an award for entrepreneurship from the university, I was required to write up a detailed business plan and Andrew and I presented this to a panel of senior staff at the university to reflect on our experience. For the first time, we were required to think about long-term strategies for the business, something I had never had to do during my

studies in zoology! This was all useful experience, and I learned about the importance of mapping out a business model in order to sell our app to investors and make predictions for future sales and growth.

Andrew and I began to enjoy attending business fairs and events representing the business, and we realised we were quite good at discussing the app with other business owners. We found that our personal investment in the business led to us being passionate and excited to share our vision. This passion was communicated during the 'Lion's Lair', a further intercollegiate competition we decided to enter in which we pitched the business to a panel of business leaders from South Wales. We won that competition, but I had no time to stay for the prize presentation as I travelled immediately after our pitch to London to take part in the 'Falling Walls Lab', presenting my research to an international interdisciplinary audience. As I had become busier with my app business, I started to transfer that same passion and drive back into my Ph.D. studies. I realised that I was constantly being offered opportunities to speak at events or get involved with new projects. I took my networking experience from the business events I had attended and applied that to my research efforts, organising a guest seminar at a university in Hanover, Germany. This is when I felt something spark and I steadily became an enterprising researcher who was highly productive.

The business went further when we utilised the assistance available at the university to register ourselves at Companies House. As a legitimate business, we discovered that we qualified for additional enterprise assistance from SEACAMS, a new development to integrate research and business opportunities in the marine sector in Wales. Working through these steps gave me an insight into how many grants were available to people wishing to grow their businesses in South Wales. With SEACAMS, we started development on a new product to help the public identify fish. We found that this close association between the university and external enterprise organisations was immensely helpful. This is an ideal incubation environment for those graduates wishing to develop their own business.

I was also looking at my research through a new lens. I saw that research projects that addressed the issues facing society were likely to have greater impact and in turn attracted better funding. I began thinking about ideas for my own research once I graduated with my Ph.D. and how it might be relevant to others. Drawing on my experience from the grad school and from my business activities, I thought about a 'market' for my research: whose problem would I aim to fix, how would I do it in a cost-effective way, and how would I make sure that I disseminated my results effectively to achieve maximum impact? These were all questions I formulated as a result of my experiences with enterprise education.

Enterprise Educator at Cardiff

I enjoyed the enterprise education activities at Swansea University immensely, and after building so much experience during my Ph.D. years, I decided to pass those experiences on to others. I was appointed Enterprise Project Officer at Cardiff University, where I was responsible for coordinating the postgraduate enterprise education programme. I was able to draw upon my own experiences in research to develop the students' entrepreneurial attributes and skills. For instance, I developed a one-day course entitled *The Enterprising Researcher*, in which I discussed the Research Excellence Framework in the UK and how research impact is evaluated. I asked students to prepare statements on their research topic, detailing who would benefit from the results of their work. Initially, some of the students researching fundamental or basic research questions found it difficult to imagine the impact outside of their own fields. However, after group discussions, we began to see how even the more abstract research questions were applicable to an aspect of society.

I also coordinated the *iSolve* programme which is a long-running technology transfer project at Cardiff University. Postgraduate participants work in interdisciplinary teams to develop commercialisation strategies for real university research project outputs. The students work closely with the university research staff to identify opportunities for commercialisation, whilst also receiving training in technology transfer and intellectual property topics. During this project, I drew upon my own experiences and my familiarity with how academic research is conducted from my time as a Ph.D. researcher. I held weekly team meetings to guide the students and offer feedback on their ideas. One of the myths that we tried to dispel was that commercialisation is purely in order to gain further income. Often, commercialisation of a research output means that it will go on to be used worldwide and have the chance to impact positively on the lives of many people. Unfortunately, members of the public do not often read the research literature, so these alternative commercial outputs are an important way to make sure that the benefits of research are transferred on to the greater society. In addition, commercialisation can open up alternative funding streams that enable researchers to fund further important work. Thus, technology transfer is important work which should be appreciated and understood by all enterprising researchers.

Continuing in Academia

Whilst in contact with enterprise education, I developed an appreciation for how many of the skills relevant to entrepreneurship could also make me a better researcher. I learned to appreciate businesses as important potential partners in research and as potential future stakeholders. The skills that make successful entrepreneurs, such as the ability to evaluate risk, form professional networks, recognise opportunities, and persevere when faced with setbacks, are also the skills

needed to be a successful researcher. I reflect now on my attitudes going into university, and I see a naiveté towards enterprise. Researchers can work with industrial partners to get things done, to develop medicines, new techniques, and equipment, or to fund important conservation initiatives. Had I realised that business acumen was useful in science, I probably would have sought out enterprise education much sooner.

In fact, this is what I encourage my students to do now. In my experience, effective enterprise education benefits from a hands-on ‘learning through doing’ approach. I believe I developed my enterprising skills through actually running my own business with the safety net of a limited budget and assistance from the university. It appears to me that entrepreneurship is not something you can develop through PowerPoint slides.

Following my time at Cardiff, I developed a research proposal on a topic in my field and successfully obtained research funding from the Alexander von Humboldt Foundation to work as a Research Fellow in Germany. I have no doubt that my experience with enterprise education contributed to that. In the proposal, I focussed on the problems facing society and how my work was relevant and timely. I mapped the impact of my work to society’s needs and used my networking experience to build an international network of collaborators to support my efforts. In short, I was able to utilise an entrepreneurial mindset to further work that I am passionate about. I believe my experience shows why enterprise skills are useful even to those that do not intend to start their own businesses, and demonstrates the value of being an enterprising researcher.

Author Biography

Owen Bidder obtained a Ph.D in Biological Sciences from Swansea University in 2014. His research has focused primarily on developing methods for investigating how animals utilise their environment to obtain resources and avoid predation. He founded his own business which develops mobile applications that allow members of the public to identify wildlife whilst simultaneously uploading species distribution data to a central database utilised for research. He also uses his skills in animal tracking and logging technologies to provide consultancy on television wildlife documentaries and productions.

Part III
The University Perspective

Chapter 12

The Impact of a Research-led Entrepreneurial University on a Regional Economy: Swansea University's Science and Innovation Campus

Iwan Davies

Abstract Knowledge is the most powerful single element in society. Following the development in recent years of a hyper-competitive global-driven economy, it has become evident that the core competency of a nation is its capacity for continuous innovation. This chapter considers the Swansea University Science and Innovation Campus as a leading project in Wales supporting an Entrepreneurial Learning City Region. It is an example of a research-intensive university with world-class credentials promoting a research and teaching infrastructure to underpin the skills and expertise of a regional workforce. This is part of a policy promoted by the Welsh Government and the European Commission to enable Wales to compete successfully in global markets. This project is one of the leading Knowledge Economy Projects in the UK and is the best example in Wales of university—industry—government partnership—the triple helix model for innovation.

Introduction

The role of Universities in promoting significant change in society is a reflection over the years of their resilience as institutions. Indeed, of the eighty-five institutions in existence since 1522, including the Catholic Church and Britain's Parliament, among them are seventy universities. Part of this resilience has been the ability of universities to adapt from what was in Bologna in 1088 “Universitas Magistorum et Scholarium”, namely a community of teachers and students, to that we now variously characterise as being particular attributes of universities. As such, the attributes of universities can range from being, for example, traditional, comprehensive or research driven, or teaching, or international, or modern, or innovative, or green, or entrepreneurial, or community to even the global multiversity (Collini 2012).

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From the UK perspective by the beginning of the twentieth century, at least three different categories of Universities had emerged (Collini 2012: 28): first, the Oxbridge residential model; second, the Scottish and London Metropolitan orientated institution; and third, the civic model which had local orientation meeting regional needs and wider aspirations. The essential characteristic of Swansea University (SU) as a civic university was promoted early on by industrial leaders in South West Wales who in 1918 presented evidence to the Haldane Commission, set up by the Asquith Government to consider university education in Wales. It was within this context that Swansea University was established in 1920 as a civic university.

In his inaugural lecture on the occasion of the establishment of SU, the first principal, Franklin Sibly, invited local metallurgical heavy industries “to give special consideration to the difficulties of a University teacher in a technological subject; the difficulties of keeping up to date both in essential theory and vital practice”. He went on to refer to the importance of research-led teaching: “[I]t should be a special function of the University teacher to give an insight into methods of research and to instil the passion for discovery ...” Perhaps more significantly, Sibly commented upon the fact that whilst universities have always engaged in knowledge dissemination, this was not predicated upon economic value. He was giving expression to the views of the industrial founders of the University who championed the role of the university in promoting regional competitive advantage through commercialising scientific research. This was colourfully expressed by Sibly, “Poets, Philosophers and Preachers who can express their ideals, their achievements, in a language intelligible to a great public, who can show them in obvious relationship to human affairs, human aspiration, are recognised as humanists. Not so the scientific worker ... his work ... is belittled mainly on the score of its commercial application ...” (University College of Swansea, Inaugural Address, 15 November 1920: 5). In a real sense and from its inception, a major characteristic of SU has been knowledge valorisation, that is, turning knowledge into value and working alongside industry.

The development of SU’s new Science and Innovation Campus (referred to as the Bay Campus) must be seen within the historical context of this University and its civic tradition. Phase I of this £450 m development was completed in September 2015, consisting of an extensive engineering quarter comprising of four new engineering buildings that provide world-class facilities for industry and supporting impact research, a new business school, a great hall with state of the art learning and teaching facilities, an auditorium capable of supporting conferences as well as a concert programme, a library and a striking new student residences courtyard development supported by retail provision for the Campus. It is one of the leading knowledge economy projects in the UK and is one of the best examples of a university–industry–government partnership—the triple helix model for innovation.

In this chapter, we shall examine the economic context in which the strategic thinking emerged underpinning the Bay Campus development; second, the enabling

element for the development arising out of the establishment of a creative alliance between the University, private industry and government; and lastly and more generally, the strategic role that a research-intensive university can play in developing a regional knowledge economy and promote economic growth.

The Economic Context

The Swansea Bay Regional Economy

In a research report prepared by the National Endowment for Science, Technology and the Arts (NESTA) in 2008, Swansea was described as a “lagging region” in innovation terms and on standard innovation measures within the bottom decile of the city regions in the UK. The productivity gap and the skills deficit in the region has been the object of a number of reports and this despite the provision of European Regional Development Assistance. Indeed, in *Cities Outlook 2011*, published by the Centres for Cities, Swansea was identified as one of the five vulnerable cities in an economic sense due to its over-reliance on public sector employment. The *No City Left Behind* report prepared by the Work Foundation in July 2010 noted: “Growth over the next ten years will be driven by knowledge-based industries and jobs will increasingly demand high level skills. This means Universities and the further education sector will play a crucial role in the recovery” (p. 12). In particular, this report highlighted that low carbon industries and high tech and high value added networked services will be two of the sectors crucial for economic growth and it identified universities as “a valuable source of knowledge and innovation which can benefit start-ups and existing local businesses, whilst close linkages with businesses are also very valuable to Universities” (p. 21).

In a comprehensive ESRC-supported research programme which further supported this view by examining the impact of Higher Education Institution (HEI) on Regional Economies in the UK, the following points were highlighted:

1. there is evidence that firms locate their R&D facilities close to world-class-related university departments and that innovative firms located nearer to university departments are more likely to engage with higher education institutions;
2. firms are six times more likely to produce innovative products if they collaborate with an HEI;
3. firms are five times more likely to produce innovative processes if they collaborate with an HEI;
4. collaboration between universities and firms has a significant positive effect on organisational innovation;

5. Wales has the lowest levels of knowledge interaction in general, but when Welsh firms use universities and other types of collaborative partner, they seem to value them more, even if their impact is more marginal; and
6. HEIs are still considered poor collaborative partners for firms and poor providers of information. However, when collaboration occurs, the university has a significant influence on the firm's innovative performance.

It was noted that Wales had been less successful in the establishment of networks and university commercialisation income and activity were less well distributed. Significantly, the work showed that Wales ranked lowest in the UK in terms of HEIs sourcing their commercialisation income from within the region, had the lowest proportion of firms engaged in knowledge-based activities and had relatively low levels of investment in research and innovation which restricted economic growth.

Responding to the Challenge

By building upon its historic strengths in science and technology and the fact that from its foundation SU enjoyed close collaboration with industry, SU had a strong basis for developing its strategic thinking. To this end, the university adopted a holistic approach to knowledge transfer activities by focusing upon three broad academic areas: engineering, ICT and life science. These industrial sectors represent 75% of total industrial R&D and thereby offered the greatest potential for supporting the development of high-technology companies. As such, they represent the "market standard" in developing a modern knowledge economy and were an approach which found favour by the Welsh devolved Government.

The Swansea University Knowledge Economy Strategy was purposely developed to promote research excellence in the three major disciplines identified (Fig. 12.1).

The approach revolved around the intersection of multiple networks which could provide the well spring for technology clusters. However, the dilemma for the University was that by 2008 it had reached a point where there was no more physical space on its Singleton Campus large enough to provide future knowledge transfer. The university's stunning location at Singleton "by a beach, in a park" made a wholesale move of the university to a new site unattractive and the University Council opted for a second campus to relieve the pressure on Singleton and to achieve a step change in the university's capacity and commitment as a powerhouse for the regional economy. The challenge then became one of delivering the physical infrastructure and also the funding for a new Science and Innovation Campus as a necessary accompaniment for supporting the university's strategy.

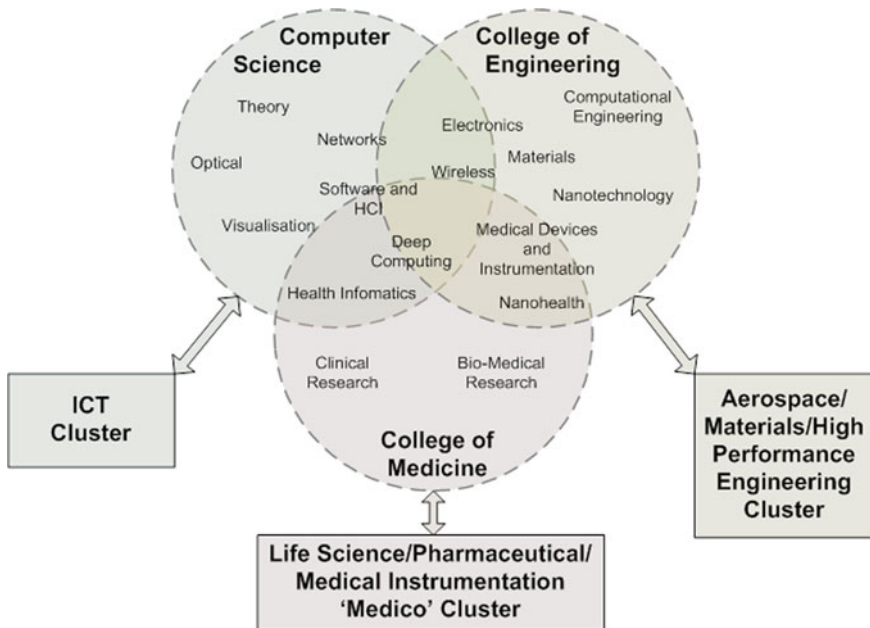


Fig. 12.1 The clash between these disciplines was also regarded as a source for innovation and growth

The Establishment of a Creative Alliance

Knowledge is the most powerful single element in our culture, and it is no coincidence that one of the first strategic acts of the Welsh Assembly Government in post-devolution Wales was to launch its vision for Wales as a “Learning Country”. Indeed, the core competency of a nation in what is now a hyper-competitive global knowledge-driven economy is its capacity for continuous innovation which in order to flourish must be supported by world-class education, infrastructure and an enabling policy development. What this means in the context of Wales is that the emphasis must now be on a learning economy which thrives because it uses the skills and expertise of the workforce and management to enable it to compete successfully in global markets.

From the perspective of local communities in Wales, the sense of vulnerability to the forces of globalisation is significant—communities have limited resources to cope with the impact of globalisation in what has now become a “borderless world”. This is very much the position in Swansea Bay following BP’s, the multinational oil giant, decision to withdraw from a region where they had been established since 1919. Nevertheless, as part of its planning for a strategic withdrawal, what BP sought was the galvanisation of the resources of the community to meet the more acute challenges of globalisation arising out of the withdrawal of the

Company. The key output for BP was to strengthen the capability of the region to innovate, that is, the indigenous capability to develop new products, services and processes and boosting the capacity of local firms to adapt to new technologies and market conditions.

It was within this context that BP worked with SU to create its new Science and Innovation Campus. In so doing, BP was continuing a legacy of around eighty years of working with the university, both as BP and as its predecessor, the Anglo Persian Oil Company. The Company's contribution to the built environment on the original Singleton Campus can still be seen as it was the principal benefactor for the 1937 library built on that Campus. It was also over the years a major sponsor of research conducted by the Engineering Department at the university and provided employment at its oil refineries to many of the university's graduates.

On the basis of this historical legacy, it was not surprising that the role of SU as a research-intensive university was considered by BP as critical to building up the innovation capacity of the Swansea Bay region. From the outset, the approach was to treat the University as the most valuable asset the region had for promoting the knowledge economy—a source of highly educated people and ideas—perceived as the engine of innovation. The prospect of a Science and Innovation Campus was seen as constituting a fitting legacy for BP as providing the infrastructure for SU to fulfil its role as a local agent of regional regeneration. BP played a key role in the organisation and planning for the new Campus.

In the first instance, a “think and do” network was established, consisting of BP, SU, Neath Port Talbot and the City and County of Swansea local authorities and also the Welsh Government. The embedded partnership approach, which suggested the development and brought it to a successful conclusion, is a blueprint as it provides an exemplar of the dynamic of a “triple helix” consisting of private enterprise and the university working with the public sector leveraging new economic and social value. The fundamental driver behind this partnership was the recognition that building global competitive advantage for Wales is not about building new law courts or government offices, but rather building new research laboratories, classrooms and innovation centres where big ideas can be hatched and then translated into reality.

At the same time, the careful planning behind the Science and Innovation Campus was developed in connection with industry needs which, following close discussion, were identified as follows: first, the need for co-location of industry and academics, not simply on the same site, but in the same building; second, access to specialist equipment; third, the ability to access graduates and postgraduates; and fourth, the ability to input into the FE/HE curriculum.

Inherent in this was the recognition of the artificial barriers being created between industry and university academics implied by the science park model. As illustrated in Fig. 12.2, this has proven to hinder and prevent collaboration due to the geographical boundaries created by separating the industry R&D from the university research.

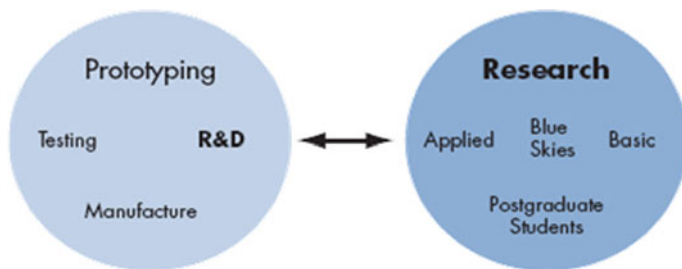


Fig. 12.2 Traditional science park: university structure

The Science and Innovation Campus Model removes the geographical barriers to collaboration, co-locating industry and academics not only on the same site but in the same buildings (Fig. 12.3).

The approach was supported by the City and County of Swansea which developed a 2020 vision of the city as a Wales leading centre for the knowledge economy. Simultaneously, the spatial plans for the South West Wales region specifically acknowledged that SU would be developing an ambitious knowledge economy strategy designed to support the creation of high-technology clusters in the areas of ICT, life sciences and advanced manufacturing and engineering. More recently, the successful working through of this strategy has been presented as evidence of the economic coherence of Swansea Bay as a developing city region.

Implementation of the new strategy enabled SU, during planning for the new Science and Innovation Campus, to transform itself by increasing the quality and scale of its research with a particular focus on science, technology, engineering, mathematics and medicine. In particular, the highly rated College of Engineering was tasked to double in size on condition that it would cherish and maintain the international quality of its provision. By 2012, this had been achieved, with the college now consisting of over 290 staff, including 105 academic and 103 research staff. In tandem, SU, in the Research Assessment Exercise (RAE) 2008, delivered the largest growth in world-leading and internationally excellent research in the UK. It has maintained this trajectory in the Research Excellence Framework (REF) 2014 and has now more than doubled its research income.

An essential accompaniment to this strategic approach was the intensification of SU's engagement with the ten biggest R&D companies in the UK as well as relevant SMEs. Significantly, based on the strength of SU's business links, the European Investment Bank concluded that the University's Science and Innovation Campus was one of the best projects of its type they had appraised anywhere in western Europe. There is no doubt that such engagement was facilitated by the financial support provided to SU from the Welsh Government and also the European Regional Development Fund. SU has effectively become a research arm for industry pioneering a physical co-location model merging academia, industry, research and students at one location.

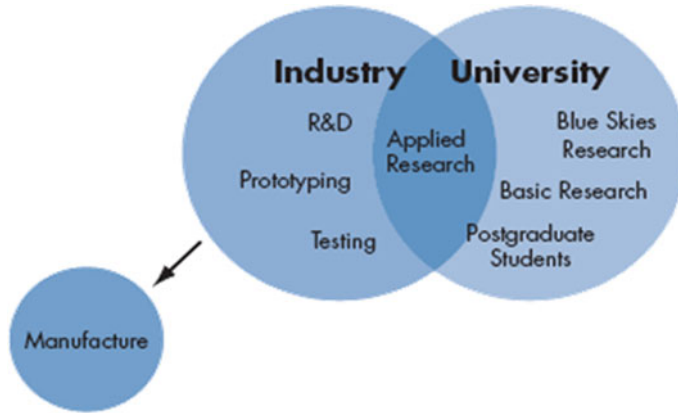


Fig. 12.3 An integrated model

Through building on the increasing scale of its internationally recognised excellent applied research, SU was able to deepen its long-term collaboration with multinational companies that had the confidence to engage with it in problem-based innovation particularly in the translational disciplines around the digital economy, life sciences and advanced engineering and manufacturing. This approach also has the advantage of economic impact because translational disciplines establish a culture of enterprise creation, with engineering perhaps being one of the best examples of this phenomenon. Involvement with enterprises is an essential element of high-impact research in engineering where engineers turn new ideas into practical solutions and there is evidence worldwide that high-quality engineering faculties and schools are catalysts for new enterprises.

Business represents another translational discipline which has a key role to play in enterprise creation. Building enterprises is an important element of SU's business school curriculum where skills including design, product development, marketing and finance are essential elements. For this reason, the focus of the new Science and Innovation Campus is upon combining the forces of engineering and business as part of building and creating a culture of enterprise creation. Such a development was not surprising to a University like Swansea founded as it was on partnership with entrepreneurs who occupied the industrial landscape of South Wales in the early part of the last century.

The model for delivery of the knowledge economy outputs for the new Campus was established early on in the University's planning process. Such an approach was essential in order to demonstrate the success of the model and set strategic direction. The Committee to Assess the Capacity of the U.S. Engineering Research Enterprise (2005) (chaired by James Duderstadt) was particularly influential (4). The key recommendation was established of Innovation Institutes on the campuses of research-intensive universities conducting engineering research and innovation with direct linkages and responsibilities to industries on a larger scale than for a typical

university. It was considered that such linkages provided continual guidance to use inspired research, thereby driving a process of valorisation of knowledge and, where appropriate, its commercialisation. The institutes were identified as being especially relevant to complex and large-scale and long-lived challenges such as energy.

A research institute model reflecting the above has been created and is already operational at SU. The underlying rationale is to move research further down the innovation pathway so as to create opportunities to exploit and commercialise that research, deriving benefit to SU and its industrial partners. The first business venture of the new Campus with Rolls Royce utilises this model in the context of advanced materials. The research institute contains the existing research activity (in the case of Rolls Royce, this is a University Technology Centre) and a spin-out company which provides commercial services based on the research output and takes responsibility for facilities management and service provision. The profits from the commercial activity are channelled back into the institute to increase overall research capabilities. A fundamental feature of the model is that the research and commercial activities are co-located; the academic staff and commercial employees share the same physical space, facilities and equipment. This encourages and supports a two-way flow of information and expertise. Academic input adds value to the commercial services and differentiates them in the marketplace, whilst commercial overview of research findings provides early and valuable input on market potential and customer requirements.

Another example of the model is the Innovation and Knowledge Centre led by SU and the multinational, India-based company, Tata, to develop functional coated steel and glass products to incorporate into existing and new buildings enabling walls and roofs to generate, store and release energy. The Innovation and Knowledge Centre combines academic and industrial expertise and includes partnerships with a number of other universities as well as other multinationals including BASF and NSG Pilkington. Its open innovation approach relies on engineering, scientists and industrialists working together under one roof to develop and test technology. The project is backed by funding from EPSRC as well as Innovate UK.

Directly arising from the building of the new Campus, working with BP and other industrial sponsors SU has developed an Energy Safety Research Institute at the new Campus. This is focused on long-term strengths of the university in petroleum and chemical processing—particularly in terms of computational science (rock fracture modelling and “fracking”) and corrosion—supplemented by more recent capabilities in marine energy, nuclear, tidal, advanced water treatment, materials, crisis management and more usual areas such as photo-voltaic and nanotechnology. By definition, the Energy Safety Research Institute has an international focus and is a constituent member of the Global Energy Safety Institute founded in Houston, Texas, in 2011, a sister Institute of the Energy and Environmental Systems Institute at Rice University in Houston and an associate of the National Corrosion Research Centre at Texas A&M (supported by BP in North America). This development leveraged significant support from the UK Government as part of a match-funding programme of major industrial research

sponsorship of universities announced by the UK Government in the March 2012 Budget. It is also a working through of the original vision that BP had as part of its exit strategy for the Swansea Bay region—leaving a legacy to enable SU to fulfil its role as a globally engaged university with international credentials in research promoting, thereby, further regional economic regeneration.

The Science and Innovation Campus is a regional economic regenerative initiative that links the key drivers of economic growth in a twenty-first-century knowledge economy: research, skills development and commercialisation, in a novel way, and, in particular, a way that is underpinned by research-based relationships between the higher education sector and major research-led international businesses. There are a growing number of initiatives, for example Barcelona 22, the advanced manufacturing research centre in Sheffield that indicate that the key to delivering the economic impact benefit of this approach is the physical intermingling of each of these elements.

The economic impact analysis performed on the supply chain underpinned by the Science and Innovation Campus shows the 10-year cumulative impact to be around £3 bn and nearly 11,000 new jobs with the five key contributors to the impact being: multinational enterprise (“MNE”) business initiatives; spin-out companies; cluster formation; and the growth in existing SMEs and Intellectual Property (“IP”) licensing. The analysis in the economic impact study shows that overall success in terms of economic impact depends on the efficient functioning of all elements of the economic development supply chain. This, in turn and more generally, brings into focus the characteristics necessary to support the anchor role of SU in promoting economic growth and developing the knowledge economy within Wales, which we will now consider.

Enabling and Output Factors that Influence a University’s Impact on the Knowledge Economy Ecosystem

Enabling Factor: Research Scale

Research scale is vital for the development of the knowledge economy as discussed in the Welsh Government’s strategies—Innovation Wales (2014) (5) and Science for Wales (2012) (6). Improving the scale, size, quality and level of collaboration with other institutions and industry (worldwide) is critical to develop and deliver sustained improvements in economic growth. University research boosts economic growth with investment in R&D typically having a rate of return of between 20 and 50% (7). Universities UK further estimate that even with a minimum rate of return of 20%, a 5% increase (£450 m) in the science and research budget could permanently raise private sector output by at least £90 million—estimated to be worth £1.8 billion to the economy in the long term (8). In contradistinction, Haskel and

Wallis suggest that a £1 billion cut in research council funding specifically would lead to a loss of £10 billion in GDP (Haskel and Wallis 2010).

As set out by Universities UK in 2015, the value and importance of research scale to improved economic performance is quite clear, and over the last ten years, SU has taken a radical and transformational approach to begin to develop this critical mass and position itself as an “anchor” institution for the region and Wales. The University’s income from research grants and contracts has increased by 227% over the last ten years to £48.2 million in 2014–2015 placing Swansea 28th in the UK for the scale of its research volume.

The building of the £450 million Bay Campus designed to attract and co-locate industry to enhance the scale and quality of research conducted at Swansea is a perfect good example of developing critical mass and anchoring knowledge economy activities within the region.

Enabling Factor: Research Quality

The four UK higher education funding bodies allocate about £2 billion per year in research funding to UK universities. To distribute funds selectively on the basis of quality, the funding bodies assess universities’ research through a periodic exercise, the most recent being the Research Excellence Framework (REF) 2014. The REF 2014 informs the selective allocation of quality research (QR) funding to HEIs, provides benchmarking information and provides accountability for public investment in research and demonstrates its benefits. Through the REF, the UK funding bodies aim to develop and sustain a dynamic and internationally competitive research sector that makes a major contribution to economic prosperity, national well-being and the expansion and dissemination of knowledge.

The results of the Research Excellence Framework (REF) 2014 saw SU achieve its ambition to be a top-30 research British University. It soared up the league table to 26th in the UK from 52nd in 2008: the largest jump up the rankings of any research-intensive university in the UK. Key achievements were as follows:

- Grade point average increased by 27% (from 2.43 in 2008 to 3.09 in 2014);
- The proportion of 4* (that is world leading) and 3* research increased by 22% on 2008;
- 80% of research rated 4* or 3* (compared to 76% for the UK and 47.4% for the University in 2008); and
- 90% of impact submission was rated 4* or 3*, placing the University 22nd in the UK.

SU submitted the research work of nearly 400 staff, including 74 early career researchers, across 18 subject areas for assessment in the REF 2014. The evidence provided included more than 1400 research papers, book chapters, articles, books

and other published outputs from 63 research groups, as well as more than 50 case studies demonstrating the breadth and impact of the university's research. These show that research carried out in SU is also having significant economic impact.

Table 12.1 below shows the list of UK universities that are in the upper quartile across these three key indicators of research scale, quality and impact. It should be noted that a value is only shown in the three columns where the result is above the UK upper quartile thresholds; these are column 1: research income in excess of £38.3 million, column 2: 79.13% of overall output in REF 2014 judged to be world-class or internationally excellent, and column 4: 88.36% of research impact in REF 2014 that is judged as world-class or internationally excellent.

Enabling Factor: STEM (m) Focus¹

The importance of science, technology, engineering, mathematics (STEM) and medicine [STEM (m)] subjects and their impact on economic growth are supported by an extensive evidence base. The UK Government has noted that STEM (m) sectors enjoy higher than average productivity, and 65% of UK exports are from high-tech firms. High-level STEM (m) skills (10) support advanced research and innovation, so contributing to economic growth with a disproportionately high contribution to gross value added (“GVA”) (the measure of the value of goods and services produced in a region) and to the UK's international economic competitiveness. Several key growth sectors for the UK are STEM-based, including some of those identified in the plan for growth (HM Treasury and BIS, 2010), namely advanced manufacturing, low-carbon industries, space and life sciences. These sectors require people with appropriate STEM and management skills to maximise their economic potential. Advanced manufacturing, for example, is the third largest sector in the UK in terms of GDP, as a knowledge-intensive sector with world-leading innovation; it requires a supply of suitably skilled people.

At the same time, the Welsh Government in Innovation Wales, 2014, advocates a smart specialisation approach, building on existing strengths and capabilities, “where strong economic opportunities exist, and where there is potential to combine our assets across a range of industrial and research sectors” (p. 6). Key performance indicators (KPIs) for the number of STEM (m) staff and students have been used to measure the institutional profile—again a position in the UK upper quartile is seen as enhanced activity. This is significant from a Welsh Higher Education perspective as illustrated in Table 12.2.

¹UKCES uses a broad definition of STEM subject areas which includes the following subject groups: medicine and dentistry, veterinary sciences, subjects allied to medicine (excluding nursing), biological sciences (including psychology and other biological sciences), physical sciences (including chemistry, physics, archaeological and forensic sciences, physical geography and other physical sciences), technologies, engineering, mathematical sciences and computer sciences.

Table 12.1 Universities in the UK upper quartile

Institution	Total research income (£m)	2014 4*/3*—overall (%)	4*/3*—impact (%)
Oxford	600.62	87.2	91.6
Cambridge	450.65	87.3	91.8
Imperial	427.61	90.6	97.1
University College London	427.50	82.1	92.4
Manchester	262.42	82.6	91.9
Edinburgh	247.39	82.5	90.9
King's College London	210.78	85.2	94.1
Glasgow	172.98	81.1	90.4
Sheffield	158.39	85.5	94.9
Bristol	155.64	83.4	92.5
Leeds	152.14	82.8	93.4
Birmingham	126.40	81.4	
Southampton	124.19	84.3	89.2
Newcastle-upon-Tyne	122.62	79.1	
Nottingham	119.37	80.2	89.3
Cardiff	107.78	87.4	96.2
Liverpool	101.83	80.7	90.2
Warwick	100.81	86.5	88.9
Queen Mary London	93.16	86.0	90.0
Dundee	82.37		
The Queen's Belfast	72.50		
Exeter	69.76	81.5	
Strathclyde	65.47		
Aberdeen	63.32		
Durham	62.10	83.1	90.7
York	61.53	83.3	90.0
Leicester	59.57		
Swansea	48.15	80.2	90.3
Surrey	42.30		
Loughborough	41.51		
St Andrews	40.47	82.2	91.2
East Anglia	39.93	82.7	89.3
Aston			91.5
Bath		86.9	96.1
Bradford			88.4
Brighton			91.6
Heriot-Watt		82.0	93.9
Lancaster		82.3	92.8
London School of Economics		87.3	90.7
Royal Holloway		80.9	
St George's Hospital Medical School			90.0

Table 12.2 Number of staff and students engaged in STEM (m) activity

HEI	Total	UK upper quartile performance	Enhanced (above UQ)	UK median performance
<i>Staff</i>				
Aberystwyth	280	591		215
Bangor	243			
Cardiff	1391		Enhanced	
CardiffM	42			
Glyndwr	67			
Swansea	742		Enhanced	
UoWTSD	53			
UoSW	216			
<i>Students</i>				
Aberystwyth	2825	6185		3552
Bangor	3715			
Cardiff	9771		Enhanced	
CardiffM	3028			
Glyndwr	1449			
Swansea	6242		Enhanced	
UoWTSD	1228			
UoSW	6735		Enhanced	

Enabling Factor: Global Reach

As noted in the Sainsbury Report (2007: 11), “international collaboration is important if the UK is to stay at the leading edge of world science and innovation and benefit from the 90% of the world’s scientific output that is produced elsewhere”. As with other types of institutions, universities are increasingly operating in a globally competitive marketplace, both in terms of student recruitment and attraction of academic staff. This has led to a growth in international partnerships and collaboration and has also had a knock-on impact on staff who are likely to be required to be more internationally mobile if involved in research projects or teaching programmes which could include exchanges or periods teaching overseas. Many universities now have a clearly articulated international strategy which aims to explicitly acknowledge this trend and capitalise on the benefits of these linkages for student recruitment, research and teaching.

A globally connected university acts as a “window” to the region and builds and enhances the image and reputation of the region to the wider world. This can benefit the development of the region in a number of ways: connecting people from all over the world into the region which can act as a vehicle for future cooperation; attracting researchers from around the world who will contribute to the

development of new technologies which may result in new, innovative spin-out firms being established; and acting as a lever for international investment as firms grow around areas of international specialism and expertise.

Enabling Factor: Collaborative Research

Knowledge ecosystems are built on a foundation of good ideas that link research and business opportunities. By creating and reinforcing relationships across disciplines in a regional economy, dynamic professional networks feed the process of idea generation and ultimately connect back to market opportunities in the form of new and viable innovative products.

In terms of research, science and technology, policy at both European and national levels is increasingly emphasising the importance of collaborative research between universities and the public and private sectors. The collaborative research income key performance indicator (“KPI”) taken from the Higher Education Business and Community Interaction Survey (HE-BCI) has been used to measure output activity in this area. Thus, in the context of Wales, Table 12.3 shows the trend.

Universities with an enhanced role in collaborative activity help businesses grow and prosper through: linking them to sector experts and international supply chains; helping them to access innovation and research funding such as KTPs; providing access to excellent students for recruitment and placement opportunities; direction setting and professional development programmes; commercialisation and internationalisation; providing prototype design and testing facilities; and providing support networks.

The importance of place in collaboration should not be underestimated because where people and organisations benefit from mutual proximity, the clustering of resources and industries in specific locations can provide a conducive—and, in some cases, essential—context for success. The sharing of essential research infrastructure, laboratories and equipment is critical, and this is often achieved either through a science park model or through the full co-location of academics working alongside industry in the same buildings, offices and laboratories.

A common issue in economic development is the disconnect between knowledge creation in universities and firms and users, termed as the “valley of death” although many now see the potential points of disconnect as multiple when innovation is viewed as an iterative process (12). “Anchor universities” create the infrastructure and environment to address the points of disconnect and thus maximise the opportunities for commercialisation within the region. In this context, it is important to measure commercialisation potential.

Technology readiness levels (TRLs) are a technology management tool that provides a measurement to assess the maturity of evolving technology. TRLs range from 1 to 9. TRL 1 is basic research, TRL 2 is applied research, TRLs 3 and 4 correspond to a demonstrator in the laboratory, TRLs 6 and 7 correspond to a

Table 12.3 Collaborative research income in Welsh universities

HEI	Total	UK upper quartile performance	Enhanced (above UQ)	UK median performance
Aberystwyth	8477	9034		1912
Bangor	7895			
Cardiff	20,870		Enhanced	
Cardiff Metropolitan	1403			
Glyndwr	1318			
Swansea	40,645		Enhanced	
University of Wales Trinity St. Davids	166			
University of South Wales	2361			

prototype, and TRL 9 is a technology ready to be released on the market. The UK Government has introduced Technology Innovation Centres (TICs) to bridge the gap between universities and industry, in the TRL spectrum (see Fig. 12.4).

The House of Commons Science and Technology Board, 2013 (13), also received evidence that demonstrated the importance of manufacturing infrastructure to support pre-production research and development essential to take technologies through TRLs 4, 5 and 6. This includes the need for large-scale test and experimental production infrastructure, enabling business to access prototyping, scale-up and demonstration facilities. In the Welsh context, good examples of this are SU's *Sustainable Product Engineering Centre for Innovative Functional Industrial Coatings* (SPECIFIC) and *Swansea Materials Research and Testing Ltd* (SMaRT) housed in the Institute of Structural Materials (ISM) in the Bay Science and Innovation Campus.

When universities establish a capacity for working further along the TRL spectrum, greater opportunities are leveraged to attract further industry collaboration opportunities and thus further diversify university income and a reduction in reliance on public funding.

Higher Level Skills

A University's core activity is teaching, but conventional teaching programmes are aimed at a broader audience of home and international students and cannot be targeted at regional needs. Innovative companies need qualified employees to support products across their life cycle, and successful knowledge ecosystems rely on a pool of regional talent to fulfil this role. There is often a mismatch between the demand for and supply of higher level skills in the local economy, which can have a negative effect on economic development and innovation potential. Design and provision of training programmes in direct response to employer needs can have a significant impact on the

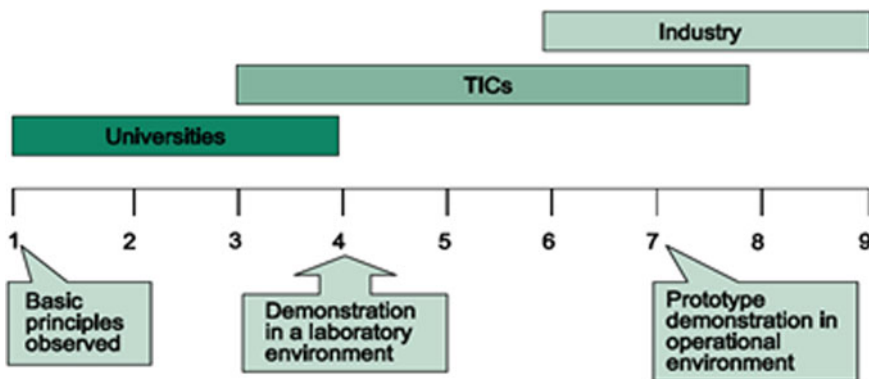


Fig. 12.4 Technology readiness continuance. *Source* Role of a Technology and Innovation Centre. www.parliament.co.uk

regional economy. However, this requires moving beyond traditional delivery models to tools such as distance learning, on-site teaching, modular programme design, new approaches to accreditation and increased engagement with the private sector in the design and delivery of training programmes. In order to deliver effective workforce development, there needs to be good labour market intelligence and future skills needs forecasting, requiring a strong partnership working between universities, employers and other learning organisations.

Promoting exchanges between university staff, students and SMEs can be an extremely effective way of not only exposing the SMEs to benefits of employing graduates, but also helping to build linkages and breaking down barriers between the university and the private sector which may lead to future collaborations in other areas (e.g. research, consultancy). There can be potential for real transformative effects as SMEs are exposed to the knowledge assets of the university via its staff and students.

The presence of universities in a region, particularly those with a high profile nationally and internationally, can act as a real “magnet” for talent. This can be in the form of students, but also academic and research staff who come to work in the institution. Where the research expertise of the university maps onto the sectoral specialisms of local industry, this can create a powerful “hub” for innovation activity. SU with an enhanced capability for economic impact can use its research strength, employer collaborations and global partnerships to deliver increased employability rates across the whole of its student population. Courses which develop skills which are in demand by employers will be the result of employer engagement in course design. Graduates from a professionally accredited programme have an advantage in the employment market, and in some disciplines, it is compulsory for a course to carry appropriate accreditation. To illustrate, if engineering courses are not accredited, the graduate is unable to progress to gain chartered status, which can impact on the individual’s career and a company’s success in competitive tendering and the development of a global market. A larger

proportion of students will also be able to access opportunities for relevant work experience or for work or study experiences overseas.

Two case studies on the Bay Campus illustrate the position:

Case Study 1: Swansea University: Skills Pipeline for Industry

Materials and Manufacturing Academy

The Materials and Manufacturing Academy (M2A) is a Swansea University initiative which provides demand-led, industry-focused postgraduate research training in the areas of advanced materials and manufacturing. This demand-led approach to doctoral and research masters provision ensures alignment between the outputs of the M2A and the needs of industry.

M2A will produce 194 high-calibre individuals trained to masters and doctoral level to go on and lead our advanced engineering and materials sector. The operation will deliver 105 engineering doctorates and 56 research masters participants.

The M2A training provision supports the industry-derived research project and affords a participant with a broad set of skills necessary to succeed in industry. The flexible mode of delivery provides a pathway to part-time provision of training for the existing workforce. It is anticipated that 33 part-time qualifications will be awarded over the lifetime of the project of some five years. Part-time participants, fully funded by industry, will work alongside the full-time participants, enriching the learning environment for both parties.

Case Study 2: Swansea University: Skills Pipeline for Industry

Airbus

The Welsh Government has backed a joint project between Swansea University's College of Engineering and Coleg Cambria with £2.7 m of funding for a new Higher Education Airbus and Aerospace Training Academy in Deeside. The project aims to deliver high-quality training, grow a skilled aerospace workforce and generate economic growth.

The facilities at the Bay Campus and the new Academy in Deeside when it is established in 2017, will address the training requirements of a global aerospace industry by providing high-level training for up to 75 Airbus apprentices and aerospace employees per year and will provide ongoing support for aerospace manufacturing.

The investment will provide fully equipped tutorial centres with dedicated connectivity in North East Wales and Swansea University's new Bay Campus Engineering Quarter in Swansea, to allow efficient, carbon-friendly delivery of high-level research-led training to support the local aerospace and manufacturing industry. It will also open up the research expertise and the facilities located on the Bay Campus to engineering businesses in North Wales.

Conclusion

Today's intensively competitive global economy requires not only leadership in innovation but also educated citizens capable of applying deep analytical skills and having the ability to manage ambiguity. In promoting innovation, SU has recognised the need to collaborate with industry and government in order to create a culture that enables innovation to thrive. This is the rationale behind this university's strategy in developing the Science and Innovation Campus that links the key drivers to economic growth in a twenty-first-century knowledge economy that includes research, skills development, commercialisation of research and partnerships with global companies. There are a growing number of initiatives, for example Barcelona 22, the advanced manufacturing centres in Birmingham and Sheffield that indicate that the key to delivering economic impact is the physical intermingling of each of these elements.

In his book *The History of Wales* (2007), John Davies described the post-war history of Wales as being defined by three places: Trewerin which embraced questions of language and community; Cardiff as the capital of Wales; and Margam as the new industrial base of Wales through the manufacture of steel. The new Science and Innovation Campus is located on Crymlyn Burrows which forms part of the outer curtilage for Margam. It may be that the twenty-first-century history of Wales is around the Swansea University Campus development informing as it does, the future industrial story of Wales from a learning country to a learning economy. This is because universities create the future. They do so in two ways: first by educating those to whom the future belongs and second by generating ideas and discoveries that can transform regions. With the recent global financial crisis, it is clear that research universities with an entrepreneurial focus have a particularly important role as anchor institutions as can be shown in the strategic approach taken by SU in developing its new Science and Innovation Campus.

The need to put Wales on a new growth path that can lead to a smart sustainable and inclusive economy demands a coherent and transformational approach to planning and delivery across Wales. The partnership approach linked with careful strategic planning, as seen with the development of the Science and Innovation Campus at SU, provides an exemplar for Wales on how universities should work with industry to enable the development and commercialisation of world-leading research whilst helping to address the deficiency in science and technology research in Wales. It is a rare example of the triple helix working successfully in Wales and as such a blueprint for modern Wales by anchoring the university in its community equipping it to embrace the new world of a learning economy.

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Chapter 13

From Creativity to Enterprise

Christina Slade

Abstract Creative industries sustain the economy in multiple ways. The creative economy is a driver of growth globally. It is critical to the success of the South West of the United Kingdom (UK). Creative industries derive from technological innovation combined with the critical and creative skills developed through the humanities. Taking as a case study creative industries in the South West of England, and a small creatively focussed university, this chapter argues that creativity and the humanities have a distinctive role in the entrepreneurial city region. It addresses the way that Bath Spa University aims to bring together cutting-edge technology with training in arts and the humanities.

Insofar as innovation and entrepreneurship happen in universities, they are generally associated with the so-called STEM subjects of science, technology, engineering and mathematics. This chapter argues for the importance of what has been called STEAM–STEM plus the arts, to use the term originally coined at the Rhode Island School of Design (RISD) in 2008 (RISD 2016). The creative industries are critical engines of growth in the South West region of England centred around the cities of Bath and Bristol. Bath Spa University contributes to that growth with its focus on creativity, culture and enterprise.

Section “[The South West of England and the Creative Industries](#)” deals with the creative industries and their role in the South West of England. Section “[Bath Spa University and the New World of Work](#)” describes Bath Spa University, its vision and its focus on preparing students for the new world of work. Section “[Engaged Research and Creative Practice](#)” gives examples of the creative entrepreneurship of Bath Spa students and staff. Section “[Internationalisation](#)” argues for the importance of globalisation in innovation, while Sect. “[Policy and the Future](#)” charts some of the difficulties that face a small creative university in the South West of England.

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The South West of England and the Creative Industries

The cultural and creative industries, as defined by the British Department of Culture Media and Sport (DCMS) in 2001, comprise:

those industries which have their origin in individual creativity, skill and talent and which have a potential for wealth and job creation through the generation and exploitation of intellectual property...

[Creative industries include]... architecture, the art and antiques market, crafts, design, designer fashion, film and video, interactive leisure software, music, the performing arts, publishing, software and computer services, television and radio (DCMS 2001: 5).

This is a broad and ever-expanding group of industries, but one which it is well worth grouping together, if only to emphasise how very different the economies of the twenty-first century developed world are from the industrial and post-industrial economies focussed on production. British Government data confirm that the creative industries are the fastest growing sector in the UK economy, outperforming all other sectors of UK industry (DCMS 2016). In 2014, the UK's creative economy had 2.8 million jobs, consisting of 1.9 million jobs in the creative industries which equate to 8.8% of the total UK workforce (West of England Local Enterprise Partnership (WoE LEP) 2015b). According to the latest figures published by the DCMS, the UK's creative industries are worth a record 84.1 billion to the UK economy in 2014 (DCMS 2016). This growth is three times greater than the wider UK economy. Indeed, the current definition may underestimate the impact. A breakfast cereal, for instance, is counted as food, yet the major part of its value is not the corn or rice flakes but the packaging, branding and marketing—all part of the creative industries. The 'creative economy'—a new measure including the indirect effects of creativity—is designed to capture creativity across the board (DCMS 2016).

Bath and Bristol, respectively, small- and mid-sized cities on the M4 corridor to the west of London, are home to a concentration of creative industries, to four universities and three colleges of further education and to hundreds of highly respected primary and secondary schools. The National Endowment for Science, Technology and the Arts (NESTA 2015) states that eight per cent of the creative economy is located in the South West—the fourth highest percentage behind London, the South East and the East of England. The data also show Bristol to have the highest concentration of creative employment. Bristol and Bath, taken together, have the largest cluster of technological and digital employment in the UK outside of London, with particular strengths in software development, data management and analytics (Tech City 2015). The broader West of England is dominated by micro-businesses. 25–30% of the workforce work as freelancers, in the animation, vfx and games sector (WoE LEP 2015a).

Taken as a whole, the creative industries provide about 15,900 jobs in the Bristol and Bath region, £0.66 billion GVA (gross value added), and have seen 106% growth in productivity since 1999 (WoE LEP 2014). Between 2013 and 2020, employment in the creative and digital sector is forecast to increase by

approximately 21%, equating to the creation of approximately 3200 jobs (WoE LEP 2015b). Yet, when Jonathan Dimson, a McKinsey partner, addressed assembled UK university leaders in March 2015 about the success of such entrepreneurial learning city regions as Birmingham, the low profile of the Bristol–Bath nexus was noted (Dimson 2015). The lack of collaboration and consistent policy in the South West of England is part of the reason for the region’s lack of profile in the creative industries. While the South West Local Enterprise Partnership works, as did its predecessor the Regional Development Authority, to foster concerted action, there is a history of lack of cooperation based on deep differences between the two cities.

Bath—Britain’s only world heritage city—profited from its hot springs. Romans and then, much later, the Georgians frequented the city for its waters. When it fell out of fashion in the early to mid-nineteenth century, the town’s fortunes were on the wane. Sir Henry Cole, who was responsible for the Royal College of Art and for the Great Exhibition of 1851, was a native of Bath. He proposed a series of art schools, which were to be founded in seventeen industrial cities, including Bath, then a faded and genteel watering place. The new art schools were to provide an atmosphere in which vision and drive were nurtured and the platform on which this technical and innovative education of the workforce could be built.

The Bath School of Art provided instruction in ‘design for manufacturing’. This bore fruit in the invention of plasticine by its director, William Harbutt, in 1897. He wanted a non-drying clay for his sculpture students. A patent was awarded in 1899, and in 1900, commercial production started at a factory in Bathampton. The Harbutt company continued to produce plasticine in Bathampton until 1983, exemplifying the link between design, education and industry. This nexus, which characterises the creative industries, is not well understood in Bath. Bath’s Council includes a partly agricultural region known as Bath and North East Somerset, where there is little awareness of the new forms of creative industry.

The port of Bristol, on the other hand, had been a port since Anglo-Saxon times but grew rich on trade with the Americas. With the industrial revolution, it became a centre of shipbuilding and engineering, then aerospace and now creative industries. These latter have been strongly supported by local government. Groups such as Aardman Animations, the producers of the cartoons Wallace and Gromit and Shaun the Sheep, and the BBC Natural History Unit are now supplemented by a large variety of tech, branding, film and gaming businesses such as Yogscast and Bristol Games Hub. Bristol offers high-speed capacity via fibre optics, in addition to a city-wide WiFi network, a 5G test bed and an experimental radio frequency option. The Mayor of Bristol believes that the city could become a European Creative Hub and has pledged to remove any bureaucratic obstacles holding organisations back. In addition, areas such as the Temple Quarter enterprise zone attract business rate discounts and relaxed planning rules.

Bath Spa University and the New World of Work

Bath Spa University has a distinctive role in its contribution to the development of an entrepreneurial learning city in the region. The university is relatively small, with some 7000 students in programmes ranging from art and design, music, dance, teacher education and the liberal arts, including philosophy, to environmental science and business. It's doctoral and masters programmes in creative writing currently attract students from the USA, Canada, Australia, India, Pakistan and Canada. In art and design, its 150-year history has included notable alumni such as Howard Hodgkin and teachers such as Walter Sickert and Jim Dine. Another predecessor institution of Bath Spa University was the Newton Park Teachers' College established in 1948, from which grew areas of strength in music, environmental science and entrepreneurship.

Bath Spa University's distinctive contribution to the entrepreneurial learning region is in the area of the creative industries. To support this, the university needed global partnerships and an international reach. Our vision was

To be a leading educational institution in creativity, culture and enterprise. Through inspirational teaching and research, we transform students' lives. Based in a world heritage city and connected to a network of international partners, Bath Spa University will ensure that its graduates are socially engaged global citizens (Bath Spa University 2015).

Thus, the university weaves 'cultural entrepreneurship' throughout its programmes—whether creative and cultural, environmental science or business. Innovation within the creative industries is slightly different from innovation in engineering, biotechnology or fundamental science. Markusen (2013) talks of cultural entrepreneurs and their importance in American cities. She argues that artists, designers, musicians and writers enrich a city and enhance the social fabric. Her examples, mainly based in the USA, show the importance of new ways of developing a culturally rich environment. Rather than building more large cultural complexes, a city can encourage cultural entrepreneurs with more subtle measures—relaxing planning constraints, for instance, to allow artists to regenerate urban areas.

According to Markusen, artists and cultural workers have different employment patterns from scientists and engineers.

Artists are many times more likely to be self-employed than are scientists and engineers... In contrast, scientists and engineers experience very low rates of self-employment... Artists are much more likely to have experience in commercial sectors—as employees, contractors, workers, or independent agents—than scientists or engineers are. But they are also more likely to also work—simultaneously and sequentially—in non-profit and public sectors. (Markusen 2013)

Markusen argues that the cultural sector drives innovation differently from engineering and science-based innovation. First, cultural innovation enhances regional growth since cultural innovators are more likely to remain in the regions rather than moving to the metropolis. This holds true in Bath, where the

self-employed artists, musicians and cultural workers do appear more likely to remain than engineering students.

Unfortunately, comments that ‘creatives stay’ play into the hands of critics who argue that arts-based education is a waste of time. There is a common view that cultural and creative employment is not a real job. In fact, as the statistics quoted in Sect. “[The South West of England and the Creative Industries](#)” suggest, the creative industries are driving the economy. The new world of work, as described in the *Gazelle Global (2012)* report, is no longer purely dominated by work for corporations, for manufacturing, in professions or for major service industry companies such as banks. A university degree is no guarantee of employment in corporations, nor should we expect it to be. The world of work has changed. Engineers, doctors, lawyers and corporations will survive, but much of the work graduates used to do is being digitised away. Creativity is more difficult to replace with technology. The job market is ‘hollowing out’ (Department of Business, Innovation and Skills, *BIS 2013*). Roles for which university had been a preparation are disappearing. While some highly paid jobs will survive in banking and corporations, the middle tier is increasingly automated. The creative digital sector will be the growth area. The new workers will be flexible, able to work on demand, bringing skills to bear as and when needed. Portfolio careers will no longer be the exception. Digital skills and entrepreneurial nous will be the hallmarks of success.

Andrew Hugill, Professor of Creative Computing at Bath Spa University, put the point sharply in an interview in 2013 to the BBC World Service, in which he listed the top ten jobs not then existing. In fact, several of the jobs he listed, such as data ecologist, gamification consultant and virtual environment engineer, have since been advertised. His argument was:

Creative people are becoming increasingly tech savvy, and there is a clear requirement already in business for creativity that works seamlessly with technology – these jobs are the next step in the direction many companies are already heading. (Hugill 2013).

Bath Spa University has moved to make such digital literacy a hallmark of our graduate attributes. The new courses in creative computing at undergraduate and postgraduate level supplement the range of courses dealing with media, television, gaming, graphic design publishing and creative music technology, which are already overwhelmingly courses in digital technology and artistic practice. There is no longer any divide between the artist and the computer, between design and the digital. Students must also be entrepreneurial, be able to manage their portfolio careers and to see the opportunities the new world of work offers. The courses are increasingly focussing on preparation for a new world of work, in which lifetime employment is a chimaera.

Digital literacy and entrepreneurial skills alone are not enough. The artistic and cultural skills in which Bath Spa University specialises are fundamental in the new world of work, the move to what has been called ‘design-based thinking’. Design-based thinking is described by Rotman (2009) as ‘the next competitive advantage’. Other theorists and practitioners emphasise the interplay of inspiration,

ideation and implementation (IDEO 2015). It involves a mix of analytic skills, visualisation, imagination and the ability to put action into practice. It recognises the importance of artistry as fundamental to business. Rather than seeing the cultural and creative skills of artists, musicians and writers as providing a distinctive type of entrepreneurship, this approach argues that design-based thinking is the new paradigm. When Steve Jobs insisted on design for Apple products, he epitomised design-based thinking. Artistic flair and a deep understanding of the psychology and lifestyle of users are more important than technical innovation in Apple's success.

There is one further essential component in preparing students as entrepreneurs: interdisciplinarity. English universities typically continue the pattern of hyper-specialisation of the secondary school advanced level qualifications, offering undergraduates a three-year single honours degree. In effect, students study just one discipline, and while they may be allowed to take suitable electives, any distraction from the core discipline risks a lower grade in the final year since that is based on the single discipline alone. At Bath Spa University, the single honours model still predominates as it does in most universities in the UK. There is little understanding of US-based liberal arts education, where students study across disciplines, or of the Scottish, Australian and New Zealand models where degrees consist of majors in different disciplines.

At Bath Spa University, we are attempting to encourage interdisciplinarity among students. We have brought together the areas of music, creative writing, media, performance, history, English and philosophy with the environmental science and business areas in the new 'College of Liberal Arts'. The college is divided into fields. One is labelled 'Environmental Humanities' and brings together writers (such as Gerard Woodward whose novels fall into what is known as 'ecocriticism') philosophers and biologists. Another, the 'Digital Hub', brings together areas as distinct as music technology and digital writing.

Engaged Research and Creative Practice

Bath Spa University, while small and regional, has a record of engagement. The humanities and arts are, in themselves, central to engagement with communities. The rigorous understanding of history, of literature and of art enhances an understanding of society. Moreover, as the Arts and Humanities Research Council (AHRC 2013) spells out, research in the humanities and arts has immense social impact. Bate (2011) and Belfiore and Upchurch (2013) argue eloquently for the importance of the humanities. Citizens need to understand historical complexity. They need the ability to engage and create imaginative connections.

By connecting researchers with policymakers, research in the arts and humanities can bring new perspectives and evidence to key policy issues and debate, through historical and cross-cultural disciplinary expertise. Bath Spa University staff are contributors to this process. Professor Iftikhar Malik's research on the

cultural and political history of South Asia has formed part of the public discourse in the UK and has been influential in informing British and EU policy and practice in Pakistan. Aminatta Forna, Professor of Creative Writing, is a recent winner of the Wyndham Campbell Prize from Yale. She has explored the personal impact of failed states in a series of novels. Her 2013 novel, *The Hired Man*, unpeels layer upon layer of the internecine conflict in Croatia, Serbia and Bosnia Herzegovina. Nathan Filer wrote *Shock of the Fall* (which won the 2014 Costa prize) as a Masters student at Bath Spa. It charts the phenomenology of schizophrenia, using Nathan's experience as a nurse in Bristol.

Students are engaged in drawing on their creative skills across a number of areas. Around the world, 4196 people work for Dyson, just one British technology company achieving global success. Six of their newest recruits are recent creative graduates from Bath Spa University, who, within the last eighteen months, have been selected to work at the firm's Wiltshire-based headquarters. Whether employed as 'junior creatives', 'graduate designers' or 'creative advertisers', all fit the mould of a workforce described by Founder and Managing Director James Dyson as needing to be 'creative, courageous and unconditioned fresh-thinkers'. With its focus on creativity, culture and enterprise, Bath Spa University enables creative-thinking graduates to enter highly successful careers within manufacturing.

But the greatest impact and potential for entrepreneurship lies in the new interdisciplinary spaces in which the digital interacts across the core creative and cultural areas. Jerry Fishenden, a part-time Professor at Bath Spa University, and founding member of the Centre for Creative Computing, created an app called 'London Streets'. The app is designed to draw together historical images of London streets, old maps and images. Using the app, it is possible to stand on a London corner—Smithfield, for instance—and just by swiping a smartphone see how it was ten years ago, twenty years ago, a hundred or, through paintings, hundreds of years ago. The university is negotiating with the local council to develop a commercial app for the streets of Bath—some of the most drawn and photographed in England, and the history of which is a specialisation of the university.

Another Professor of Creative Writing, Naomi Alderman, developed 'Zombies, Run!' an iPhone fitness game and audio adventure, with games studio Six to Start. Funded through Kickstarter, the app received almost five times the funding requested and has regularly topped the rankings in iPhone Health and Fitness apps. The app has been featured in the New York Times and on Britain's television Channel 4 News. Naomi explains that it is her strength in narrative that ensured the app's success. Similarly, Dave Sproxtton of Aardman, the creators of animated characters like Shaun the Sheep, talks of the importance of narrative. He tells of a case where professional actors acting out the story line helped resolve how the story would go. Artistry and technology are tied together in innovation in the creative industries.

Creative practice extends well beyond traditional art forms. Staff at Bath Spa are particularly interested in these new forms of art. *Illuminate Bath* (Head 2010, 2012, 2015) is a research project jointly funded by university/industry/local council. It is a free outdoor festival in which light is projected on Bath's historic buildings. This

research into large-scale, participatory visual artworks includes large screen work via the BSU MediaWall. This is a video wall situated in the Commons building of Bath Spa University. It is approximately 8 m high (7.35 m × 3.75 m and 0.4 m above the ground) and consists of 30 × 55 inch HD LCD screens in a portrait format that are used to display multimedia/video/animation using the wall as one giant screen or splitting up into many different screen combinations. Since commissioning in April 2014 and the official launch in June 2014, we have hosted a number of projects from internationally recognised artists such as Julian Opie, Kelly Thompson (Concordia University Montreal), Marilyn Fairskye (Sydney) and James Coupe (Seattle). Other displays have been developed by academics, staff and students, such as work based on a master class with the distinguished sculptor Richard Long. On occasions, local school children have been involved in developing projects. There have been animations, dance performances, virtual paintings, interactive experiences, concerts and computer games.

MediaWall operates as both gallery space and experimental educational research space, viewable by the thousands of BSU students, staff and visitors. Unlike large-scale outdoor projections (viewable only when it is dark), the fact that a wall of this scale is viewable all day presents great opportunities and challenges for artists and scholars to explore their ideas with this impressive digital technology.

A recurring question is how traditional art forms such as opera may adapt to the digital world. Opera has been using digital technologies in stage productions for many years, and there has been digital streaming of live performance from the opera houses into cinemas. However, both of these solutions are merely ways of re-presenting traditional opera. A new form of opera is emerging from the digital world itself. It lacks the ritualised behaviour of a trip to the opera house, but replaces this with an immersive experience that is delivered direct to the individual via the network. Andrew Hugill's online opera *The Imaginary Voyage* is an example of an immersive networked opera. The opera is built upon 'The Syzygy Surfer' and allows viewers to chart their own narrative passage through a series of songs and images. Each viewer sees a new and completely different work of art.

Internationalisation

Globalisation is as essential to the new world of work as flexibility and interdisciplinarity. At Bath Spa University, we argue that graduates should be 'socially engaged global citizens'. This may appear a daunting aim for a small regional university like Bath Spa. In 2012, when the current vision was articulated, Bath Spa University had fewer international students as a proportion of its total student body than any other English university. This was doubly concerning given that art, creative writing, music, design and philosophy are of their nature globalised. Fashion, for instance, taught at the School of Art and Design, is one of the most globalised of all innovations, with trends moving seamlessly across borders. In a digital world, globalisation is ubiquitous. International connections are vital to the

success of students and of the university as part of the ecosystem of entrepreneurship.

The university's vision of 2012 emphasised internationalisation. The aim was to ensure students had a globalised outlook. In 2012, over 80% of students at Bath Spa came from within the South West region of the UK. While that had great advantages in terms of regional engagement, students lacked the international contacts they would need to work in a globalised world. Now, over 15% of students are of international (including European) background. That makes it possible for all students to develop the international networks necessary for a globally connected entrepreneur. However, recruiting international students is not enough—they need to be integrated into the broader university community. This has been achieved. An I-graduate survey of international students at Bath Spa University shows them among the most likely to have friends from the home country—in this case Great Britain (Archer 2014).

Internationalisation also means British students should study, work and live beyond Britain. Many students at Bath Spa University lacked the financial or cultural capital to enable them to study abroad. This is particularly true of a university such as Bath Spa, where a high proportion of students come from socio-economic backgrounds where international travel was not the norm. As a tool to address this, we introduced the Global Citizenship programme, an extra-curricular course, introducing students to globally recognised speakers and subsidising their study abroad.

Internationalisation is not just about mobility. It is about content, perspective, method and approach. Most academics have their own international networks, but that is in itself not sufficient to ensure an international perspective to the student experience. In order to open up access to global perspectives, I instituted the Global Academy of Liberal Arts (GALA): a network of international liberal arts institutions. Launched in 2014 by Professor Liz Coleman, a former president of Bennington and a TED speaker, GALA uses its networks and partnerships to internationalise student and staff experience. Students can learn virtually across campuses and are able to take courses and get credit across the network. Partners include the Universities of Stockholm in Sweden, Parma and Udine in Italy, The Humanities Research Centre of Utrecht University in the Netherlands, the Russian Presidential Academy of National Economy and Public Administration (RANEPA) Liberal Arts College in Moscow and the School of Form in the University of Social Sciences and Humanities in Poland. In North America, partners include the Tec de Monterrey in Mexico (the top ranked university in Latin America), Claremont College in California, State University of New York (SUNY) Geneseo in New York and the Faculty of Fine Arts at Concordia University in Montreal. In China, there are the Communications University of China and the Beijing Foreign Studies University, while the National University of Taiwan has also joined. In Australia, the Faculty of Creative Industries at the Queensland University of Technology and the Coetsee Centre at the University of Adelaide are partners. The network is formed on the basis of a coincidence of highly reputable undergraduate- and master-level programmes, of research interest and of excellence. Our students travel

within the network to study—this year to Mexico and Beijing as well as Los Angeles, Adelaide and Stockholm. More importantly, as we begin to develop the linkages, there will be possibilities of internships with the partners so that students have the experience of working abroad.

All areas of the university have been engaged, from artistic practice through music to environmental sciences. One of the most successful collaborations, *Lost Waters*, draws together Concordia in Montreal, Adelaide in South Australia, Beijing, Bath and New York State in a cross-disciplinary investigation of submerged waters. Biologists, environmentalists and artists, students and staff have worked across time zones on art works and debate. Work has been displayed in Montreal, New York, London and on our own MediaWall. The Canadian Research Council has awarded a grant, and other applications are being made.

Research funding is slight when held up against grants in medicine, pharmaceuticals, aerospace and physics. This is partly because costs in the creative industries are not high, the outputs at times niche. Nevertheless, they are global and profoundly cross-cultural, creating understanding, debate and engagement.

Policy and the Future

Bath Spa University is a small creatively focussed university, developing the skills needed for the twenty-first century. Students are very likely to work in portfolio careers, and while many may be successful, the measures of success are not those of the corporate world. Many of those who develop and implement policy remain convinced that the ‘arts’ do not contribute to the economy and are not wise choices for study. Yet, as we have seen, Bath Spa University students work in industry, such as with Dyson. We need data to demonstrate the impact of our work, we need to support and to develop partnerships, and we must ensure our students and society at large understand the value of their skills.

There are significant areas in which data, governance and policy could support the entrepreneurial possibilities of a university such as Bath Spa University. It is necessary to gather evidence of the impact of the humanities and creative industry research for society. Public private partnerships should be encouraged. There is a need for more government-funded initiatives where significant risk is involved. And local government must foster the creative industries.

The Arts Council England (2014) called for comparative and longitudinal studies that evidence the distinctive value of the arts over other sectors such as sport. Recent Arts and Humanities Research Council (AHRC) funding calls in Britain have focussed on the evaluation of the sector. Bath Spa University is involved in the ‘Bristol and Bath by Design’ research project that will fund research into the value of design. To take one example from Bath Spa University, Laura Caulfield has established a methodology for articulating and assessing the effect of creative arts interventions (such as painting and drawing, embroidery and stitching, making pottery and music, and writing and performing stories, poems and play) on

prisoners' mental and social behaviour. Developing techniques to evaluate the physical impact of object interaction has important implications not only for arts practice, but also for the manufacturing and design economies.

The entrepreneurial city region requires public–private partnerships. But they are not easy to establish, nor are they readily available in the creative industries. Creative industries are typically very small enterprises. Tales of venture capitalists in Silicon Valley notwithstanding, start-ups are difficult to fund. Mazzucato (2013) is highly critical of UK policy with respect to start-ups, SMEs (small and medium size enterprises) and tax breaks, arguing that government policy needs to encourage longer term investment, not 'take the money and run'. For example, the Corsham Institute in the county of Wiltshire is a public–private partnership in which Bath Spa University is involved. It is a private, not–for-profit group focussing on digital innovation. The sources of funding, including that through the Local Enterprise Partnership, in this case a joint body between Swindon and Wiltshire, are politicised. A successful bid to develop Digital Corsham, a centre in the town aimed to provide education and digital access, has been divisive in the town and has consequently been delayed. Venture capitalists do not look to Wiltshire for cutting-edge technology. We need to drive a change in perception, so that a silicon stately home or a silicon cottage or village are not seen as oxymorons.

Mazzucato (2013) argues that it is simplistic to assume that an entrepreneurial city or region can emerge without government support. She works through cases in detail, arguing that, in spite of the accepted view, private money rarely is the major supporter of innovation. Even Google is based on an algorithm, she points out, developed with public funds. She argues:

“...that targeting resources towards R&D spend, patenting or small firms in isolation misses the point and that similarly waiting for venture capital to do all the heavy lifting is likely to be futile... [We must insist on] the government's role in investing where the private sector will not, in the most uncertain risky areas. ... it has been the state, not the private sector, that has created economic dynamism” (Mazzucato 2013: 21).

The UK has had great success in fostering innovation through Innovate UK and through the Local Enterprise Partnerships. The European Union also has considerable funds available. For small players like us, however nimble, it is very hard work to put together an EU bid. Applications for funds require a bespoke team familiar with EU language and requirements. Other funding streams are not generous and suit the big players much better than institutions like Bath Spa University with limited capacity to write bids. What is more, technology remains seen as a 'big boys' game', meaning expensive engineering. In fact, as we have seen, the creative industries are not like that—they are digital, mobile and regional.

There have been significant successes in the UK. In Birmingham, three universities and local government have come together in a remarkable regeneration of the city centre that will protect and develop innovation space and creative industries. In Bath we have not been so lucky. The Bath and North East Somerset Cabinet have set itself against any increase in student numbers and wishes to revive traditional manufacturing. Bath, a city of 80,000 with around 20,000 students

during term, is no longer attractive for the traditional industries the School of Art so successfully brought to the region in the nineteenth century. Transport, once well provided by canals, is ill-served by the restricted traffic movement of a world heritage city and the distance from the M4. Industry is moving to easier locations.

To take one example, a furniture manufacturer, Herman Miller, decided to sell its factory in Bath over a decade ago. The factory, designed by renowned architect Nicholas Grimshaw in the 1970s, was listed as a heritage building and hence could not be pulled down or greatly altered. However, the site was designated for industrial development. The Bath School of Art and Design is ill-suited in its current location, originally built as a domestic science block. It seemed a match made in heaven. After all, the School of Art was brought to the city in the 1850s to encourage industry and succeeded in doing so. Moreover, the listed factory building is suited to the school, although no longer appropriate in style or location to industry. Nicholas Grimshaw himself was enthusiastic, seeing this as the perfect reuse of his fibreglass flexible structure.

When Bath Spa University made an offer in 2015 for the building, the factory had already moved out. The sellers were delighted. However, the local planning authority did not approve the necessary change of use from industry to teaching space. Rational argument was powerless. It was evident that the school would employ more people than the factory. A report from Oxford Economics (2015) showed the dependence of the town on income associated with the universities and students. No other buyers had appeared for the factory in over a decade.

No doubt the impasse will be resolved. Yet the example shows the importance of local government engagement and support for innovation in the creative industries. What are needed are the subtle measures Ann Markusen advocates—relaxation of planning constraints and recognition of the complex ecosystems of creativity.

The theme of this volume is the Entrepreneurial Learning City Region. We know that universities—and the arts and the humanities—are critical components of regional regeneration. In a globalised and connected world, the creative industries drive enterprise across the borders of city and country, and nation and globe. Higher education generates intellectual property, trains the labour market of the future and engages the public in the arts and humanities. Creative practice is essential for understanding the world. We will not solve wars with bigger weapons or tougher sanctions. Nor is the answer to mental illness merely a question of better drugs. We need to develop an understanding, an emotional range to think differently.

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Author Biography

Professor Christina Slade commenced her role as Vice-Chancellor of Bath Spa University in January 2012. Bringing with her a wealth of experience from her former roles as Dean of the Schools of Arts and of Social Sciences at City University London, Dean of Humanities at Macquarie University (2003–8) and Professor of Media Theory at the University of Utrecht, Professor Slade is leading the university through a world-class campus development project focused on internationalisation and of public private partnerships. Trained as a philosopher of logic and language, her research has focussed on issues of the media since 1990. Her monograph, *The Real Thing: doing philosophy with media* (2002), examines the role of reason in the media, while *From Migrant to Citizen: testing language, testing culture*, (2010) jointly edited with Martina Möllering, looks at linguistic, legal and philosophical aspects of citizenship testing. Her most recent monograph, *Watching Arabic Television in Europe: from diaspora to hybrid citizens*, was published in 2014.

Chapter 14

Creating Learning Opportunities for the Cities: Community Engagement and Third Mission in the University of Catania

Roberta Piazza

Abstract Starting from a review of relevant reports and research experiences to provide a wider context for the analysis, this chapter aims to examine the extent to which the University of Catania is just in the city, or a part of it and contributing actively to its development. In particular, we discuss the impact of University activities in the areas of social or community engagement, intended to address critical societal issues and contribute to the public good. To better understand the level of University engagement within its wider community, this chapter is based on the analysis of the wider third mission activities of the University, to highlight the commitment of the University to perform research. The aim is to cope with some problems of the city and the surrounding region and the consequent ability of the University to disseminate the results of such research within the community.

The Framework

Many studies pertaining to the role of universities in regional development have stressed the capacity and the capability of academic institutions to contribute to the economic, social and cultural development of the cities and regions where they are located, but, to date, this ideal has not been realised in a full or meaningful way.

As highlighted by the Agenda adopted by the Commission of the European Union in September 2011 for the modernisation of Europe's higher education systems, universities occupy a central role in the strengthening of integrated local and regional development and change plans. The knowledge created, the experience possessed, the professionalism of the educators, the relationships and connections made at all levels and access to sources of funding constitute essential elements which can be used by the leadership of the University to spread a learning culture and to contribute to economic, social and cultural growth (Longworth 2006; Longworth and Osborne 2010).

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Attempts and actions to attain these goals are often referred to as the University's *third mission*—activities able to stimulate and direct the application of knowledge to the benefit of the social, cultural and economic development of our society. The interpretation of what type of functions should be included in the definition of the third mission varies considerably amongst countries and different contexts (from the focus on technology transfer from universities to enterprises, to the broader concept of extension of the University to serve community needs) (Görason et al. 2009). Unfortunately, the third mission is often confined to the area of technology transfer, neglecting the potential that a University has to address the multiple crises facing towns and cities today. There is no doubt that the potential involvement of a University in city development clearly goes beyond the relatively narrow perspective of innovation and technology transfer, academic enterprise and human capital formation that this economic focus mainly entails (Goddard et al. 2011). It concerns the possibility for the University, thanks to a holistic, progressive and sustainable view of regional development, to emphasise its role together with civil society “in tackling local and regional disadvantage, inequality and poverty” (Pike et al. 2007: 1263). These ideas have emerged from a number of European studies which were conducted with the aims of exploring the opportunities that universities have to measure their performance in building a *learning city* thanks to positive effects on *community development* (European Union (EU) 2011).

Starting from a review of some relevant reports and research experiences on learning cities and third mission activities to provide a wider context for the analysis, this chapter aims to expose the extent to which universities, or a part thereof, are just in the city, and contributing actively to its development. The outcome is to analyse the impact of the University activities in the areas of social engagement, intended to address critical societal issues and contribute to the public good (Committee on Institutional Cooperation (CIC) 2005).

To better understand the level of University engagement with its wider community, this chapter is based on the analysis of the wider third mission activities of the University, in order to highlight the commitment that the University research dimensions carry out to cope with some problems of the city and the surrounding territory (as they are advertised on the University Website) and the consequent ability of the University to disseminate the results of such research to the community.

Universities and Societal Tensions: The Place for Public Engagement

It is now a widespread notion that the key element in the social contract between universities and their hosting societies is the exchange of significant knowledge and expertise. The hallmark of what is defined as “community engagement” is given from the development of alliances which are able to guarantee a mutual exchange of knowledge between the University and the community, enabling mutual benefit.

The drive which stimulated the rapid diffusion of such an innovative idea—and that the academic institutions and the community may benefit from working together and exchanging competences and experiences to generate new knowledge—comes from inputs relative to the new methods of production of knowledge and to the structural changes of the University over the last quarter of a century. The rise of the knowledge economy (Lundvall and Borras 1997) and the need to face growing competition in the “global ideas market” (Bryson 2000; Brazeal 2012) translate into a loss of their monopoly of such types of producers by part of the University. The weight of this has been placed even more on the growing importance of knowledge and on its social meaning, given the importance taken by knowledge capital as a base for economic competitiveness and growth of productivity (Lundvall and Borras 1997).

The need to take on the demands of an ever-changing job market and to face employability as a new myth of the neoliberal market has determined a shift in the traditional forms of knowledge demanded from universities. From the intellectual complexity and the traditional disciplinary lines, we have moved to new problem-focused themes based on employers’ needs (Gibbons et al. 1994) and to increasing connections with the workplace (Molesworth et al. 2009).

Moreover, the increasing sense of the importance of “place” in the knowledge economy (Madanipour 2010), urban competitiveness policy and the pressure for universities regional engagement (OECD 2007; Huggins and Johnston 2009) have determined a development of knowledge-based urban models (Benneworth Cunha 2015). What has emerged is that the development of cities and regions is increasingly shaped by knowledge processes (Sarimin and Yigitcanlar 2012), and the University plays an important role in fostering local and regional competitiveness as significant knowledge enterprises, as well as the suppliers of the human and intellectual capital on which other knowledge enterprises depend (Benneworth et al. 2010: 1612). Regional and local authorities are, therefore, increasingly looking to harness universities to support their economic development ambitions both as global players and as regional providers of knowledge and skills (Goddard and Chatterton 1999). Such a need has given birth to the consideration of the role of the University in contributing to technological innovation and its definition as an *entrepreneurial University* (Battenburg 1981; Smilor et al. 1993; Clark 1998, 2004; Shattock 2009; Etzkowitz 2013; Gibb et al. 2012). As Benneworth and Osborne noticed (2014), University–business engagement has profoundly affected relationships between universities and society by “framing universities’ activities’ value in cash terms; ranking different kinds of University activities on their strategic importance; and encouraging universities to focus on only a few strategically important activities” (Benneworth and Osborne 2014: 205). Societal engagement has, therefore, been mainly viewed from an economic standpoint as a “third mission”, favouring business engagement and marginalising other engagement activities.

Lastly, the twenty-first century’s global challenges—climate change and degradation of the natural world, oil shortages, global disease, and civic instability—have highlighted the need to take on these problems under a systematic view,

given that the cities' future survival requires that we systematically address these problems via collective action and co-ordination (Dunlap and Brulle 2015; Guattari 2005). Although it is clear that Universities can support the creation of new collective social systems, based on the collaboration with civil society, the processes of marketisation and privatisation (Lynch 2006; Mateo 2014) which affected universities over the past thirty years and transformed the institutions founded on competition more than collaboration (Marginson 2011). Nonetheless, the impending need to appeal to common sense to face social, economic, cultural and environmental problems, to which we are subject, focused on the consideration of sharing responsibility in the development of knowledge and on ways to involve the stakeholders in academic activities, allowing the community to have the right to co-determine the ways through which universities can make their knowledge available to society. From the «triple helix» model (Etzkowitz and Leydesdorff 2000), including universities, firms and government, we have moved to the «quadruple helix» model (Leydesdorff and Etzkowitz 2003; Leydesdorff 2012), considering civil society as an important element of innovation and recognising the interaction between universities, firms, civil society and government as a way to transfer University knowledge into society as a way to solve societal problems (Bennewoth and Cunha 2015).

Another element is given by the acknowledgement that students should commit to learning that produces useful outcomes for the community as well as for themselves, and quality learning based on problems (*engaged learning*) across complex and contested local, national and international issues can improve learning results, retention of knowledge and social responsibility (Kuh et al. 2005, 2007; Tinto 2006). It is what happened in Latin America and in the USA where universities have an explicit duty to deliver social services via *service learning* (Tandon 2008; Tapia 2008). Service learning that represents “the linkage of academic work with community-based engagement within a framework of respect, reciprocity, relevance, and reflection” (Butin 2010: xiv) is a form of experiential education in which students engage in activities addressing “human and community needs together with structured opportunities intentionally designed to promote student learning and development” (Jacoby 1996: 5). Theoretical roots can be found in John Dewey's reflection on democratic and civic education (1938), on the role of reflective thinking in experiential education (Kolb 1984; Schon 1987), and in critical theory (Freire 1973). Recent development in service-learning theoretical frameworks includes pedagogy of engagement (Lowery et al. 2006), the transformational model (Kiely 2005) and service learning as postmodern pedagogy (Butin 2006, 2010). All these approaches refer to service learning as “scholarship of engagement” (Boyer 1996), grounded on linkages between classrooms with communities and theory with practice, aiming at improving students' academic achievement, enhancing their cultural competences and fostering individual, institutional and community change (Colbeck and Michael 2006; Harkavy 2006).

The picture presented until now contributes to redefining the role of universities in the relationship with the broader social context and to clarify the complexity of managing today's universities, facing many pressures to respond, which is what

some authors have called “mission stretch” or “mission overload” (Scott 1995; Clark 1998; De Boer et al. 2007; Enders and de Boer 2010). It raises the question of how universities are able to balance the duties that derive from these various societal tensions: until the point in which they must extend to respond to the questions asked by civil society and to contribute to producing social innovation, or even respond to the innovation imperative, “a belief that as economic development depends on innovation, public expenditure should be increasingly managed to functionally drive innovation activities” (Benneworth and Osborne 2014: 206). Indeed, even universities which have until now given little weight to the requests coming from society find it always harder to exclude societal influences from the academic sphere. However, as Benneworth et al. (2013) argued, the activities aimed at satisfying community needs, often remain marginal, as universities strategically prioritise core activities—teaching and research—to satisfy their most important stakeholders. “Peripheral activities remain isolated, they find it difficult to create synergies with other University activities, and they do not become influential reference points for the wider University community in terms of norms, routines and cultures” (Benneworth et al. 2015: 520).

While the engagement missions have not yet been successfully embedded within a wider institutional change, in Europe, third mission and business engagement (Zomer and Benneworth 2011) have taken over more diverse kinds of social engagement. But third mission is just one of the engagement activities. Although these are still realised within the marginality of universities’ core activities (Clark 1998), they must be considered as a fundamental element by which universities fulfilled their societal compacts and regional needs. In a holistic view of their activities, universities need to be aware that regional engagement cannot be achieved mainly through third mission activities, but it should be embedded into teaching, research, engagement and engaged scholarship activities, mutually developing with partners integrated regional and University innovation strategies (Goddard et al. 2007).

Mapping Engagement and Third Mission Activities

In a democratic society, dialogue between universities, cities and other stakeholders should be of a participatory nature and everyone should have the chance to access knowledge and use it to improve their lives in economic, environmental and cultural terms. It is essential that such interaction is based on parity of esteem—the University does not possess all the answers or indeed is it aware of all the issues.

It is, therefore, important, especially in a situation such as that which pertains to Catania, where there is little awareness of the opportunities offered by the learning city, to assess the level of consciousness of the role of the University in creating such a city, analysing if University engagement is “infused and embedded” into academic activities (Duke 2008: 92).

What can be noted is that community engagement activities across European universities remain implicitly important, with University leaders having difficulty in supporting them in the face of other more urgent pressures. This makes it essential to develop resources for institutional leaders (Benneworth and Osborne 2014), including indicators for engagement and third mission activities.

There is a rich literature on the topic of indicators for community/regional engagement. Some of this literature has proposed sets of indicators to use in evaluating the benefits, costs and otherwise of University–community interactions. Many other projects have been devoted to the identification, delineation and management of a learning city, focusing their attention to the development of indicators to evaluate the performance of cities and universities. Some of them are the following:

1. the Russell report indicators for measuring third stream activities (Molas-Gallart et al. 2002). The research report came up with more than 30 indicators representing measures of knowledge transfer to the wider community;
2. the Higher Education-Business and Community Interaction Survey carried out by the Higher Education Funding Council for England (HEFCE 2008). It is an annual survey used as a source of information on knowledge exchange in the UK as well as to inform funding allocations awarded to UK universities to reward their third stream activities;
3. the Charles and Benneworth benchmarks (2002). The benchmarking tool consists of 33 benchmarks, covering the variety of actions undertaken by a heterogeneous set of HEIs;
4. the AUCEAU (Australian University Community Engagement Alliance) Community Engagement metrics (Garlick and Langworthy 2006), coming up with indicators to assess University community engagement and developing a number of benchmarks;
5. the third mission indicators proposed in the PRIME-OEU Project (Observatory of European University) (Schoen et al. 2007). The project distinguishes within the third mission the economic dimension, but also participation in policy-making, and involvement in social and cultural life. The project gathers third mission activities around eight dimensions: four economic and four societal;
6. University societal engagement indicators proposed in Sweden (Vetenskap and Allmänhet 2007);
7. the Carnegie Foundation Framework for elective classification of community engagement (Driscoll 2008);
8. the GOODUEP (Good University–Enterprise Partnerships) project (Mora et al. 2010). The types of activities considered as University–enterprise partnerships relate to research and innovation, teaching/education and cultural and social engagement. The different levels have been analysed through case studies involving in total six countries, 18 universities and 10 partnerships;

9. the research project (2009–2012) European Indicators and Ranking Methodology for University's Third Mission (E3M). The main objective of the project, involving partners from eight European HEIs and seven countries, was to generate a comprehensive instrument to identify, to measure and to compare third mission activities of HEIs, in part through the use of an array of indicators of third mission activity and performance;
10. the PURE research project (2009–2011) aimed to help cities and regions to get more out of their universities by making links and sharing expertise. The third mission of any University is defined as the contribution it makes to the economic, social, environmental and cultural development of the region where it is located. The PURE project is a large-scale research involving 17 regions across Europe, Africa, Australia and the US;
11. a number of specific projects funded by the EC in the field of LC, mainly under the aegis of its Lifelong Learning Programme (LLP). These include the following projects: TELS (Longworth 2000), Pallace (Longworth and Allwinkle 2005), Lilliput (Longworth 2006), Lilara (Doyle et al. 2007), PENR3L (Pascal 2008), EUROlocal (Hamilton and Jordan 2010), R3L+ (Eckert et al. 2012) and MASON (2012). These projects are aimed to implement the learning city-region model and to help universities, thanks to sets of indicators, to recognise the importance and initiate issues and projects on local and regional development, balancing the economic with more social orientation, and, therefore, help shifting more attention to good governance, sustainable development, equitable education for under-represented social groups, literacy campaigns, community development with active citizenship and civic engagement, intergenerational learning, etc. in city-region co-operations of people;
12. a set of Key Features of Learning Cities developed by UNESCO (2013). In order to determine the progress of a city, indicators based on a combination of existing administrative data, survey data and expert analysis, linked to a conceptual framework, have been set up.¹

In the majority of these projects, third mission activities are generally collected around three dimensions related to teaching and research—technology transfer and innovation, continuing education or lifelong learning and social engagement—implying a great deal of mission overlap. The question does not lie on dividing community engagement and third mission from the traditional teaching and research activity; instead, it can be found on achieving a situation where community engagement is realised through the core activities of teaching and research and not regarded as a residual activity.

¹The VQR indicators in the Italian context (2013) is the first tool to evaluate Italian universities and their third mission activities, suddivise in attività di valorizzazione della conoscenza and “social and cultural third mission”. A new report on universities third mission activities has been published in 2017, evaluating TM activities carried on in 2011–2014 (http://www.anvur.org/index.php?option=com_content&view=article&id=799&Itemid=597&lang=it)

Moreover, as indicated by Jongbloed et al. (2008), the success of an engaged University partially depends on the ways in which it manages to connect to themes and stakeholders in that environment, and on the ways in which this environment intercepts, uses and develops the results of the interaction. Hence, indicators cannot be understood as tools to evaluate specific groups or programmes (as well as the University as a whole). Instead, indicators could be used to understand whether groups or programmes succeed in fulfilling their mission in a relevant context. Mapping University–community and University–regional/city interaction can help to discover the interactive and networking processes that characterise such knowledge exchanges and recognise the diverse channels through which University activities influence society and the University is in turn influenced by it (Mowery et al. 2004).

However, not all types of interaction can be captured in a quantitative way. In a recent work, Benneworth and Osborne (2014) have analysed the multiple activities of community engagement in Europe, taking inspiration from the 1980s report from the Centre for Educational Research and Innovation (CERI) for understanding the variety of institutional approaches to community engagement. Since many good practice examples of University engagement with society can be found in Europe, the authors propose to classify University activities considering “modes of delivery” and hence distinguishing between teaching, research, knowledge exchange and service learning (Benneworth and Osborne 2014: 209). However, it seems clear how a number of concrete engagement initiatives have multiple aims and cover multiple categories, involving different kinds of University activities together.

All of this make it hard to resort to indicators to capture ways of interaction between universities and regional/city communities. Certainly, the problem does not reside in the pretension of wanting to find all aspects of interaction as well as the collection of information on the frequency, importance and impact of this interaction. It seems that the highest priority is recognising the various ways in which community engagement is intended in universities, all of which emphasises various dimensions of collaboration and engagement. The framework of the activities carried out, greatly fragmented without overall institutional co-ordination, attests to the variety of approaches used to face community problems, but at the same time, highlights that University engagement with society is still not at the heart of HE missions.

Few formally managed duties and responsibilities and few incentives for universities to institutionalise engagement make the sector extremely fragmented and lacking in institutional co-ordination. European policy-makers still have to find ways to place these activities “away from universities’ experimental peripheries and incorporating them into the heart of the twenty-first century University, bringing various engagement projects out of their protective spaces nurtured by enthusiasts, exposing them to the reality of existence within universities” (Benneworth and Osborne 2014: 213).

The Study

To better understand the level of University engagement with its wider community, this chapter is based on the analysis of the wider third mission activities of the University, as they are advertised on the University Website. The aim is to highlight the commitment that the University research dimensions carry out to cope with some problems of the city and the surrounding territory and the consequent ability of the University to disseminate the results of such research to the community.

The contribution, after a very brief description of the University of Catania and of the city in which the University is situated, focuses on strategies and practices inside the University, recognising how this commitment is realised in practical applications within the community. It presents the research results analysing the University activities towards regional and city challenges and a good practice inside the Athenaeum.

The University and the City

The University of Catania, with more than 60,000 students attending lessons given by over 1500 professors in the eighteen Departments and two Didactic Units, which in turn are staffed by over 1200 administrative employees, is the main University in Sicily. The University buildings are spread throughout the city, with a contrast between the modern, hi-tech “University City” and numerous historical buildings in the old city centre.

Catania is a municipality with a population of 302,884 inhabitants, the second largest town in Sicily both by population and housing density (1683/km²). The population has been in decline since the 1970s, as a result of the dynamics typical of metropolitan areas exposed to urbanisation. The development of the city has been stifled by the growth of neighbouring towns, which has led to more commuting in Catania, hurting the city because of excessive urban traffic and pollution.

The city’s economy suffers from a lack of entrepreneurship, a lack of aggregation of industrial sectors and a lack of mobility in the job market and from organised crime. The unemployment rate in Catania is almost 20%, while the employment rate is 43.7%. Temporary jobs account for 50% of new appointments, while undeclared “black market” jobs account for another 30%, demonstrating that there are evident inequalities in the labour market, which deprive workers of the most basic job security. In addition, today’s employment crisis, with the loss of more than 10,000 employees, has made the problems related to social inequality even more evident, with the crisis in the social services and the general economic impoverishment and cultural heritage of the city.

Significant immigration in the city of Catania has been observable only for the last twenty years. In the province of Catania, the percentage of immigrants is 1.9% of the total population. The largest immigrant groups come from sub-Saharan Africa (0.69%), from South Asia (0.46%) and from other European countries (particularly from Ukraine and Poland) (0.33%). Sicily has the highest percentage of foreign minors in Southern Italy (20.4% of all foreign nationals) that in Catania account for almost 20%. The problem of housing is a critical need in the city, but also a weak production sector, which does not offer prospects for steady employment.

In school education, the high number of school dropout should be recorded (25% of young people between 18 and 24 years with the middle school diploma and no longer in training) against 9.9% of the EU average (2012 regional data). Dropout students in the secondary school constitute 38.6% (2013–2014) (Dossier *Dispersione Tuttoscuola* 2014).

University Community Engagement and Third Mission Facts

The main aim of this section is to estimate the extent to which the University of Catania connects academic knowledge and research networks to the city needs.

The Athenaeum Website analysis evaluated the following:

- (1) the use of the city and its various communities as an “urban laboratory” for academic research, engagement and knowledge transfer (research activities relevant to the needs of the city and the region and their communication);
- (2) the provision of facilities, expertise and research and learning programmes to support
 - services (such as health and medical services, welfare advisory, cultural exchange or support for schools and minority groups)
 - cultural foundation of the city and various cultural/ethnic groups
 - environmental sustainability
 - sporting development
- (3) HEI engagement in partnership with the community in the provision of such services.²

²Research activities of professors and researchers have been considered only if carried on within research groups or research centres. A database of research themes of the more than thousand researchers of the University of Catania is still not available.

In general, there is no explicit reference to the universities–city relationship as a result of an official commitment encoded within the tasks of the University or of the individual departments.

Although the University Website has recently established a column called *University in the city*, it mostly gives information regarding University events (conventions, shows, projects, cultural and didactic activities) and which can be of interest to the city (<http://www.agenda.unict.it/>).

Within the Websites of the departments, in the pages devoted to the research activities, we should look within the individual research or between research groups to discover the existence of activity that is somewhat linked to the solution of problems of the city or region. No indication of community engagement activities compares to the “Events pages” of the departments, nor is it easy to find information about University Museums, scattered in different Departments (Zoology, Palaeontology, Geology, Museum of Benedictines Monastery, Archaeology). The Museum of Science, opened in 2015, “offers a variety of ideas and opportunities: inside its structure a space for conferences, seminars and debates is provided; meanwhile exhibitions on science and technology and monographs of social interest are offered” (<http://www.cds.unict.it/en/structure>).

A positive exception is the Biological, Geological and Environmental Sciences Department, which defines itself as “not only a centre of scientific advances but also a place for the cultural promotion of naturalistic awareness as well as for the management of nature and territory resources”. The research and didactic activities are supported by several structures and museums: the Botanical Garden, the Herbarium, the Museum of Zoology, the Museum of Palaeontology, the Museum of Geology and the Butterflies House. All these “are not only exhibition spaces, but also places where scientific communication and exchange of ideas usually take place”. To this end, the Botanical Garden has developed programmes for schools (from primary to secondary), summer activities for children (aged 5–10), numerous exhibitions and cultural activities. It should be noted that the management of educational and cultural activities has been entrusted by 2014 to a private co-operative in partnership with the University (*Archimede Association*)³ then to *Officine Culturali* (Cultural laboratory), a cultural association that since 2015 deals with the organisation of the educational activities.⁴

Among the eighteen Departments listed below, only those for which it is possible to find some reference to community engagement are presented.

³<http://www.cooparchimede.it/GrestOrto.htm>.

⁴For more detailed information on *Officine Culturali*, see Section “Universities and Societal Tensions: The Place for Public Engagement” in this chapter.

Departments	Third mission activities	Activities update
Architecture and city planning	<i>LabPEAT</i> Laboratory for ecological and environmental regional planning http://www.labpeat.dau.unict.it/index.html	2006
Architecture	List of agreement with cities and provinces aimed to territorial planning, to region and city valorisation and to environmental conservation http://www.darc.unict.it/index.php/ita/Ricerca/Contratti-e-convenzioni	21.04.2010
Botany	Botany for schools http://attivitaortobotanico.unict.it/index.php/scuole-ed-educazione/ Activities http://attivitaortobotanico.unict.it/index.php/attivita/	Updated
Civil engineering	Local unit of the National Study Centre on city hydraulics http://www.csdu.it/	Updated
Physics	Regional resource Museum of ancient physics instruments http://www.dfa.unict.it/it/museo-degli-strumenti-antichi	2009
Industrial engineering	Biodiversity and Sustainable Development in the Strait of Sicily http://www.diim.unict.it/progetti/biodivalue/biodivalue.htm	Updated

For Research Centres and Service Centres inside the Athenaeum, connection with the territory is more evident, at least in their intentions. In almost all the home pages, the Centre's intentions are declared in order to act as resource for the local and regional authorities. Most of the news contained in the sites listed below is not updated. They do not always indicate the activities carried out.

Among the seventeen Research Centres only those listed below claim to have activities linked to the territory:

Research centres	Activities update
CEDOC—Documentation and Research Centre on Complex Organisations and Local Systems (http://www.cedoc.unict.it/portale/)	2009 (research activities) 2015 (news)
CRAM3RA—Research Centre for the Analysis, the Monitoring and Methodology for Environmental Risk Assessment (http://www3.unict.it/cram3ra/home.html)	2008 (teaching activities and conferences); 2014 (publications)
CUTGANA—University Centre for the Tutelage and Management of Natural Environments and Agro-ecosystems (http://www.cutgana.unict.it/)	Updated
GOT—The Interdisciplinary Research Centre for the Governance of the Local Development (http://www.got.unict.it/) established in 2006, thanks to the commitment of the Mayor and the City Council of Zafferana	2007

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Research centres	Activities update
Etnea (a small town in the Catania province), to promote “a study of local systems that include the institutions, the social and economic dynamics and the production process which form the basis of their Wealth”	
LAPOSS—Policies and Social Services Laboratory (http://www.lpss.unict.it/)	
PROGEO, Centre of geographical planning and research http://www.dsps.unict.it/Ricerca/Centri%20di%20Ricerca/ProGeo%20-%20Centro%20di%20Progettazione%20e%20Ricerche%20Geografiche	
Integrated Research Team “Territory, Develop and Environment”	No Website

As regards to the six Service Centres, the following third mission activities will be reported directly to the city⁵:

Service centres	Third mission activities	Activities update
CAPITT Centre for Continuing Education, Innovation and Technology Transfer (http://www.capitt.unict.it/)	Training courses or re-qualification programmes for working people Creation of spin-offs and patent licensing for the development of local region Validation of non-formal-informal learning	Updated
CINAP Disability Advisory Centre (http://www.cinap.unict.it/)	Creation of an e-learning platform on Learning disorders available for Catania, Siracusa, Ragusa e Caltanissetta school teachers (2013)	Updated
COF (Career Guidance and Vocational Centre)	School teachers training on linguistic and mathematical competences to prevent University student dropout	
CUS University Sport Centre http://www.unict.it/en/University-sport-centre-cus	Promotion and growth of sporting activities among youth Summer campus for children aged 4–13	Updated

⁵I chose to exclude the activities addressed to University staff and students, although designed to tackle some of the problems of the territory, and to analyse only those, which involve the city. This is the case of MOMACT (<http://www.momact.unict.it/>) that carries out activities for the sustainability, but aimed only to University staff and students: Pi.Per. service (Personalised plan of a home-University sustainable transport); “Pro.Bici” (bike-sharing system, now suspended due to lack of funds); Fiat Likes U`Project (car-sharing project for students).

A Learning Case

The field of cultural and environmental assets, as well as others, is involved in a process of growing interest from the public. Only in Sicily, it represents about 30% of the reasons for a tourist destination, standing for a valid international attractor. The city of Catania has increased the number of foreign tourists in 2013 by 10.3%, and the number of visitors to its main assets by 25–30% in the last three years (Greek–Roman theatre, Ursino Castle, Benedictines Monastery, Botanic Garden), thanks to public–private partnerships. In addition, the increased interest in the use of quality leisure for many users who are looking for events or cultural activities (workshops for adults, children’s creative workshops, theatre activities informal meetings and wine, concerts and film forums) represents a viable industry growth of so-called additional services in a sustainable economy.

To this end, a cultural association called *Officine Culturali* (Cultural Laboratory) was founded in 2009 by the commitment of researchers, students and alumni interested in the promotion of cultural heritage. Since 2010, in collaboration with the University of Catania, *Officine Culturali* is dealing with the enhancement of the Benedictines Monastery of Catania, one of the most significant cultural assets in southern Italy (UNESCO Heritage site since 2002).

Aim	Promotion, management and organisation of initiatives in art, cultural, social or environmental sectors
Mission	<ol style="list-style-type: none"> 1. Improvement of historical, cultural and architectural monastery knowledge, planning of routes accessible to the largest possible number of persons (other cultures, disabled people, older people) by: <ul style="list-style-type: none"> – guided tour and study, education and leisure activities – itineraries for children – laboratories for children and school students aimed to know how Benedictine monks worked, guided by experts in art, architecture, cultural heritage and science 2. Cultural events promotion, aimed to make the monastery a space of integration and aggregation for the community 3. Develop professionalism in the field of activity related to the management and exploitation of cultural heritage
Research and training activities	<p>In 2012, <i>Officine Culturali</i> took part of a survey about cultural tourism in Catania in partnership with the University and the City of Catania</p> <p>In 2012, the Region of Sicily financed a project titled “A shared treasure”, aimed at promoting the knowledge of the cultural heritage to school students. <i>Officine Culturali</i> took part to a project funded by national funds called Ri.Me.Di in partnership with local schools (2013–2014) aimed at reducing dropout students</p> <p>In 2013, MIUR (Ministry of University Research) funded the project “ArcheoScienza (ArcheologicalScience)” for the diffusion of the scientific culture relating to the study of archaeology (partnership</p>

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	<p>with Secondary Schools, CNR—National Centre of Research and University)</p> <p>In 2014, the Association has developed a “wayfinding University Workshop for signs of the Monastery”, with the aims of achieving new signs for the monastery, through a facilitated process of co-design with students. In partnership with the Reformatory of Catania, the Association allowed young adults to start a path of reintegration into society through involvement in cultural activities</p>
Environmental sustainability	<p>The Association has obtained the installation of a remote-control system of the electrical system of the Museum by the University of Catania and the partner Cofely Italia, which allows to turn on the lights of the environments only when necessary (2013)</p>
Services and events	<p>Management of the Archaeological Museum of the University of Catania (since 2011). The aim is to “communicate archaeological heritage to the local community”</p> <p>Management of University Botanical Garden (since 2015) as “recognition [from the University] of its role as mediator between scientific research and city community”</p> <p>Guided itineraries, info-point on-site, on-line and by phone</p> <p>Educational and scientific laboratories and workshops for adults</p> <p>Book launches, evening openings, stage shows</p> <p>A 5-month review called “FilmConcerto” (silent movies set to live music) in partnership with the Darshan Association</p> <p>Annual edition of “Il Monastero s’illumina di meno” (energy-saving activities), “MonaStelle” (diffusion of scientific culture), treasure hunts, setting up exhibitions, charity events and three editions of European Night of Museums</p> <p>Collaboration to:</p> <ul style="list-style-type: none"> • “FieraBio”, an organic local products’ market on each second Sunday of each month; • wine and food events; • “Other cultures in town”: a multicultural event; • FAI (Italian Environmental Fund) conference “From garden to landscape”
Partnership	<p>University of Catania</p> <p>City of Catania</p> <p>Catania private and public schools</p> <p>National Archaeological and Monuments Institute of Research</p> <p>Agreements with: local and national cultural associations, foundations and training agencies, FAI (Italian Environmental Fund), Italian touring club, National Association for Protection of Italian historical, cultural and environmental heritage, Catania Tourist guide Association and ICOM (International Council of Museums)</p>
Visitors	<p>48,000 visitors since 2010. In 2012–2013, almost 1500 elementary school students visited the Monastery. In 2014, 23,000 visitors (+9.2% than 2013)</p>
Staff	<p>Seven guides, one operator to Info-point/Welcome-desk, two responsible for Communication and Marketing, one operator to Museum Bookshop, one operator to Administrative office and</p>

(continued)

(continued)

	Didactics and two coordinators (management board). Seven associates are employed with national contract of cultural sector workers Volunteering staff
Communication	19,384 visitors to the Website <i>officineculturali.net</i> (2013) On TripAdvisor, the Monastery is in second place out of 32 tourist attractions in Catania, at eleventh place on 494 tourist attractions in Sicily <i>Officine Culturali</i> appeared altogether more than 170 times in the local newspapers (on average once a week), three times in magazines and two times in touristic books. It has provided advice and scientific logistics for the filming of documentaries on the Benedictine Monastery, for two troupes RAI and one troupe Sky Quoted in a national newspaper (<i>Il Sole 24 Ore</i> , 19 December 2015) as good practices in the economic promotion of cultural and historical resources
Other economic activities	<i>Officine Culturali</i> is aimed at institutions, both public and private, that want to outsource the exploitation project of their sites or monuments Museum Bookshop (<i>Monastore</i>), hosting local crafts and publishers

By analysing the activities of the Association, we can easily understand how *Officine Culturali* fully and consciously contributes to the realisation of the third mission and community engagement of the University, with the aim to conduct an increasingly important role in achieving economic growth and social progress, as stated according to the definition of the “European Indicators and Ranking Methodology for University Third Mission” (E3M project, <http://e3mproject.eu/index.html>).

Officine Culturali, through the enhancement of cultural resources of the city, has managed to create a system of collaboration and communication with the city, covering the use of the historical, artistic and archaeological heritage through activities that encourage community participation. These activities are related to research with different stakeholders (schools, local associations, municipality), to education (lifelong learning, continuing education, professional training) and community engagement (community programmes encompassing the arts and culture). These assets, if properly organised and communicated, can become extraordinary tools to understand the role of the University in its broader regional context, as well as a path of innovation and of concrete social inclusion.

University of Catania and the City: Could They Learn Together?

The contribution that a University can offer to the creation of a learning city is largely determined by the connection between academic knowledge and the region/city “through an extensive and dense network of persistent external

relations” (Vaessen and van der Velde 2003: 90). In the case of the University of Catania, the weak existence of links and the uncertain intentionality of these links with the city characterise this relationship. Without these links, and without the awareness of the role played by the University in community development, academic information, knowledge and values cannot flow into the local region and the city cannot benefit from University support.

These two short sections have highlighted that city or regional engagement is not an inherent component of the higher education system in Catania, at least for what emerges from the site of the University. This does not mean that all city engagement is blocked. Anyway, such kind of initiatives are not embedded into ongoing academic programmes and, when they are, as in the case of *Officine Culturali*, the achievement is the outcome of the partnership that the University has established with associations present in the territory. This example of closer engagement shows how it is possible to reach positive results for both of them and how partnerships can provide extensive cultural facilities and activities, increasing the participation and take-up within the community. In addition, economic benefits are not to be neglected, since long-term partnerships can help the economy to grow and bring income to the universities and the city.⁶

Certainly, there are several reasons to try to explain why University–city partnerships are not always visible from an HEI institution perspective:

- given that HEI-community engagement is not always regarded as important within universities in Italy, academics collaborating with the city underestimate giving information about these activities (*cultural underestimation*);
- because European HEI-community engagement has been relatively recently developed, promoted and regarded as something desirable, accountability systems on them are also incipient. There is no (explicit) agreement on standard indicators for evaluating it yet, as there is for evaluating research activities, for instance (*accountability underestimation*);
- the reward system of academics and lecturers is largely based on the traditional academic criteria in terms of referred publications, competitive grants brought in from research councils, lecturer’s workload and responsibilities in teaching activities. The criteria largely do not take into account engagement with non-academic communities (*career underestimation*);

⁶In the program of the Rector elected in May 2013, as regards the relationship between universities and the local territory, we read: “A strategy of concentric diversification is needed, whose aim should be ... an active role played by University as a place of cultural promotion and construction of critical knowledge in the territory, while collaborating with other institutions... I believe that, in this context, the priority value should be to commit oneself to action, together with the public and private institutions of the town, to become a “cultural system”, even though within the limits of available resources. In addition, cultural initiatives-both the ones taken by the Athenaeum and the ones it is involved in-should be enhanced, so as to promote culture and the creativity of young people in all its forms.

- almost all types of third mission activities do not involve flow of funding. This means that Departments are less likely to be involved in such kind of activities (*economic underestimation*);
- informal linkages between individual academics and enterprises, local and regional authorities, schools, etc., involving extra payments or not, are frequent. These types of interactions may be invisible and difficult to assess (*informal financial underestimation*).

Due to their complex structure, involving different interests and stakeholders, third mission activities are difficult to identify and to follow at universities, if they are not the outcome of a formal engagement. Furthermore, “some third mission activities are carried out outside the University system—either informally or through department-level arrangements that are not necessarily recorded by central University management. Such informal and invisible activities are, therefore, hard to track” (Molas-Gallart et al. 2002: vii). If the aim of third mission activities is to encourage engagement outside academia, the type of activities that are carried out by academics should be positively stimulated and evaluated insofar the performance of research and teaching activities: an attempt at quantifying these activities may be translated into more intense efforts to monitor and assess individual extra-curricular work (Jongbloed et al. 2008).

The analysis indicates that much of this piecemeal activity is undertaken by Service Centres, while Research Centres are not able to show a concrete engagement with the region, possibly in spite of the existing dominant drivers for academic work, and not generally supported or coordinated at the institutional level in a way that may enhance its overall impact for the city. Furthermore, the intellectual resources that academia possibly offers are not mobilised to play a leading developmental role. Due also to scarcity of local or national funds, the societal engagement remains voluntary or has become increasingly marginalised.

This scenario suggests that for extensive engagement on the part of HEIs (and not just small decentralised groups of academics or isolated departments), strong drivers both internal and external to the higher education system are needed. So, while some departments or centres of University are involved in different projects, which have social impact, these are often episodic, so the wider and lasting benefits on the city appear to be relatively limited. Hence, in the absence of these strong internal and external drivers, “the decentralised or loosely-coupled nature of universities...works against the institution-wide response that is needed to help address large-scale (and interdisciplinary) societal problems and challenges” (Goddard and Vallance 2013: 64).

Communication between scientific specialists and the city is often absent or inadequate. This requires a much clearer communication strategy based on structured dialogues (such as conferences, open-door activities, discussion forums) with citizens and with local/regional stakeholders, including formal and non-formal education agencies and business. Such interaction with the outside world—appropriately documented on the University Website—will gradually make universities’ activities more relevant to the needs of citizens and society at large. It will

help universities to promote their different activities and to convince society, governments and the private sector that they are worth investing on (www.e3mproject.eu/docs/Three-dim-third-mission-act.pdf). Anyway, all communication activities carried out by the University are weak, as in the case of the failure of advertising of the University museum heritage, but also of the research activities, whose documentation on the sites is ineffective or non-existent.

The crucial importance of the presence of a University in a region for stimulating learning processes is undeniable, but insights and approaches on this topic agree on the continuity of links between the city (and the region) and the University and the existence of links between the University and the sociocultural environment too. Further research on this topic is required, aimed at recognising more effective ways to communicate and to create partnerships, networks and collaboration as an important medium for community learning. Building and supporting the development of a collective learning culture is dependent on the mobilisation of an effective partnership management. This one is clearly associated with increased research on a community issue, problem, or need (McNall et al. 2009) and that is able to create the necessary partnership to allow the academic knowledge and know-how, the sociocultural environment and the professional, social and economic system which could enter the city.

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Chapter 15

Overcoming Cultural Resistance to City-Regionalism: What Role for Universities?

Stevie Upton

Abstract South-east Wales is among the many regions currently seeking the benefits of city-regional governance. On a negative front, it is acknowledged that the adverse effects of urbanisation have a regional dimension that must be overcome. From a more positive standpoint, it is hoped that enhanced regional cooperation will enable the region to accrue the economic advantages of agglomeration, and in the process improve social equity. At present, structural and cultural barriers stand in the way of these benefits for the emergent Cardiff city-region. These barriers have thus far proved intractable, but might they yet be overcome? New regionalist theorists have proposed that non-state actors can play an important part in a region's governance, and this chapter argues that the current situation in south-east Wales lends credence to that importance. It then explores the potential for one sizeable non-state actor, the university, to contribute to improved city-regional governance. The chapter concludes by examining the opportunities and challenges facing the universities of south-east Wales if they are to make such a contribution.

Introduction

The city-region represents a scale of ongoing interest for policy-makers seeking to maximise the effectiveness of social and economic development policies. As a 2011 special issue of *International Planning Studies* made plain, city-regional planning and policy implementation have adherents worldwide (Janssen-Jansen and Hutton 2011), and the recent formation of four new “combined authorities” in England suggests no slowing down in the development of new city-regional partnerships

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(Sandford 2014). While formal arrangements such as the combined authorities rely heavily on local government participation, however, the “new regionalist” perspective points to important roles for non-state actors. Specifically, some new regionalists have argued that cooperative *governance* is better suited to addressing urban expansion than are the existing formal mechanisms of *government* (Savitch and Vogel 2000). As major institutions within any city or region, universities have significant potential to contribute to regional development (Goddard 2009). Meanwhile, to unlock funding, in the case of the UK they are also now being expected to address their “impact” on non-academic communities (HEFCE [Higher Education Funding Council for England] et al. 2011; Research Councils UK 2014).

This is not the first time that a connection between the city-region and the university has been made (see, for example, Goddard 2005; Powell 2007). However, the growing imperative for universities to demonstrate engagement beyond the academy makes this an opportune moment to more explicitly draw together current thinking on city-region governance with that on the function and organisation of higher education. What, though, are the realistic prospects for universities to contribute to enhanced regional governance? This chapter addresses that question. In doing so it draws on an illustrative case, that of south-east Wales in the UK—a region actively pursuing a city-region agenda, but with serious structural and cultural barriers to overcome in doing so. It is suggested that these barriers create a particular imperative for a non-state actor to take a role in the region.

The chapter proceeds in two parts. Firstly, it explores efforts to develop a functioning city-region in south-east Wales, a region, it will be argued, that is culturally divided, both socially and politically. Drawing on an (all too brief) overview of the theory and practice of city-regional working for context, it describes the recent history of the city-region debate in south-east Wales, and the barriers that militate against its translation into action. These barriers—part structural, part cultural—have proved intractable. But they are not unique. In this sense, the Cardiff city-region is a lens through which to view a broader question: in the light of the new regionalist perspective’s observation that non-state actors have an important part to play in a region’s governance, what role is there for such actors in promoting regional working, and hence development?

Secondly, therefore, this paper investigates the potential role of one non-state actor—the university. Goddard has argued that universities have “a civic duty to engage with wider society” (2009, p. 4), and there are good reasons why universities might be especially well placed to contribute to the effective governance of their city-regions. While the vision is a compelling one, however, its realisation is complicated by divided academic loyalties (Hearn and Holdsworth 2002) and by the loosely coupled nature of the university’s organisational structure (Weick 1976). The chapter concludes that further research is needed on how the university should best be structured to support regional engagement, but also offers suggestions for immediate action.

City-Regionalism in Theory

Thirty years ago, Davies (1983) used the phrase “the Cardiff city-region” to identify the area surrounding, but in many ways distinct from, the city of Cardiff. Today, the phrase has been adopted to emphasise not the separateness of planning needs in these two places, but rather the interconnectedness. This is not to say that the city-region is ever a particularly clearly delineated area. It is, as Harding (2007: 451) has put it, a place of “ambiguity, fuzziness and overlapping boundaries”. We identify city-regions, he argues, not to facilitate neat solutions to service delivery problems, but rather to address the difficult questions of distribution, and distributional inequality, that can stifle development. Even the more successful city-regions, however, cannot ensure equal growth for all areas. The “Manchester miracle”, for example, although responsible for an 11.3% net increase in employment between 1981 and 2006, still resulted in striking distinctions in fortune between the north and south of the region, and between individuals in the inner metropolitan area and elsewhere (Harding et al. 2010).

Nevertheless, a greater degree of regional cooperation is now widely held to be essential if cities are to hold their own in an urbanising and globalising world. Thus, Overman and Rice (2008, p. 4) identify the existence of “agglomeration economies”, characterised by the “self-reinforcing benefits” of spatial concentration of activity. These benefits are posited as including economies of scale, the greater efficiency of large markets over smaller ones and knowledge spillovers between proximate firms. Amin and Thrift’s (1995) discussion of “institutional thickness” moves beyond identification of purely economic factors to acknowledge the significance of social and cultural factors to successful agglomerations. The two key elements of institutional thickness—a plethora of diverse institutions, and high levels of interaction between them—contribute to the establishment of trust relations, stimulate entrepreneurship and otherwise foster the conditions that tend to generate economic success. The role of non-business actors in the institutional milieu is an important one, to which we will return.

Alongside strong institutional presence, another factor theorised as contributing to a city’s fortunes is population size. The 2007 State of European Cities Report found that the largest cities (with over one million inhabitants) were the most likely to act as “strong economic engines”, with per capita GDP decreasing with city size. On average, only cities with populations above 250,000 outperformed their national average per capita GDP, and only those above 500,000 outperformed the EU27 average. Smaller cities, the report observed, “tend to be more dependent on developments at the regional level and are therefore handicapped when located within lagging regions” (ECOTEC 2007: 48). Consequently, in such cases, the imperative on the city to work on a regional basis is heightened. (It should, though, be noted that the line of causality running from urbanisation to agglomeration, as opposed to vice versa, has been called into question, for discussion of which see Harding 2007: 447.)

City-Regionalism in Practice

Those seeking to improve city-regional working are now able to turn to a number of examples of relatively more successful city-regions for inspiration. The final report of the Welsh City Regions Task and Finish Group (2012), for instance, named cities including Bilbao, Lille, Manchester, Stuttgart, Toronto and Vancouver among its sources of good practice. While Manchester's focus on driving investment was considered worthy of note, in the other European cities improvements to connectivity were highlighted. In Canada, changes in each city's governance approach were identified as both cause and effect of improved regional partnership. If these cases collectively teach us one thing, it is that one size does not fit all. The distinct political, social and economic contexts, at the local/regional level and beyond, have inevitably resulted in quite different approaches in each city-region.

One particularly prominent distinguishing factor between city-regions is the structure of governance arrangements in place within them. In the Stuttgart city-region, for example, a highly formalised regional governance system has been instituted. As one of Germany's sixteen Länder, Baden-Württemberg requires its regions to produce legally binding land-use and building plans (Frank and Morgan 2012). In 1994, the Stuttgart region moved beyond this requirement, establishing a new organisation, the Verband Region Stuttgart (VRS), for the purpose of improving competitiveness and efficiency. The decision-making body of this institution is a ninety-member directly elected regional assembly. Its role includes distribution of a budget of approximately €300 million, which is spent predominantly on regional transport, economic development and place marketing initiatives (Kiwitt 2012). Regional governance, weak elsewhere in Germany, thus plays an important part in the planning and development process.

In the Manchester city-region, meanwhile, a significant level of institutionalisation has only emerged over the past decade, after a prolonged period (of some 30 years) of voluntary cooperation (Harding et al. 2010). Partnership has progressed from loose coalitions, through the establishment of "functional commissions" for seven key areas including economic development, health and the environment, to a new, formal agreement on delegation of powers to the regional level. This agreement, made in 2008, devolves responsibilities to the functional commissions, overseen by an executive board comprising the region's ten local authority political leaders. AGMA, the Association of Greater Manchester Authorities, within whose purview these commissions lie, has hence achieved a degree of political power far beyond that held at its establishment in the 1970s.

In a recent volume on governance in Canadian city-regions, Bradford and Bramwell (2014: 16–18) have identified three types of urban governance. The durability of Stuttgart's VRS testifies to the existence of *institutionalised collaboration* in the region, whereas, until recent developments, Manchester city-region was characterised by *sector networks* that supported strong activity on a principally sector-by-sector basis. The least formalised mode of governance identified in the Canadian context is that of *project partnerships*, which exist to drive through discrete

projects. With the exception of some weak sector-based activity, governance in the Cardiff city-region has not, to date, been markedly developed in any of these forms. As set out in the Section “[Barriers to Regional Working](#)”, the barriers to development of strong regional governance here have been part structural, part cultural.

The Nascent Cardiff City-Region

The city of Cardiff, capital of Wales, has a population of approximately 350,000. When the surrounding local authorities of south-east Wales, for which Cardiff represents the major centre, are taken into account, this figure rises to some 1.4 million. The region is one with sharp social and economic disparities and includes local authority areas with some of the UK’s most severe socio-economic deprivation (Eurostat 2015; StatsWales n.d.; Office for National Statistics 2013):

- The latest EU data release on regional GDP per capita places West Wales and the Valleys bottom of the UK rankings, one of only three regions in the UK to fall below the EU’s benchmark of 75% of the EU28 average.
- Economic inactivity rates—which in the years 2005–2010 averaged 1 in 5 of the working-age population in the UK, and slightly below 1 in 4 across Wales—consistently exceeded 1 in 4 in the South Wales Valleys and rose as high as 1 in 3. While more recently it has narrowed, a gap remains.
- The proportion of Welsh working-age adults with no qualifications is at its highest in Blaenau Gwent and Merthyr Tydfil. By contrast, the neighbouring local authorities of Cardiff, Vale of Glamorgan and Monmouthshire have the nation’s highest proportions of adults with higher level specialist qualifications.
- According to the 2011 census figures for England and Wales, the South Wales Valleys include four of the ten local authorities with the lowest “good” general health.
- Merthyr Tydfil’s estimated incidence rate of alcohol misuse in 2012–2013 was 2.1 times the all-Wales average; the next highest incidence rate, at nearly 1.4 times the all-Wales average, was in Rhondda Cynon Taf.

Responsible for this diverse population are ten local government authorities, the smallest of which (Merthyr Tydfil) is accountable to just 59,000 people (Fig. 15.1). The interconnectedness of these authorities is indisputable. Looking at commuting patterns for instance, we see that one-third of the inhabitants of Merthyr Tydfil, at the northern extreme of south-east Wales, work outside the local authority area—including some 11% who travel the twenty-four miles south to Cardiff. One in six of the Blaenau Gwent workforce, meanwhile, works in one of the other Valleys authority areas (Tanner 2012). And over one-third of workers in Cardiff travel from one of the nine other authority areas (Waters 2012). Evidently, this is only one part of the picture. Tanner finds that for every one Blaenau Gwent resident commuting into the other Valleys, three work within Blaenau Gwent. This, though, perhaps

only serves to reinforce Harding's (2007) point that city-regions are at best ambiguous notions. It was these commuting flows that prompted a description of south-east Wales as "an interdependent but unplanned urban network" (Wales Spatial Plan, quoted in Morgan 2006: 17).

On both social (equity) and economic (infrastructure) grounds, then, the case might reasonably be made for developing city-regional planning. To date, the extent of regional collaboration has been limited. Forums established to encourage a more strategic approach by the region's ten local authorities have included the South East Wales Economic Forum (SEWEF) and the South East Wales Transport Alliance (SEWTA),¹ the Strategic Planning Group (SEWSPG) and the Regional Partnership Board (SEWRPB). Narrow remit, limited powers and lack of resources have variously served to limit the extent of their influence.

Recognising the lack of comprehensive cross-authority activity, and the limitations being placed on capacity to address the region's social and economic problems, in 2011, the Welsh Government established a task and finish group "to consider the evidence for city regions as economic drivers and to identify potential city regions in Wales" (City Regions Task and Finish Group 2012, p. 1). The group having recommended that south-east Wales be recognised as a city-region, a board was formed in November 2013 to advise on a new "Cardiff Capital Region". The advisory board set out its recommendations for the strategic direction of the Capital Region in February 2015 (Cardiff Capital Region Board 2015), and in December 2015, the Welsh Government duly created a transition board to "help shape the Region during this next phase of development" (Hart 2015).

If developments have thus far proved stronger on vision than on its implementation, there are perhaps signs of a coming change. The prospect of securing UK Treasury City Deal funding has seemingly now spurred the ten local authorities into collective action. In March 2016 a City Deal was signed by the UK and Welsh Governments and the leaders of the region's ten local authorities, unlocking a total of £1.28bn, to be used on infrastructure projects selected for their ability to contribute to economic growth.

Barriers to Regional Working

Notwithstanding these developments, the regional planning challenge remains a substantial one. Cardiff Council has already recognised that "the level of maturity of existing partnership/governance arrangements" has been a "key factor" in previous City Deal decisions (Cardiff Council 2015: 2). And, as examples like Stuttgart and Manchester demonstrate, the role played by appropriate institutions and statutory

¹SEWEF was dissolved in 2013, SEWTA in 2014.

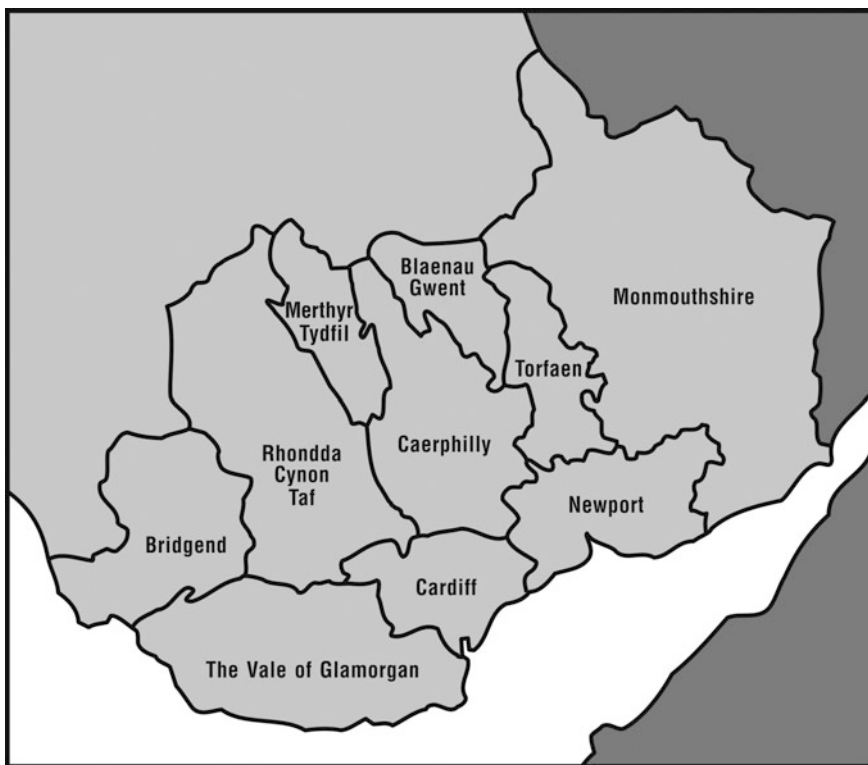


Fig. 15.1 The local authorities of south-east Wales

powers in a city-region should not be underestimated (Upton 2012). In comparison with these, region-wide planning in the Cardiff city-region has been seriously underdeveloped.

Structural Barriers

The extent of the structural barriers to city-regional working is nowhere more apparent than in the effect of the local development planning (LDP) process. Each Welsh local authority is required by law to set out its land-use policy in a local development plan. This must demonstrate how the authority will respond to future need as forecast by a suitable “up-to-date information base” (Welsh Assembly Government 2005: 22). Although the Government requires local authorities to “consider issues which affect more than one authority” (2005, p. 8), it is clear that the production of ten separate LDPs cannot result in an effective regional approach. In a 2011 report prepared for Cardiff Council, Roger Tym and Partners found that,

during statutory inspection of the region's LDPs, no inspector considered "what effect land releases by the adjoining valley authorities would have on the likelihood that [a plan's proposed] land [releases] would be taken up" (Roger Tym and Partners 2011: 50). The report concluded that the LDPs are,

...likely to lead to a significant oversupply of employment land, as well as an oversupply of housing land. The consequent risks are the unnecessary development of greenfield land, counterproductive competition between local authority areas, added uncertainty and higher development risks in already weak property markets ... and, overall, the likelihood of less growth and beneficial development in the region than would otherwise be achievable (2011: 96).

A further complication in the region is the wide time span over which the LDP adoption process has operated. By early 2016, eight plans had been formally adopted by their respective councils, the first having been in place since November 2010, the most recent only since January 2015. The Vale of Glamorgan's remained on "deposit", awaiting examination by a Welsh Government-appointed inspector prior to adoption, while Cardiff's awaited adoption, having been passed by its inspector in January 2016. With the region's local authorities having spent years at disparate stages in the LDP process, effective cross-authority collaboration on the siting of future developments has been made still less likely.

This is not an issue confined to land allocation. Chapman (2011), for instance, found business representatives and council economic development officers alike willing to testify to the ineffectiveness of existing regional bodies. They lamented the lack of statutory powers for SEWEF, describing it as merely a "talking shop", and failed to award even the relatively more powerful SEWTA any real accolades. Recognising such limitations, both the Tym report and the Welsh Government-commissioned City Regions Task and Finish Group concluded that a city-region strategic planning tier was now necessary. Unfortunately, much as institutional thickness cannot be manufactured in any straightforward way (Amin and Thrift 1995), so creating new governance structures will not alone ensure improved regional collaboration. The barriers to a functioning city-region in south-east Wales *are* part structural, certainly, but they are also in large measure cultural.

Cultural Barriers

For all that Cardiff owes its modern-day importance to the nineteenth century industrial powerhouse that was the Valleys (Gore et al. 2007), there remains a cultural distance between the city and its hinterland. This is compounded by a default position of competition, not collaboration, between the Valleys authorities. Indeed, the region has been characterised as being marked by "historical suspicion

and long-standing rivalries between the coalfield and Cardiff, as well as between local authorities in the ... Valleys themselves” (Gore et al. 2007: 63; see also Morgan 2014). Cardiff has done little to lessen the Valleys authorities’ suspicion of its motives. Throughout the early years of the new millennium, as the Welsh Government began to develop its own thinking on city-regionalism (see, for example, Welsh Assembly Government 2004), Cardiff responded in a way guaranteed to rile its neighbours. In a 2005 policy paper, for instance, it described how the regional perspective could be used to further “the international marketing of *Cardiff* as a business location” (quoted in Morgan 2006: 19, emphasis added).

This political enmity also has roots in the social relations between the Valleys and the city. For many Valleys residents, Cardiff is a foreign place. Gore et al.’s (2007) research for the Joseph Rowntree Foundation (JRF) included interviews with twenty-five respondents from the Central Valleys, selected for their status as active job seekers. Of these, two had *never* been to Cardiff. Others had not visited the city for many years. This is not simply a matter of physical inaccessibility for the Valleys’ disadvantaged residents. The gulf is also psychological: the JRF study reported a firm sense of *local* identity, often associated with the Valleys’ industrial past, along with highly localised social and support networks.

The impact on the region’s ability to develop a coordinated approach to planning and development issues is well documented. The City Regions Task and Finish Group acknowledged that “Wales has long suffered from an ‘us’ and ‘them’ approach: ‘us’ versus England; South Wales Valleys versus Cardiff; Cardiff versus Swansea; north versus south” (2012: 53). It further noted the similarities between the situation in south-east Wales and the experience of Birmingham and the Black Country, where lack of shared vision and mutual mistrust had led to the failure of a city-region approach. The upshot of an inability to construct effective partnerships is “tribalism” (Chapman 2011, appendix 4:5), “parochialism” (Morgan, quoted in City Regions Task and Finish Group 2012, p. 51) and a zero-sum mindset that regards one authority’s gain not as a win for the region, but as a loss for the neighbouring authorities (Upton 2012). Lest suspicion remains about the extent of this parochialism, witness the Welsh Government’s initial decision (since overturned) to refer not to the “Cardiff” city-region, but to the “South East Wales” city-region (Hart 2012). This ran counter to the Task and Finish Group’s recommendation that the former terminology be adopted on the grounds that it would prove more attractive to external investors. It also stood in marked contrast to references to the Swansea Bay city-region, the nation’s other proposed city-region. Appeasing those critical of Cardiff’s dominance of its region was, for a time, placed ahead of any potential for greater “brand awareness” beyond Wales.

The Roger Tym report, meanwhile, found that even where willingness to cooperate existed (as among members of the South East Wales Strategic Planning Group), “consensus was everything, and the lowest common denominator (in favour of the least precise, most ‘flexible’, least contentious options) tended to be the only means of achieving it” (2011: 32). This consensus is not that deriving from

Grabher's (1993) political lock-in. Rather it arises from an inability to communicate honestly and accept constructive challenge, a core characteristic of a low-trust environment (Cooke and Morgan 1998).

Towards Improved Partnership

If trust is a by-product of success (Cooke and Morgan 1998), then the process of building it is a long-term one. As both the Manchester and Stuttgart examples demonstrate, the success of city-regional working has been decades in the making (Harding et al. 2010; Frank and Morgan 2012). Moreover, Manchester was able to build on existing regional relationships, remnants of the brief period, in the 1970s–80s, when Greater Manchester had its own directly elected metropolitan council. South-east Wales, by contrast, failed to maintain effective collaboration following the 1974 replacement of Glamorgan County Council (which had stretched from Cardiff to Merthyr Tydfil in the north and beyond Swansea in the west) with Mid Glamorgan and South Glamorgan County Councils (which effectively split Cardiff from the Valleys) (Gore et al. 2007). All this being the case, what are the prospects for the Cardiff city-region in the immediate future?

Formal institutions of government evidently play an important part in city and city-region development. They provide the impetus, and critical funding, for key infrastructure projects and serve to mitigate the negative effects of growth through social and environmental programmes (Kübler and Heinelt 2005a). Nevertheless, particularly where social capital (“norms and networks of trust and reciprocity”, Cooke and Morgan 1998: 7) is lacking in the political realm, governance arrangements benefit from additional input from non-state actors. Here, the new regionalist perspective provides an explanation of (and agenda for (Savitch and Vogel 2000)) metropolitan governance that ascribes central importance to non-state agencies. Rather than proposing a single “ideal” governance structure, it identifies the prospect of multiple possible arrangements, arising from different combinations of actors, actor behaviours and incentives to cooperate (Kübler and Heinelt 2005b). And it regards the cooperative and voluntary model of “horizontal and flexible” governance as better suited to addressing urban expansion than is “vertical and firmly institutionalised” government (Savitch and Vogel 2000: 161).

This is not to suggest that there can be a straightforward insertion of non-state actors into the governance process. Policy formation can, after all, be regarded (Ozga and Jones 2006) as an ongoing interplay between those policies that tend to promote transnational agendas, and those, over which local agencies might reasonably anticipate being able to exert influence, that explicitly target “local” priorities. Yet even in this more narrowly defined sphere of influence, a problematic lack of institutional thickness is apparent in south-east Wales. It might be impossible to isolate the exact effect on economic growth of regional collaborative arrangements (Frank and Morgan 2012), but their absence would, per Amin and Thrift (1995), seem likely to hinder city-regional development. Moreover, mutual

suspicion between local authorities might be regarded as compounding this absence. As Cox and Wood (1997: 66) have stated,

Cooperation in the face of globalization may be important but competition can prevent the emergence of the necessary organizational forms or compromise them once they are in existence.

Even as the region's local authorities work to implement major new infrastructure projects, therefore, a historical lack of collaborative experience—the legacy of structural and cultural barriers that have themselves not been fully resolved—has created conditions that might yet derail those plans. Within the context of new regionalism's claims for the value of a broad-based governance approach, and in view of local government's past failures to establish lasting cooperative ties, could other, non-government actors hold the key to developing the Cardiff city-region?

The Civic University

It is a serious disadvantage that, particularly in a region beset by socio-economic difficulties, civil society can struggle to work strategically towards common goals. As Humphrey and Shaw (2004: 2194) have observed in relation to arrangements in the north-east of England, “lack of capacity and resources obviously impacts on the extent to which smaller, independent organisations are able to engage with the regional agenda and be considered as potential partners”. However, one institution with the potential resources and capacity to make a difference in the region is the university.

Goddard (2009: 6) has argued that “now is the time to reinvent the notion of the broadly based civic university...”. Although their foundation in the nineteenth century was precisely in order to “meet the needs of growing cities”, we have, he argues, “lost sight of [civic universities'] key purposes”. Now, however, deep cuts in local government budgets have intensified the focus on universities' role in their regions (Goddard and Tewdwr-Jones 2015). Meanwhile, as the distribution of higher education funding becomes increasingly tied to academics' engagement with non-academic audiences, a new imperative for universities to seek out such roles has arisen.² City-regional engagement is not, though, simply an imperative: it is an opportunity. As Goddard and Tewdwr-Jones (2015: 2) point out, it is an opportunity for academics to contribute to the “public good” and for the places with which they work to address “deep social and economic challenges”.

²The UK's major research grant awarding bodies, the Research Councils, have for some years required funding applicants to describe their anticipated “pathways to impact”. “Impact” also constitutes one element of the higher education funding councils' latest assessment of research quality, the Research Excellence Framework (REF), on the outcomes of which block grant allocations are awarded.

One sphere of potential university influence is that of city-regional governance. Writing about the north-east of England, following central government's abolition of a regional governance structure in favour of more local arrangements, Tewdwr-Jones et al. (2015: 29) have suggested that,

It is into this void in strategic planning and governance that universities have the potential to fulfil a role of civic universities and provide the necessary space [for] deliberations and debates to inform such strategic planning.

And indeed evidence from elsewhere suggests that this function can be a successful one. Arbo and Benneworth (2007: 47–48) report that, in Twente in the Netherlands,

...factional disputes between municipal authorities have hindered the development of a meso-layer of city-regional governance. However the authorities have latched onto developments coming out of the university as developments of regional significance to which they can subscribe, helping to populate the Netwerkstad Twente organisation with projects of real regional significance....

The notion of a civically engaged university is not, as Goddard (2009) notes, a novel one. Not only Britain's nineteenth century urban higher education institutions, but also the land-grant universities of the USA were founded with an explicit mission of "service to community and nation" (Kellogg Commission 2001: 13). As in the UK, however, so the land-grant mission has narrowed over time. Academics in today's land-grant universities are actively encouraged to engage in research, while "work engaging citizens in participatory and democratic ways does not warrant the same support" (Shaffer 2012: 62). There remain academics committed to true engagement with neighbouring communities. Yet these activities often remain piecemeal, existing within faculty silos, reliant on committed individuals, and with "no genuine vision for implementation, coordination or strategic planning" (Kronick et al. 2011: 214).

While there are compelling reasons to pursue a role for universities in city-regional governance, therefore, there are also questions about how this might be effected that require resolution.

A Viable Proposition?

The barriers to a university's engagement "as a whole with its surroundings, not piecemeal" (Goddard 2009, p. 5) occur in part at the organisational level and in part at the level of individual academics. Among academics, multiple, potentially conflicting, loyalties demand attention. Hearn and Holdsworth (2002) have identified six loyalties—institutional, departmental, disciplinary, extramural (towards funders), professional (to career advancement) and personal (to individually held personal and social values). While these "may overlap substantially in optimal conditions" (Hearn and Holdsworth 2002: 132), in practice they are unlikely to hold equal sway. Thus, for example, to the extent that an institutional agenda is

international in focus, a personal or departmental commitment to local issues might find itself subjugated to institutional goals. Academics' contribution to particular ends will only be optimised if the incentives to do so are at least as strong as those that draw them towards fulfilling other commitments. The power of an incentive to generate a particular action therefore cannot be understood in isolation, but only in relation to the full set of incentives—both carrots and sticks—to which academics are exposed.

The ability of a university to direct academics' work towards improved city-regional governance is, however, constrained by the nature of its organisational structure. Since Weick's (1976) application of the concept to the education field, it has become commonplace to characterise universities as "loosely coupled" organisations—and with good reason. Loose coupling defines a relationship in which the parts of an organisation are connected and responsive to one another, but remain in some measure separate and independent. This relationship is clearly observable in universities, where collaborative, interdisciplinary research is acknowledged as a fertile source of new knowledge, but where "isolated, individualised" research is understood as a key contributor to creation of "valid" knowledge (see Smerek 2010: 402–406 for discussion). Further credence is lent to the notion of universities as loosely coupled by Silver's finding of an "absence of shared norms", and a failure to identify a university-wide culture, among academics in five study institutions (Smerek 2010: 403).

The relative independence of units within a university means that institutional ability to direct activity is limited. But altering behaviours cannot be a matter of tightening the coupling and mandating change, since to do so would be to jeopardise the effectiveness of engagement efforts. Among the strengths of loose coupling, Weick (1976) argues that academics' freedom to think and act independently from one another makes the university particularly sensitive to (the diverse needs of) its surrounding environment—far more so than if actions were directed by a small number of people. This independence also facilitates flexibility of structure and approach, allowing the university to persist in the face of external pressures, as well as to develop a range of mechanisms for addressing city-regional agendas. It is clear, though, that optimising the degree of coupling is far from straightforward: too tight a coupling will tend to limit responsiveness, but overly loose coupling will prevent beneficial collaborations from developing.

In spite of the potential opportunity cost of operating as a loosely coupled system, there is good reason to suppose it better for universities to err on this side than the other. In an organisation whose success is founded on its members' capacity for original thought, professional autonomy is especially prized. Given that the loosely coupled system provides particular scope for "self-determination" (Weick 1976: 7), it would appear to be more conducive to academics' motivation to engage than a closely directed approach.

Even to the extent that university administrators can and should influence individual academics, there is, of course, still no guarantee that local governance will be a priority issue. Just as academics experience divided loyalties, so too do universities. Among these, extramural loyalty can prove particularly fierce.

Funding body incentives have a powerful effect not only on individual academics but equally, since universities are judged on the collective performance of their academics, at the administration level. And while funding bodies are increasingly turning their attention towards research “impact”, this impact can be achieved at any scale. In no way does its pursuit imply alignment with city-regional needs and interests. Thus, in a context of seemingly unlimited issues in which universities could involve themselves, but also of limited resources to do so, university leaders’ concern for a regional agenda must compete with extramural concerns that might be in only partial alignment.

Coordination, Not Control

This is not to imply that universities can do nothing but adopt a *laissez-faire* attitude towards their members’ engagement in the city-region. Precisely because the elements of a university *are* coupled, there must be some role for coordination at the whole-university level. Reflecting on their own review of the role of universities in regions, Arbo and Benneworth (2007) pose two matters for further research that address this topic. First, they contend that, while universities have had past successes in cross-sectoral working, suggesting a new organisational model in which “universities become system integrators with the capacity to deliver large public interest projects” is a rather different proposition. Consequently,

More thought and reflection is needed on how to retain a tight institutional focus on core missions, whilst, nevertheless, harnessing HEIs’ undoubted capacities to deliver social value and play a transformatory role within society (Arbo and Benneworth 2007: 59).

Secondly, they question the extent to which regional engagement should be subject to direction at the university level, asking:

How can institutional management allow universities to engage on a broad front, letting “one thousand flowers bloom”, whilst encouraging a tighter strategic management of regional connections to ensure their fit with national policy instruments and external investors’ desires? (Arbo and Benneworth 2007: 59).

These remain important questions. As pressures on academics to engage with external constituencies increase—and if university managers, responding to those pressures, are to develop support mechanisms that help, not hinder, engagement—far more detailed research along these lines is needed. Yet even in advance of a clearer picture being drawn on these fronts, and perhaps fortuitously for the prospects of the Cardiff Capital Region, there are immediate actions that universities can take to support academics’ engagement with the city-region.

The first is to *build connections* into the city-region. In its shared support units, the university holds the capacity to build and maintain networks with regional stakeholders, from local authorities and third sector organisations to the media, in a way that an individual academic cannot. The establishment at Cardiff Metropolitan

University of a directorship in external engagement signals a proactive approach to engagement with stakeholders, and such a role shows potential for useful application elsewhere. As a senior university official, the post-holder possesses the legitimacy to become well acquainted with the region's key people and debates. Crucially, she/he also needs to be freed from a target-driven agenda, to allow open-ended relationships, and not simply limited "project partnerships", to develop.

Armed with a clearer understanding of the opportunities and challenges facing its region, the university will, of course, be better placed to identify strategic opportunities of mutual benefit. Newcastle University's involvement in "urban foresight" exercises in the city, which in turn has led to alignment of elements of the research agenda with identified need (Tewdwr-Jones et al. 2015), presents an interesting model whose application to the south-east Wales case might, in due course, bear exploration. However, to capitalise fully on the university's potential for engagement—especially in a region lacking immediate capacity to develop large-scale initiatives—strategic engagement projects cannot represent the be-all and end-all. Academics should be encouraged to consider engagement "on a broad front" (Arbo and Benneworth 2007:59).

To better facilitate this, the university's network-building activities need to be complemented with effective *communication* of the discussions emerging from those networks. This would serve to raise the profile of regional engagement as a valued activity and to alert academics to the opportunities and challenges with which they might engage. A comprehensive brokerage role is liable to be resource-intensive. However, even were it desirable, it is certainly not essential. Mirroring establishment of external connections, a similar concern with building good intra-university relationships should make regular, informal, lighter touch communication of key debates and contacts possible.

Where the university can usefully take a more formal role in bringing stakeholders together is as a forum for honest, challenging debate. When institutional "thinness" and low social capital are the norm, private and neutral spaces in which to discuss difficult issues tend to be scarce. South-east Wales is a case in point. In this environment, a university that offered stakeholders the physical and mental space to discuss politically sensitive topics would offer much. For the region's universities, this is surely a pressing opportunity.

A third area in which universities can take immediate action to encourage city-regional engagement is that of *recognition and reward*. In the face of academics' divided loyalties, incentives put in place by university management can conceivably tip the balance in favour of engagement. Award schemes like Cardiff University's long-running Innovation and Impact Awards, which place particular emphasis on effective collaboration with non-university partners, raise the profile of, and signal university support for, the types of engagement that they reward. Inclusion of a category for contribution to city-regional governance, broadly defined, is one possible step in a culture change towards enhanced regional engagement. More widely influential are the criteria for academic promotions. In recent years, universities have begun to assess excellence in impact and engagement, alongside research and teaching. But to what extent does regional

engagement expressly figure in their criteria? While they might not *exclude* the contribution of regional engagement to promotions, its explicit *inclusion* serves as a powerful signal to academics that this constitutes a valued form of activity.

Inevitably, funding is one of the most powerful tools for incentivisation. And while university funds cannot readily compete with large-scale Research Council grants in the incentivisation stakes, small-scale funds can still effect change. Relatively minor sums may prove sufficient to catalyse significant local change. And where research and engagement requires a greater injection of funding, university funds can support pilot projects in advance of a more comprehensive bid. Although no evaluation can yet testify to its effectiveness, Cardiff University's Pilot Engagement Project Fund certainly aims to fulfil these roles in the Cardiff Capital Region.

While these might strike some as fairly obvious activities on which to focus, the devil is in the detail of their implementation. As Weick (1976: 3) has cautioned,

It is conceivable that preoccupation with rationalized, tidy, efficient, coordinated structures has blinded many practitioners ... to some of the attractive and unexpected properties of less rationalized and less tightly related clusters of events.

The temptation may therefore be to develop support mechanisms in ways that control and constrain, whether in an attempt to direct activity or merely to create an "efficient" system. If there is one lesson from the characterisation of universities as loosely coupled organisations, it is that this urge must be resisted. Universities have immense potential to contribute to their city-regions in myriad ways, but this will only be fully realised once we have established how to support action in a way that coordinates, not controls.

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Chapter 16

Life Sciences and Health in South West Wales: A Sub-regional Innovation Ecosystem

Gareth Huw Davies, Robert Marc Clement, Louisa Huxtable-Thomas, George Johnson, Brian Lee Perkins, Sian Roderick, Jennifer Gregory, Bjorn Max Rodde and Jayne Daniels

Abstract South Wales has been nurturing a nascent Life Sciences cluster through initiatives including the Institute of Life Science (ILS) at Swansea University Medical School. ILS aims to provide an entrepreneurial learning environment transcending industry, health care, academia and further education. This chapter describes how efforts to develop the sector have been undertaken through structured efforts of *Understanding*, *Acting* and *Measuring*, resulting in new ventures formed through spin-outs to commercialise research output and collaboration with other enterprises. Building upon concepts of clustering and regional innovation systems, the approach demonstrates the harnessing of a long-term strategy involving *smart specialisation* resulting in emerging and meaningful economic impact. Networking and knowledge exchange are shown as core components of a system reaching across wider sectors involving a diversity of skills. The conclusions demonstrate how entrepreneurial learning has also helped develop further actions including *Talent Bank* in support of the region's broader ambition of *A Regional Collaboration for Health*.

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Introduction

South West Wales

South Wales has long been nurturing a nascent Life Sciences cluster (DTI 2001) and has looked to develop the potential of the sector as part of a wider strategy for economic renewal (WAG 2005, 2010). Significant investments by public and private sectors have established a substantial research infrastructure and new enterprise, much of it focused around the Swansea Bay City region and involving Swansea University's Medical School.

Most recently, regional efforts to develop the sector have focused upon 'smart specialisation' strengths including medical devices, informatics and wound healing. Entrepreneurial learning sits at the heart of these endeavours, working to commercialise academic research and enhance industrial collaboration. This chapter records how these efforts have been involved in the development of a Life Sciences and Health cluster within a sub-regional innovation system/ecosystem involving enterprises from a broad range of sectors.

This development is presented through *Understanding*, the insight established to inform interventions for sector development; *Acting*, efforts undertaken to create new enterprise with support of the Medical School; and *Measuring*, a summary of the impact it has had upon the regional economy.

Industrial History

The current dynamics of economic development in South West Wales can be traced back to the economic restructuring that saw the UK established as the world's first industrial nation (Mathias 2013). This revolution continued with subsequent contraction of the steel industry and the almost complete disappearance of the coal industry during the 1970s and 1980s, punctuating a trend of economic decline that had set in during the post-war period (Morgan 2001).

Subsequently, economic development policy in Wales has focused on pursuing inward investment with what Cooke and Clifton (2005) termed a 'field of dreams' approach of 'build it and they will come'. This produced significant impact (Braczyk Cooke et al. 1998; Salvador and Harding 2006) particularly during 1983–1993, with Wales attracting 15–20% of inward UK Foreign Direct Investment (FDI). One major investment could deliver significant employment to the surrounding region, and much like the iron works of old could become the prime employer in a town or region.

However, this FDI revolution turned further as opportunities declined during the 1990s with a slowing UK economy (Young et al. 1994) and emergence of competitor regions such as China and India (Chen 1996). This resulted in some overseas-managed manufacturing branch plants relocating from Wales to regions

with lower cost bases, with impacts on communities similar to the pit closures previously experienced. Observers noted weaknesses in the ‘embeddedness’ of such activity (Phelps et al. 2003), together with imbalance in the focus given to indigenous enterprise and clusters (Cooke and Clifton 2005).

Knowledge Economy

The ambition to transform the Welsh economy to one with a greater capacity for research and development and innovation was set over a decade ago by the Welsh Assembly Government with *A Winning Wales* (WAG 2004). Actions stemming from this strategy included implementation of an Entrepreneurship Action Plan and a fund to develop new ventures from the output of university research. Much focus was given to Information Communication Technology (ICT) and ‘Green’ sectors, though with wider efforts to support new and existing growth sectors and clusters.

During this period, Cooke et al. (2006) described the emergence of Regional Science Policy that the Welsh Government (WG) came to with its strategic agenda, Science for Wales (WAG 2009). This placed ‘Life Sciences and Health’ as a Grand Challenge area to be tackled through the EU approach of Smart Specialisation and the associated concentration of investment into excellence. Programmes such as *Sêr Cymru* (providing funding to attract leading researchers) and the restructuring of the Health and Care Research Wales Research Infrastructure have stated the intention to build capacity and maximise impact. This approach provides a mix of industry and cluster policy development objectives discussed at the time by Cooke (2004), and more recently by Ketels (2013), with knowledge transfer and commercialisation core components of the strategy. The inherent complexity, long-term nature and the fact that meaningful impact of such endeavours may not be seen for years after initial investment have been noted by Huggins and Kitagawa (2012). This is especially important for a sector where innovations can require years, or even decades, of effort.

More recently, the Welsh Government’s (WG) strategy for economic development has become more sector focused and is aimed towards nine key sectors, including Life Sciences, which it recognises as being particularly important for its additional health and broader societal benefits:

“The Life Sciences sector is an important driver of economic growth and improved wellbeing. It serves large global markets which are growing quickly, driven especially by population growth, changing demographics and increasing expectations from medicine and therapy” (WG 2013:18).

WG has established a sector panel to develop and implement a strategy and action plan to harness the potential of Life Sciences for Wales as a whole with the vision ‘to facilitate the growth of a dynamic life sciences ecosystem, leveraging financial investment where industry, academia, clinicians and government collaborate and deliver a sustainable economy and excellence in healthcare innovation’ (WAG 2014). To achieve this vision, WG has embarked upon a number of strategic

initiatives including notable investments to build upon strengths across the sector. The attraction of talent, and development of indigenous knowledge and intellectual property are central to two of the major pan-Wales interventions of the Arthurian Investment Fund and Sêr Cymru.

Life Sciences in Wales

In 2001, the UK Department for Trade and Industry (DTI 2001) identified a nascent biotechnology cluster within Wales. Although this cluster did not appear in the 31 key UK clusters described in the more recent McKinsey (2014) review, it does feature in analysis by other consultants (SQW 2014). This is also the case for many clusters originally identified by the DTI in 2001, half of which have grown during the intervening period.

In parallel with this observation, although not explicitly targeted in the Welsh Assembly Government Economic Development Strategy, *A Winning Wales* (WAG 2004), the sector, defined as ‘pharmaceuticals/bio-chemicals’ was identified as important for future economic growth (WAG 2005).

Employing 10,000 people across Wales and annually contributing £2bn to the economy (WAG 2014), the Welsh Life Sciences sector is developing rapidly, particularly in comparison with other sectors which have suffered badly during recent years. In Wales, the sector has seen significant investment and growth including a number of major regional developments. This has resulted in growth in Gross Value Added (GVA) of circa 13% per annum across the sector despite the chronic broader economic conditions (Table 16.1).

Over 80% of sector employment is within medium/large enterprises. However, the Welsh ‘ecosystem’ also comprises scores of smaller companies and sole traders, many of whom are also globally active. While the South East of England accounts for the largest share of the sector, there are strengths across the UK, including within Wales a significant proportion of medical technology activity (Table 16.1).

The comparative strength of this sub-sector is highlighted when compared in more detail against other UK regions (see Fig. 16.1).

The regional diversity within the sector ranges from global companies manufacturing medical supplies such as Ortho Clinical Diagnostics, through to indigenous enterprises such as Biotec Services International providing specialist clinical trials supplies and support.

The relatively low showing for the pharmaceutical sub-sector in Wales suggested as in Fig. 16.1 hides a mass of associated activity in clinical trials, drug discovery and toxicology research which is featured elsewhere. Indeed, the quality of work across Wales in the development of new diagnostics and therapies is world class. For example, Cell Therapy Ltd., a start-up founded by a Nobel Prize Winner for Medicine, has undertaken part of its development work both in Cardiff University and in Swansea University’s Institute of Life Science.

Table 16.1 Life sciences enterprises by sub-sector

	Active enterprises by priority sub-sector—life sciences												Change 2012–2013 (%)
	2005	2006	2007	2008	2009	2010	2011	2012	2013	% of 2013 total (%)	Change 2005–2013 (%)		
<i>Wales</i>													
Industrial biotechnology	35	35	35	40	35	30	25	25	20	7.3	-38.9	-12.0	
Medical biotechnology	95	100	105	150	130	120	110	110	110	40.0	13.7	-1.8	
Medical technology	115	110	110	110	110	110	95	100	100	36.4	-12.9	0.0	
Others (inc pharmaceuticals)	25	25	25	25	30	30	30	40	45	16.4	80.4	12.5	
Total life sciences	270	270	275	325	305	285	270	275	275	100.0	1.6	0.0	
<i>UK</i>													
Industrial biotechnology	460	450	460	435	400	360	335	330	345	5.2	-25.0	4.2	
Medical biotechnology	2490	2605	2690	3300	3175	3090	3015	2980	2955	44.3	18.7	-0.8	
Medical technology	2405	2380	2380	2180	2385	2320	2300	2305	2345	35.2	-2.6	1.6	
Others (inc pharmaceuticals)	540	545	550	490	625	675	755	895	1020	15.3	89.3	13.8	
Total life sciences	5895	5975	6080	6405	6585	6450	6410	6515	6665	100.0	13.1	2.3	

Source: Inter-departmental business register, office for national statistics

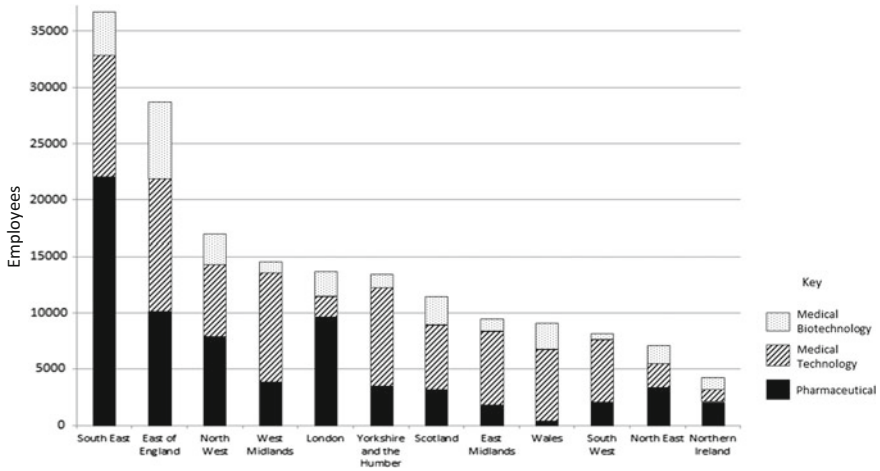


Fig. 16.1 Sub-sector employment by region. *Source* Govt (2014)

The ‘South West and Central Wales’ region is home to diverse Life Sciences enterprise ranging from early-stage academic spin-outs through to major employers producing products for household names. ILS, for example, works with some 250 enterprises ranging from local specialist consultants through to multinationals. While the regional employment within core Life Science is the smallest amongst Welsh Government Priority Sectors, its high GVA per worker, significant growth potential and crossover with other high-value sectors are important drivers.

Institute of Life Science (ILS)

The Institute of Life Science¹ has been developed as a partnership between Swansea University’s Medical School, Abertawe Bro Morgannwg University Health Board (ABMUHB), Welsh Government (WG) and the private sector to develop the potential of Life Science research and innovation to help improve the wealth and health of Wales. These efforts have been combined with broader WG efforts to build a Life Science ‘Ecosystem’.

This initiative aims to help address regional limitations in regional innovation capacity including the comparatively low level of Business Expenditure on Research and Development (BERD) and the requirement for new opportunities and ventures to support sector development. This underscores the importance of local higher education institutions noted in the WG Knowledge Economy Nexus review of the interplay between Welsh higher education and industry (WAG 2004).

¹<http://www.swansea.ac.uk/ils/>.

Since 2004, the ILS initiative has created a number of facilities including biomedical laboratories, a dedicated clinical research facility, a medical imaging research suite and business incubation/growth. Co-located with clinical facilities and expertise of the ABMUHB Singleton Hospital site and the wider academic resources of Swansea University, ILS is supported by a team engaged in commercialisation of research and development of other industrial collaborations. In this respect, ILS has aimed to create an entrepreneurial learning environment where the boundaries of academia, industry, health service and other actors innovate together.

The ILS facilities have been realised through £37.9 m of investment from Welsh Government and European Structural Funds (via European Union Objective One and Convergence Programmes), with the technology transfer and research activities sustained through reinvestment of research and commercial incomes. Capabilities, such as ILS, aim to provide intellectual output to support regional sector development. This, however, needs to be aligned with the 'absorptive capacity' of firms and the broader industrial sector within the region to harness this for its benefits to be captured locally. In essence, this requires an alignment between the existing and growing sectors to optimise the impact of university output and wider relevant interventions. The next section describes efforts undertaken to develop this understanding, to inform strategy and delivery of actions including the Institute of Life Science.

Understanding

Regional Learning Partnership/Life Science Exchange

Vibrant sustainable knowledge-driven clusters have been demonstrated as drivers of productivity and innovation (Porter 2000) and engines of new venture formation (Delgado Porter et al. 2010), so an interest in them from policy-makers for economic development is understandable. However, research into Life Sciences clusters has often focused on major US and EU clusters (Cooke 2004), and there exists some scepticism of the effectiveness of interventions for their development (Martin and Sunley 2003; Brakman and van Marrewijk 2013). A core concern has been 'fuzziness' of the cluster concept, while other commentators acknowledge the gap between theory and practice (Swords 2013), and the need for a consideration of specific local context (Ketels 2013).

Recent regional efforts have provided important learning for future development with a review of interventions noting limitations in absorptive capacity (Cooke 2004) and loss of focus upon the knowledge-economy mission (Morgan 2013). To help address the issues identified, detailed understanding of the sector has been developed, through the work of the Regional Learning Partnership (RLP) and MediWales. This has involved the surveying and interviewing of diverse sector

companies in the region, along with focus groups examining key sub-sectors. The intention of this work has been to use the insight gained to resolve the challenge of ‘fuzziness’ in the concepts involved, and deliver both regional and sector-specific perspectives in tailoring interventions attuned to absorptive capacity.

Regional Learning Partnership (RLP) Survey

The purpose of the RLP (2013) Skills for Life report was to scope and understand the ‘Skills Pipeline’ into the regional Life Sciences sector. The inherent lead time of affecting major change within a regional skills base is a significant challenge in supporting the development of rapidly developing sectors such as the Life Sciences. This is underlined by the fact that secondary school pupils currently making important subject choices may not enter the labour market for a decade, if they continue through into further and higher education. Furthermore, the complexity of the sector, overlapping into ICT, Advanced Manufacturing and other Services, required broad consideration of the skills involved.

The research was undertaken to provide recommendations to assist the region in optimising its provision and subsequent benefit from the skill base required to harness the potential of the sector. The study underpinning the RLP report involved analysis of the current supply of qualified individuals from schools, further education and higher education institutions, together with a survey of enterprise needs across the sector.

The RLP research involved a detailed survey and interviewing of a representative forty-six enterprises across the region. Alongside the skills and workforce aspects of the research, the research and development (R&D), innovation and networking activities of companies were also surveyed to provide a more detailed understanding of the dynamics involved.

While relatively small, this survey highlighted a number of key issues, not least the interdependence between Life Sciences and other sectors across the region. With respect to roles within companies, a significant proportion of Life Sciences employment related to ‘manufacturing’ roles (Table 16.2).

While the findings summarised in Table 16.2 demonstrate the medical technology nature of the sector within the region, it also points encouragingly to the fact that there are enterprises with their entire value chain from basic R&D through to manufacturing and distribution within the region. This is discussed further in the following section.

Much focus is understandably given to the specialist scientific skills required to support R&D, and this provides an important linkage between the sector and academic institutions. However, as shown in Table 16.3, presenting planned recruitment by surveyed companies, the majority of roles fall outside of this scope. While this provides a broader challenge for skills supply, it also highlights the wider employment potential for the sector beyond Science, Technology, Engineering, Mathematics, and Medicine (STEMM)-trained individuals.

Table 16.2 Employment breakdown by sub-sector

Sub-sector/roles	Number of companies	Technical roles (FTE)	Managerial roles (FTE)	Administrative roles (FTE)	'Other' roles (FTE)
Medical devices	18	46.8	49.3	46.3	94.3
Specialist services	10	34	17	11	6
Human therapeutics	6	49	15	17	2
Manufacturing	8	93.8	60.3	60.1	173.7
Veterinary/environmental	1	0	1	1	0
Clinical research	3	58	29	26	1
Other	12	47	14	12	16

Table 16.3 Anticipated recruitment breakdown by sub-sector

Sector	Technical	Managerial	Administrative	Other	Total
Medical devices	16.25	11.17	11.78	8.00	47.20
Specialist services	2.00	0.40	0.80	1.50	4.70
Human therapeutics	12.75	5.37	3.38	0.00	21.50
Manufacturing	4.25	2.18	2.67	1.00	10.10
Veterinary/environmental	0.50	0.50	0.50	0.50	2.00
Clinical research	4.75	2.38	1.37	0.00	8.50
Other	7.00	0.00	3.00	9.00	19.00
Total	47.5	22	23.5	20	113

The RLP report's recommendations included the establishment of a group to support the sector, together with specific actions aimed across further and higher education, schools and other stakeholders. Such a group has since been established as the All Wales Life Sciences Skills Group, with strong regional involvement and engagement with Welsh Government's departments of *Economy, Science & Transport*, and *Education & Skills*. A further key response to the Report's recommendations has been the development of the 'Talent Bank' in partnership between Gower College (further education) and Swansea University's Medical School. The concept involves the creation of a dedicated Life Sciences and Health FE College co-located with the University, NHS and industry. Intensified curricula informed and delivered in partnership with practitioners are intended to support skills supply for students aged 16–18 through to continuing professional development as part of an integrated sector-focused lifelong learning system.

Life Science Exchange

Alongside the RLP research, wider actions have been taken to understand the dynamics and opportunities of the regional sector, a prime example of which is Life Science Exchange (LSX) (Perkins et al. 2016). The aim of LSX was to identify and

develop academic, public and private sub-sectoral knowledge exchanges that effect economic change. The LSX work has involved a series of ‘sandpits’ (events bringing together experts from a range of disciplines/sectors to explore a specific topic or problem space) and quarterly focus groups examining specialist areas of diagnostics, e-health, medical technology, neuroscience, pharmaceuticals and regenerative medicine, aligning with the identified Welsh smart specialisations. This created sub-sector-specific entrepreneurial learning groups that have informed understanding and in itself have provided a learning environment for participants.

The output of the LSX is a body of sector intelligence that represents the collective expertise of a wide range of expert contributors. This purpose of the work is to inform future policy and planning across the sector and will help to align support activities with the needs of companies, universities and healthcare providers. Specific, actionable recommendations have been provided in the detailed reports provided by the LSX to the WG with the ultimate aim of improving innovation, health and wealth in Wales.

The work has highlighted the important role of the Welsh National Health Service (NHS) in providing access to clinical expertise, facilities and ultimately as a customer. Opportunity for greater engagement and clinical access for R&D was noted, along with scope for greater evaluation and adoption of Welsh innovations.

There was a recognised need for the engagements instigated by the LSX to continue into the future. In some cases, specific challenges and opportunities needed to be crystallised into detailed proposals with specific objectives, deliverables, budgets and timescales. A number of organisations have expressed the desire to maintain the momentum of their respective focus groups as special interest groups operating under the LSX brand or unique branding (e.g. Clinical Trials Services Wales).

The LSX process has brought together hundreds of stakeholders in a sub-sectoral approach to the Welsh National Innovation System. This has resulted in a multitude of collaborations, projects, inward investment opportunities and special interest group formations, in addition to securing multiples of investment in funding for Wales. There was a view found amongst participants that processes such as the LSX should be continued to be supported by the WG and the process could be held up as a shining example of best practice for knowledge exchange for other sectoral systems of innovation. The LSX model is a simple and straightforward mechanism for any regional government to adapt and implement with the hope of improving innovation, skills, networks and knowledge exchange.

Acting: Institute of Life Science

ILS Overview

Since its inception in 2004, ILS has established research and innovation capacity to assist in developing a regional cluster built from enterprise including academic spin-outs, existing and new indigenous enterprise, and inward investment.

The focus of the ILS Phase 1 (2004–2008) project was to provide specialist medical research laboratories along with business incubation facilities to support academic–industrial collaboration. This coincided with the development of a research focus in health and bio-informatics underpinned by the IBM Blue-C supercomputer infrastructure. Phase 2 (2009–2015) involved the development of an expanded research infrastructure and incubation capacity, including a clinical research facility, medical imaging suite and informatics research offices.

Alongside the insight from the RLP research and other efforts, ILS has worked to avoid weaknesses noted in previous regional initiatives by commentators. Thereby, it can be seen as trying to learn from experience through ‘experimentalism’ of the form described by (Henderson 2000). Efforts have been made to optimise absorptive capacity by aligning an R&D focus with the sector in the region to address challenges noted by Cooke (2004), while more robust management maintains the focus of mission and monitoring, in response to issues noted by Morgan (2013).

The apparent lack of involvement by Technium (a regional initiative to develop a network of innovation centres) with the wider innovation system actors, such as financiers, patent attorneys and business development specialists identified by Cooke (2004), has led to ILS actively pursuing engagement from the outset, as noted in the following section. This sought to create systemic linkages across the sector within the region, nurturing new and supporting existing indigenous enterprise while attracting inward-investing opportunities. Examples of this include the ‘Scinapse’² partnership providing professional services and a sector-specific cohort of the LEAD Wales initiative.³ Both programmes support the entrepreneurial learning agenda, with the former providing leading expertise to support businesses and the latter developing leadership within SMEs to promote sustainability and growth.

The nature of engagement with ILS, both for existing companies and for start-ups, relates significantly to scientific expertise and specialist facilities, as shown in Fig. 16.2 from Davies et al. (2015) citing survey and project monitoring data.

However, the predominant nature of engagement with ILS has been to support networking amongst enterprises, researchers and other actors, suggesting ILS is playing a more complex role within a system rather than having simply separate bipartite relationships with supported companies. The involvement of start-up enterprises in such myriad relationships suggests an entrepreneurial learning milieu amongst entrepreneurs, academics and other ecosystem participants.

²<http://www.lifescienceshubwales.com/members/scinapse/>.

³<http://www.swansea.ac.uk/reis/case-studies/lead-wales/>.

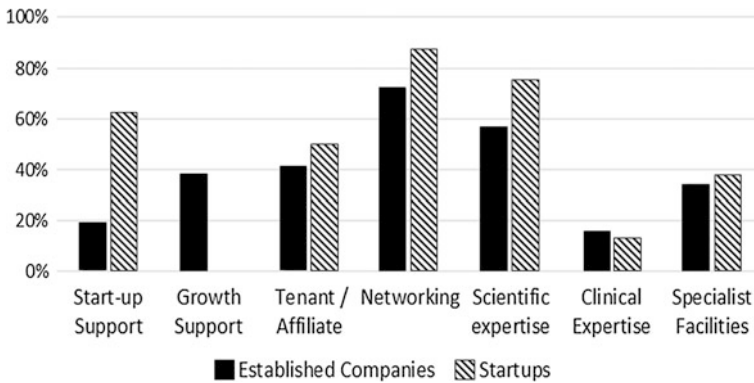


Fig. 16.2 ILS support uptake by engaged existing enterprises and start-ups

ILS Engagement

The nature of the engagements undertaken by ILS described in the previous section reflects its assets and mission, though how this relates to the sector it serves requires further consideration to determine whether it is actively supporting development of ‘embeddedness’.

During the period 2004–2013, ILS has worked with 279 enterprises active in the Life Sciences and Health sectors across the South West Wales region, with 243 enterprises (87%) qualifying as small- and medium-sized enterprises (SME) based on indicator performance as noted in end-project evaluation by The European Consulting Company (TECC)/Trilein June 2015). This grouping is comparable in scale with the Scottish cluster at the turn of the century (Cooke 2001) though with a different nature to its ‘core’.

These core enterprises span a broad range of segments, with medical technology and medical biotechnology reflecting the broader sector in Wales. A recent exercise used an adaptation of the Cluster Map developed for Life Sciences in Munich, Germany (Cooke et al. (2006), to present the make-up of enterprises engaged with the cluster around ILS (shown in Fig. 16.3 below). This used the same mapping with service providers, interrelated industries, supporting organisations and related clusters (as indicated in the key for Fig. 16.3). This includes many of the actors seen in the conceptual bioscientific and biotechnological value chain proposed by Cooke et al. (2006).

The Cluster Map, and the engagement of ILS, captures the breadth of organisations within the ecosystem. Notable actors include the National Health Service (NHS) (as the Public Healthcare System) as a major consumer and partner in the development of Life Science innovation; a range of enterprises engaged in various activities in clinical trials; and the role of public finance, including the recently established Arthurian Investment Fund. ILS itself features across a number of cluster roles, operating simultaneously as a *Research Organisation*, *Educational Institution* and *Cluster Organisation*.

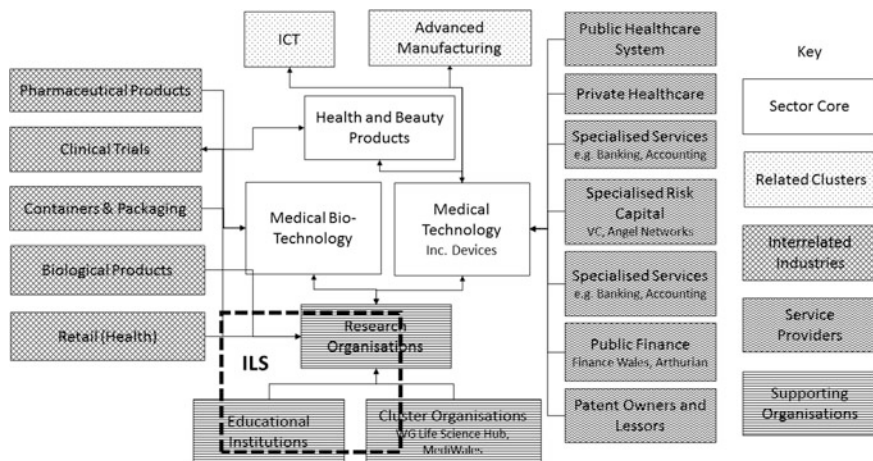


Fig. 16.3 Regional life sciences and health ecosystem mapping

The importance of a diversity of actors within the cluster is important for success, though with world-class scientific talent as a critical ingredient, as highlighted by Audretsch (2001) in a review of US biotechnology clusters as a complementary factor to support commercialisation of knowledge. The ILS ecosystem certainly presents such diversity, while a recent strong performance of associated researchers in the Research Excellence Framework (REF) 2014⁴ and major UK Research Council (RCUK) investments suggest that research quality and scale is developing in parallel.

Ecosystem Enterprise Contribution

The creation of a new enterprise is just one mechanism to develop life sciences opportunities, and most of ILS’s work involves supporting existing enterprises, large and small. However, new companies are an important mechanism for commercialising research in an entity dedicated to venture and harnessing opportunities within the locale. Indeed, even across international borders, start-up opportunities are being actively pursued and poached to embed their innovation and job creation potential.

Start-up enterprises are therefore important, if somewhat longer term in their impact. Due to testing and regulation, new ventures commercialising medical products have long lead times, typically 10–20 years with new drugs requiring on average \$1 billion of investment (BIS 2011). Downstream impacts of new ventures

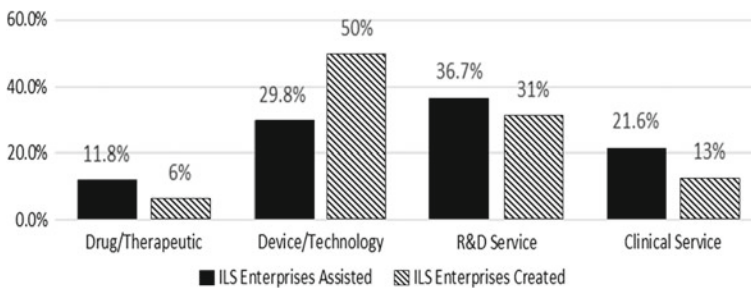
⁴Research Excellence Framework 2014, www.ref.ac.uk.

can take a significant time to be realised. Therefore for an initiative such as ILS to have a major impact in the near-term requires engagement with a broad portfolio of ventures operating at each stage of commercialisation.

To date, assistance provided by the ILS (during the Phase 2 period 2009–2015) has resulted in the creation of sixteen new enterprises primarily in the fields of medical devices and drug discovery. Research suggests that, despite a recent slowing in start-up activity across the sector (Mobius 2011) (mainly due to a drop in university spin-outs across the UK), the survival and success rates amongst technology firms are encouraging. Figure 16.4 shows the breakdown of ILS start-ups by activity, in comparison with the wider community of existing enterprises engaged by ILS.

The make-up of the new ventures established through ILS (Fig. 16.4) presents a diversity reflecting the broader regional ecosystem, predominantly based upon medical devices along with clinical and other services, while only one enterprise related to pharmaceuticals.

Interestingly, two of the largest spin-outs each employing over twenty people were reincarnations of previous enterprises which had ‘failed’. This emphasises the importance of an enlightened entrepreneurial culture which recognises risk, learns from experience and celebrates effort not just success. A further interesting observation from this albeit relatively small community is the nature and extents of linkages they possess. Figure 16.5 shows that linkages with external research activities constitute the most prevalent type of linkage. While this is to be expected (Mian 1996), it is the relatively high proportion of firms reporting multiple linkages which suggests greater embeddedness within the region that suggests a clustering effect. This is supported by the fact that just under a third (5/16) firms originated as university spin-outs.



	Drug/ Therapeutic	Device/ Technology	R&D Service	Clinical Service
ILS Engagements	29	73	90	53
ILS Start-ups	1	8	5	2

Fig. 16.4 ILS enterprises assisted and created by segment

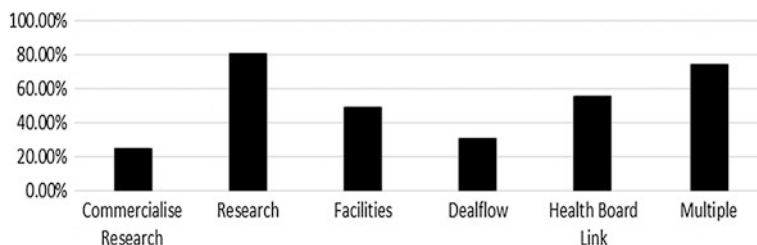


Fig. 16.5 ILS enterprises created: linkages by type

Recognising, let alone appreciating or understanding, this complexity is a challenge for many observers, while the long lead times and inherent risk of life sciences R&D/innovation require patience and volume to provide likelihood of success.

The research also highlighted the long-standing finding by Teece (1986) that benefits extend beyond the innovating firm. Two of the companies in question had established manufacturing relationships with established firms (including a branch plant of a multinational enterprise) in the region, resulting in seventy new jobs. Another two companies were in earlier exploratory stages of similar arrangements. This finding suggests that the new enterprises are contributing to the embeddedness, not only of themselves but also to that of other employers beyond the core sector.

Wider Engagement: NVI Wales

The earlier part of this section has shown how ILS has aimed to support the development of Life Sciences and Health, with networking within the regional ecosystem supporting an entrepreneurial learning ecosystem. However, it should be noted that an internal view of activity in the region has been complemented by numerous external engagements to support entrepreneurial learning. An example of this is involvement in the National Virtual Incubator (NVI) Network. NVI Wales, supported by WG, is part of a flagship initiative of Cisco's British Innovation Gateway ('BIG') programme. The NVI network connects thirteen business incubation centres and research institutions around the UK (called 'NVI Nodes'), via state-of-the-art Cisco video conferencing technology.

The purpose of the NVI is to bring organisations together in collaborations which boost levels of UK research, innovation and economic growth. NVI is central to the development of the UK's emerging innovation ecosystem. NVI Wales (or the Welsh node) is based in Swansea University Medical School at ILS, and it joined the network as a specialist communication point for life science and ICT start-ups and SMEs. Entrepreneurs in the Swansea City Region and across Wales can visit the Welsh node to connect with other organisations in the UK wide network in order to share resources, pool ideas and develop new business partnerships.

NVI activities include a seminar programme which attracts both UK and internationally renowned speakers. These seminars aim to expose businesses in the City Region and the national network to the latest technologies and emerging trends. The NVI hosts monthly ‘peer-to-peer’ sessions which offer local businesses the opportunity to talk to peers from across the UK. Topics covered range from Big Data, Gaming and Healthcare Apps to Internet of Things (Elliott, Levin et al.). These sessions help to raise the profile of the City Region’s companies, facilitating direct contacts to other UK companies, universities and customers.

In aiming to support and encourage entrepreneurship and enterprise, NVI Wales provides additional support to members in the City Region and Wales through a robust pipeline of business support workshops and one-to-one sessions. NVI Wales has recruited a number of private sector companies and business support organisations as mentors to provide this specialist advice for its members. Topics covered by mentors include: finance, funding, product development, innovation, IP, marketing, and entrepreneurship.

NVI Wales has developed and delivered a number of UK wide innovation workshops. These workshops have brought together business leaders, academics and the NHS to drive entrepreneurship and innovation by encouraging delegates to generate and co-develop new e-health solutions, ranging from healthcare apps to wearable devices. NVI Wales has thereby provided the Swansea City Region and ecosystem with a position in this dynamic UK wide digital ecosystem helping to drive and stimulate entrepreneurship, collaboration, innovation and business development.

Measuring: Emerging Impact

ILS Measurement

Previous sections have described the challenges and opportunities to which the region is responding, together with activity undertaken to develop a sub-regional innovation system/ecosystem. The RLP research explored the nature and potential of the nascent cluster, while the ILS data suggest enterprises are being developed and embedded with the broader ‘ecosystem’ around them. However, it is the sought economic contribution that is of interest to policy-makers and the wider community. To ascertain the scale and nature of this impact, a study has been undertaken examining the ILS activity for which comprehensive monitoring data exist. Only through such assessment can it be determined whether such interventions are contributing effectively.

The economic impact of universities on their communities has long been studied (Elliott et al. 1988) with increasing interest in their contribution through development of knowledge economies (Berman 1990; Roberts and Eesley 2009). Huggins and Cooke (1997) clearly note this in a paper analysing the economic impact of

Cardiff University, with specific regard to linkages with the Cardiff Business & Technology Centre (though in this current context the Cardiff MediCentre at the Heath Hospital would be a more relevant linkage).

As ILS is a publicly funded initiative, it has maintained records of its activities which can feed readily into evaluation. Official government guidance for evaluation of public programmes and projects in the UK (including Wales) is provided by the Her Majesty's Treasury Green Book (HM Treasury 2003). This aims to provide best practice for appraisal and evaluation of projects of all types and sizes, covering their economic, financial, social and environmental aspects.

The European Union, which co-funded ILS through Structural Funds, also offers guidance relating specifically to economic development initiatives in *The Guide: The Evaluation of Socio-Economic Development* (EU 2013). This guidance provides an in-depth resource for the planning and undertaking of evaluations. Although it is aimed primarily at the programme level (i.e. in consideration of multiple interrelated projects), it provides a useful resource for all types of evaluation. In addition, data collection for Structural Funds projects involving innovation activities aligns with a wider framework presented in the Oslo Manual (OECD 2005).

A further European Commission document, *Guide to cost-benefit analysis of investment projects* (EU 2002, 2014), provides specific guidance on a range of interventions including investments as diverse as ports and airports, museums and archaeological parks. In relation to 'Industrial Estates and technological parks', it is suggested that such interventions are evaluated with a time horizon of at least twenty years and that the wider social benefits, such as improved entrepreneurial skills, are included. This is consistent with the vision of ILS (and the theory of cluster development) that the most significant benefits would be reaped in the long term.

Study Approach

The counterfactual to the ILS efforts would have simply been a region without a College of Medicine and the associated activities including the research that spawned new enterprises. However, some or different benefits may have been received by the region through other activities using the same initial resources. Understanding this within the complexities of a myriad of interventions is a challenge which also exists at programme level (DTZ 2010).

Using evaluation practice drawn from the Her Majesty's Treasury Green and Magenta Books, the impact of ILS has been examined against the initial pump-prime European Structural Funds/WG investment made over relevant time horizons and a defined region. This has been taken as fifteen years (2004–2018) and twenty years (2004–2023), with the geographical area defined as the South West Wales region. However, as discussed earlier, it should be noted that initiatives of this nature are long-term endeavours and their impact would be noted over a

horizon of decades rather than years, with impact across a wider area. Furthermore, the indirect impacts of the activity are important and can be considered through multiplier effects.

Without sight of alternative investment opportunities available at the time, it is only possible to examine the cost/benefit of the intervention. This can then be given rigour by adjusting for timings of benefits (discounted using the 3.5% Social Time Preference Rate discount factor), making appropriate adjustments for deadweight, substitution and displacement, and testing sensitivity of assumptions.

To focus on impact providing attentionality to a region, the base scenario of this review applies a 50% factoring, reducing levels across all gross reported impacts. This factors potential effects of deadweight, displacement and substitution which may be occurring and which due to inherent complexity of activities cannot be calculated otherwise. This level is in line with initiative (EU 2002) and programme level ex-post evaluation (WG 2012) and research examining current programme interventions (Oldbell3 2012).

To support analysis of the impact, a set of scenarios have been applied ranging from optimistic to pessimistic, together with a base, allowing sensitivity to key assumptions to be assessed. This involves adjustment of key parameters as presented in Table 16.4.

Calculated Impact

As described in earlier sections, the primary stated impact of ILS has been employment creation, delivered by leveraging additional investment into the region from UK and EU research councils, venture capitalists and other funders. Employment creation data from the Phase 1 and Phase 2 projects, together with associated wage information and residual value of the project, therefore, provides the basis of this assessment, calculated as if benefits conclude at the end of the time horizon (i.e. not considering any ongoing employment).

The activities of the ILS initiative during the Phase 2 period (2009–2015) contributing to the research and innovation capacity of the Welsh Life Science

Table 16.4 Cost/benefit scenarios key parameters

	Scenario		
	Low (pessimistic)	Base	High (optimistic)
Adjustment reducing outputs for deadweight, substitution and displacement (%)	60	50	40
Multiplier for indirect employment	0.2	0.5	0.6
Projected combined facility value (market value at end of evaluation time horizon)	10,000,000	12,000,000	15,000,000

sector are noted in the independent end-project evaluation (TECC 2015) and as emanating outwards from its South West Wales ‘Convergence’ region hinterland. Key outputs of the ILS initiative are noted as:

- Assisting over 274 enterprises from micro-businesses through to multinationals;
- Contributing to the development of over 37 new pieces of intellectual property;
- Helping create 16 new enterprises;
- Supporting the creation of 510 direct jobs and scores more within the wider community through multiplier effects; and
- Establishing a research and innovation capacity that will help sustain the regional Life Sciences cluster with new knowledge and skills during further phases of the initiative.

The above builds upon activities undertaken during the Phase 1 period (2004–2008), during which 193 jobs were created, 21 collaborative projects established and 16 new enterprises created, alongside a new R&D facility housing industrial and academic research together with incubation facilities.

The impact of ILS as an initiative has delivered a range of impacts across short-, medium- and long-term (ongoing) time horizons. The following analysis quantifies impacts drawn together under the categories of construction phase; academic, R&D and commercialisation; and innovation and enterprise benefits, as follows:

Construction Phase Benefits: The impact of the project during its construction phase derived from employment and the creation of new facilities. This employment impact has been quantified from project records, using sector wage information for the region from the relevant periods.⁵ In addition, the facility realised has inherent value which is a potential benefit (taken as projected market value) at the end of the time horizon, either to provide continued benefit as present, or alternative use. At the peak of construction, 57 FTE workers were involved in delivery of the facilities, across prime and subcontractors.⁶ This represents a relatively minor part (8%) of the overall employment related to the ILS activity.

This expenditure is noteworthy as it would have been a valuable contribution to the sector during a particularly challenging period (2009–2011). Alongside the wage impacts, the construction activity resulted in materials expenditure with suppliers across Wales and ultimately in delivery of the R&D facilities with a planned lifetime of 30+ years prior to refurbishment or renovation.

Catalysing Academic Research, Development and Commercialisation: Describing the economic benefits from employment within the project portfolios being led from academic centres. To avoid double counting, this factors solely employment and wage impacts and not broader investments (such as the UK Research Councils) which may include staff expenditure. Wage information for

⁵<https://statswales.wales.gov.uk/Catalogue/Business-Economy-and-Labour-Market/People-and-Work/Earnings/averageweeklyearnings-by-occupation-ukcountry>.

⁶Over 500 individuals in total were involved in the construction of the ILS2 facility, though the peak relates to the highest FTE value of individuals contracted for over twelve months by prime or subcontractors.

roles is available; however, the assessment uses a lower value for similar roles in the wider economy, which together with adjustment for deadweight and displacement provides for conservative comparison. The Phase 1 project created 115 R&D jobs, rising to 385 by the completion of Phase 2 project in June 2015. This includes R&D roles created to support commercialisation of research into the new ventures described in previous sections. The direct impact of this employment is calculated on the basis of the role type within the region from the time of its creation⁷ through to the time horizon, discounted accordingly.

Supporting Innovation and Enterprise: Describing employment, enterprise and innovation benefits derived from wider industry-based activities established through ILS. Again, to avoid double counting, this category of impact includes only wage impact as other data such as values of investments may also include staff and expenditure outside the region. 261 full-time roles were created which relate to this category in the period through to June 2015. Robust monitoring required by EU Structural Funds has clearly demonstrated that this impact occurred within the region, with clear relationship to the ILS activity.

As this employment relates to a broad range of roles (as noted in RLP research referred to earlier), an average regional wage during respective years for the region is used,⁸ though the higher GVA per worker within the sector suggests this is a relatively conservative position. These same figures are used for calculation of indirect employment impact as they relate to the broader economy.

Employment created with ILS assistance for each of the above categories is shown in Fig. 16.6. This shows steady development over the period with the growth of research communities at the completion of each facility. Employment growth in the wider sector can be seen as tracking the development of scale in R&D.

Using the ILS job creation and related sector wage data, the combined impact for each scenario was calculated, as shown in Table 16.5. This includes relevant adjustments for potential deadweight, displacement and substitution effects, with appropriate discounting of benefits. For all scenarios, the benefit/cost ratio shows a positive return growing across increasing time horizon which set against the context of weak economic growth in the broader economy is an encouraging position.

Many economic development interventions involve purely revenue activities and do not create facilities. Exclusion of facility value from this analysis provides positive returns, resulting in benefit/cost ratios of 1.94, 2.94 and 3.73 by low, base and high scenarios at the 15-year time horizon.

Further development associated with ILS, including the recently awarded Medical Research Council and Economic and Social Research Council Research Centres being incorporated into the ILS Data Science building, will contribute

⁷<https://statswales.wales.gov.uk/Catalogue/Business-Economy-and-Labour-Market/People-and-Work/Earnings/averageweeklyearnings-by-occupation-ukcountry>.

⁸<https://statswales.wales.gov.uk/Catalogue/Business-Economy-and-Labour-Market/People-and-Work/Earnings/averageweeklyearnings-by-welshlocalareas-year>.

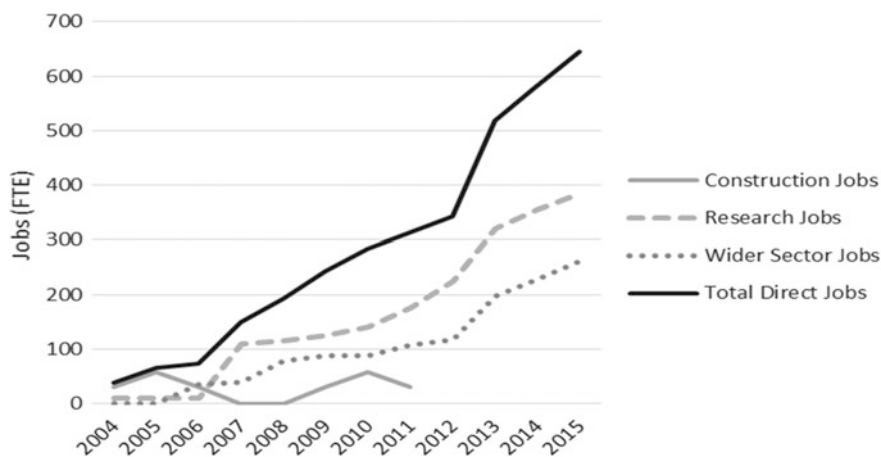


Fig. 16.6 Cumulative employment growth by job type

Table 16.5 Benefits and costs by scenario

Benefits and costs £,000	Base		Low		High	
	15 years	20 years	15 years	20 years	15 years	20 years
Direct employment	91,287	150,431	73,030	120,345	109,544	180,517
Indirect employment	37,294	61,607	11,934	19,714	53,704	88,714
Combined employment	128,581	212,038	84,964	140,059	163,248	269,231
Combined (discounted)	111,472	167,901	73,664	110,917	141,524	213,184
Facility value	12,000	12,000	10,000	10,000	15,000	15,000
Investment PV	37,900	37,900	37,900	37,900	37,900	37,900
Net present value	85,572	142,001	45,764	83,017	118,624	190,284
Benefit/cost ratio	3.26	4.75	2.21	3.19	4.13	6.02

further to the impact of the initiative. The inherent lead time of bringing research to commercialisation and subsequent impact also suggests there may be further ventures resulting from research undertaken during the ILS Phase 1 and Phase 2 project periods.

The above assessment is based on no such new enterprise or additional job creation post-June 2015, put simply, as if all employment benefit created ceases at the time horizon. However, as noted earlier, it should be anticipated from such initiatives that impacts are realised in the longer term. This includes the enhanced capacity and activity in entrepreneurial learning, the recent short-term benefits of which are captured in activity to date but are intended to provide longer term and wider impact beyond the ILS initiative and the considered time horizons.

Conclusions

This chapter has shown how South West Wales has worked to *Understand, Act* and *Measure*, in the development of a nascent Life Sciences and Health cluster. Core to this has been the development of an entrepreneurial learning environment drawing together academic, industrial and clinical communities to form new ventures.

The *Understanding* developed through the RLP research and LSX has informed a range of activities aimed to align with the absorptive capacity of the region and provide additionality in economic impact, primarily through new employment opportunities. These exercises underscored the importance of a focus upon the development of a sustainable pipeline of opportunities and alignment with the broader private sector to support venture development. The range of skills' requirements noted by surveyed firms, along with the commercialisation challenges and opportunities faced by scientists and entrepreneurs, has highlighted the importance of the entrepreneurial learning environment in realising value. The exercises also identified the specific segments where effort could be concentrated to align optimally with absorptive capacity and future development, which were smart specialisation areas including medical devices and e-health technologies. Importantly, this understanding has helped inform a coherent integrated set of regional actions, enhancing research capacity, commercialisation capability and skills development to optimise absorptive capacity. The Talent Bank concept which emerged from this work exemplifies the long-term systematic approach, with life-long learning embedded in an environment spanning from 16- to 18-year-old student delivery through to continuing professional development. Integrated with higher education provision, Health Board delivery and industrial activity, Talent Bank expands the ILS entrepreneurial learning environment to a broader set of participants than those involved in previous phases.

ILS *Acting* across a broad cluster or ecosystem of activity has shown the required breadth of engagement noted above. The focus upon medical devices and other related fields aligns with the Smart Specialisation approach described by Morgan (2013) and addresses the limitations of previous regional initiatives with regard to absorptive capacity and focus. It also means that ILS complements, rather than competes, with other regional work undertaken by colleagues in Cardiff University contributing other strengths to the sector. Indeed, this clearly manifests itself in the collaboration established between the two institutions through the Welsh Wound Innovation Centre (WWIC) at Llantrisant which is built upon the further smart specialisation of wound healing.

The nature and activities of companies in and around ILS demonstrate the characteristics of a sub-regional innovation system as proposed by Abbey et al. (2008). For example, the relationships already being established between ILS technology start-ups and manufacturing within the region demonstrate a contribution to broader embeddedness of enterprise and employment, beyond the core sector. As the number of such collaborations is growing, this suggests effective entrepreneurial learning is occurring amongst companies. In parallel, engagement

through broader networks such as NVI Wales to wider UK and LEAD Wales across sectors demonstrates externality and breadth to this learning.

Measuring the impact of the initiative has helped understand the effect it has had upon the regional sector and broader economy, and informs its ongoing development and delivery. Robust collection of project data for monitoring and evaluation by funders has supported this exercise, highlighting the wider impact of the ILS entrepreneurial learning environment. While the intellectual focus of ILS may be in buildings at Swansea University, the impact discovered is distributed across the region and further sectors.

Sensitivity analysis undertaken in the assessment suggests a robust performance over the past decade. Even in the scenario involving combined pessimistic assumptions, it is shown that the contribution to the regional economy is meaningful. The analysis has also shown that a decade of continued effort, without being knocked off focus by columnist commentators or political impatience, has allowed meaningful impact to be achieved from what are inherently long-term endeavours.

Furthermore, this chapter shows that ILS has embraced the most important lesson from Morgan (2013), showing that Wales can learn from experience, with an approach to committed smart specialisation focused on a collective endeavour for innovation and regional economic development. ILS has therefore focused on development of activity and deal flow for the sector, aligned with and remaining in step with the region's growing absorptive capacity. This has been underpinned by entrepreneurial learning benefitting individual entrepreneurs, enterprises and the partnership itself.

The above learning has been embedded in the recently developed ARCH (A Regional Collaboration for Health) initiative which aims to extend the ILS entrepreneurial learning environment across the region from its origin in Swansea. Through actions such as Talent Bank, NVI Wales and the Life Sciences Hub, this environment will not only expand geographically but also extend its reach across generations and economic sectors providing a regional platform for lifelong entrepreneurial learning.

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Part IV
Inclusivity and Lifelong Learning

Chapter 17

Inclusivity and Lifelong Learning: An Introduction

Michael Osborne

Abstract In this chapter, Michael Osborne introduces the section on inclusivity and lifelong learning by clarifying the most important current themes that emerge from an extensive literature and discourse, with up-to-date examples of their contribution to current policy making.

When we explore the now extensive literature about lifelong learning and the learning society, a few themes tend to come to the fore, with those of economic development and social justice/social inclusion pre-eminent. Such foci are found in various supranational statements (see, for example, Faure et al. 1972; Delors et al. 1996; EC 2001) as well as within national policy discourse [see amongst many Hao (2011) (China)].¹

In relation to social justice and social inclusion, there are two essential sub-themes: firstly, participation in the formal education system; and, secondly, being an active and participating citizen within democratic society. Edwards (1997) was amongst the first to highlight participation in learning society as being part of a socially engaged lifestyle, learning to know as a fundamental element of being an active citizen benefiting others, as well as the economic strand of lifelong learning underpinning the development of a market economy. More recently, research has also demonstrated clear links between learning and a range of aspects of social behaviour (Feinstein et al. 2008). Not only is civic participation enhanced, but there are also benefits in relation to health, crime and tolerance.

The issue of inequitable participation in formal systems is common to most societies, though not addressed by all. Whatever the society, certain groups are excluded from the formal sector of education [schools, colleges and higher

¹UIL's Documentation Centre and Library has collected and collated a range of national lifelong learning policies. See <http://uil.unesco.org>.

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education institutions (HEIs)] by virtue of, amongst others, their social status, race and ethnicity, gender, disability or geographical location. This occurs overtly, covertly, accidentally and incidentally. Many individuals are disadvantaged in multiple ways, and disadvantage can occur at all points in life. I write from the UK just after the current Prime Minister, Theresa May, has announced a desire to return to selective schooling from age 11 onwards, and where her immediate predecessors have overseen a huge decline in government support for adult learning. Many educational researchers would argue that early selection decreases chances of being socially mobile for the majority who are selected to less academically oriented schools, and that the decline in investment in older adults' learning may have undesirable impacts on health and well-being for the most disadvantaged groups who cannot privately fund learning. There is considerable evidence that engagement in learning as an adult has positive health benefits (see Marmot Review 2010), and later in this section (Chap. 20), Hughes discusses the health benefits of lifelong learning in the context of the University of the Third Age.

Widening participation to higher education (HE) for under-represented groups, as a response to inequitable representation in the sector and to combat social inclusion, has been an imperative in many countries around the world (see Osborne 2016). Initiatives have been multifarious and include early interventions within schooling, second chance programmes for adults and developing more flexible university structures (see Osborne 2003). However, despite the considerable effort that has been put into widening participation schemes, it appears that they have had limited success. As HE has expanded over the last forty years to create in many countries a mass system, it is the already most advantaged who have taken up expanding opportunities (Osborne et al. 2014).

The idea that participation in learning is associated with active citizenship is longstanding and offers up a much wider interpretation of both participation and learning. A learning episode does not imply in this context necessarily enrolling for a course in an educational institution, but rather might take the form of learning in a non-formal setting, a self-organised group or individual activity. It may occur in the context of opposing governments and accepted norms, for example within pressure groups concerned with climate change or equal rights for ethnic minority groups. Learning may be both planned and be a by-product of some other activity, and in Jordan's chapter (Chap. 18), we find an account of the relationship between hosting a mega-event, in this case the Commonwealth Games in the city of Glasgow, and various legacies. For example, training opportunities were embedded within the massive construction work for the Games, and as with many other such events, it is anticipated that volunteering may encourage a transition to formal learning.

As mentioned at the outset of this introduction, a core theme within lifelong learning has been that of economic benefit. It may be the case that there are financial gains for some for engagement in learning in later life, but there is no simple algorithm, since that benefit depends on mainly variables, including age

when participating, duration and type of learning (OECD 2001a). Furthermore, there is no simple dichotomy between social benefits through inclusion and economic outcomes. Both are usually desired by beneficiaries and desirable to protagonists. There is an analogy here to the outcomes of entrepreneurship education as described by Penaluna and Usei in Chap. 19. Such education has both social and economic benefits.

It should also be noted that neither economic benefits nor social benefits simply accrue to individuals. Benefits may also be felt by communities at large (of which there are many), businesses, the public sector and the providers of learning if more people engage extensively in learning through life. We can view these groups as stakeholders who are connected synergistically in a common regional or city space. This at last brings us to the concept of the ‘learning city’ or ‘learning region’, a concept which has had several manifestations over the last two decades as a focus for lifelong learning (see CERIOECD 1992; OECD 2001b, Eckert et al. 2012, Kearns et al. 2013).

The learning city/region has been conceptualised in various ways, but crudely we can think of it as a continuum. At one end of this continuum is the economic focus on creating an infrastructure of educational opportunity that might attract inward investment from business (Wolfe 2002). It is argued that employers might be attracted by a learning infrastructure that supports the continuing development of their workers at all levels and creates a supply of suitably skilled workers. At the other end of the continuum, a learning city/region refers to the creation of learning networks between various social actors that promote and enhance social cohesion and inclusion. Here, the concepts of social capital and trust and the role played by cooperative and collective learning have been highlighted (see Asheim 1998).

Just as with lifelong learning, these perspectives are complementary rather than dichotomous. We have argued within the PASCAL Observatory that local economies are not made by city leaders alone. What leaders can do is create the conditions and the structures to position their city to be best placed to take advantage of local assets and adapt to future change, working closely with business, schools, colleges and universities, workforces and local communities. As economies become less and less ‘natural resource’ based, and more and more ‘knowledge-based’, it is essential to invest in human resource development through well-designed adaptive systems for learning and workforce development.

Successful businesses are adaptive businesses. Successful communities are adaptive communities. Adaptive communities must be learning communities keeping abreast of change. Learning is central and learning cities will be the truly smart cities in the quest for sustainable economic prosperity and social well-being, and as well as traditional entrepreneurs they will develop social entrepreneurs as a product of their socially inclusive policies and practices.

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Chapter 18

Glasgow as a Learning City: The Legacy of the Commonwealth Games

Lynette Jordan

Abstract Hosting a Mega Sporting Event in Glasgow, Scotland: 2014 was an exciting and challenging year for Glasgow; exciting because the city hosted the XX Commonwealth Games (CWG) Scotland or the Glasgow Commonwealth Games (CWG) and challenging as there were great expectations about what the legacy would be after the Games were long gone. The city fathers looked optimistically towards a period of prosperity, growth and vibrancy after the sporting activities. The citizens of Glasgow were encouraged to see this event as an opportunity for the development of the city. This was expected to be through an increase in business growth due to this one-off event. So what makes Glasgow believe it will prosper and thrive after the Games are a distant memory? Why do the politicians and businessmen think they can handle the growing competition between cities in both Scottish and UK regions? How will Glasgow sustain growth against the harsh backcloth of a world recession? It is suggested that entrepreneurs are needed to emerge to boost economic direction both during and after the Games. Other changes needed are strong regional, sustainable policies, participatory citizenship and new models of democracy which consider the future economic position over a longer term period, i.e. over decades rather than over a few short years. Glasgow's slogan is, "People make Glasgow!" so we explore what the Glaswegians will be left with after the Games and what they can offer as citizens for the future of Glasgow.

The Legacy Themes for the XX Commonwealth Games Scotland (CWG)

As the second city of the Empire in the nineteenth till mid-twentieth centuries and following a long period of industrial decline, Glasgow returned to robust population growth, with almost 16,000 people locating to the city from 2004 making it

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Scotland's largest city. More recently in 2012, 595,080 people lived in Glasgow; this number has reached 600,000 as early as 2016 rather than in 2018 as expected. Scotland's most populous city is an economic powerhouse that generates nearly £17 billion gross value added to the nation every year. Glasgow now generates one-sixth of Scotland's GDP.

In 2014 after the UK government had committed a £1.5b investment in the city in advance of the Commonwealth Games, and pledged 70% of Games contracts to local Scottish firms, Mr Alex Salmond, who was the First Minister in 2014, claimed Scotland to have a 'Can-Do' ethos. He said he expected "a lasting legacy to arise from these Games, creating employment and training opportunities for thousands of young people" (Crosby 2014:1). The substantial budget was set in place leading up to the start of the Commonwealth Games which were due to start in August 2014, egged on by a huge wave of optimism and enthusiasm from the City of Glasgow's politicians, business sector and most citizens.

However, there was a level of cynicism expressed from some who lived either in the areas or who would be affected by the building preparations which was not always captured by the media. With much media attention and as if to confirm the citizens' fears, just before the opening of the Games, the UK Chancellor George Osborne announced nearly £24 m in new funding for Glasgow's life sciences, business and arts sectors.

As soon as they had won the contract for the Games in 2009, the Scottish Government had declared that they hoped that the CWG would provide "a Scotland-wide games legacy plan". This was the third time that Scotland had been chosen to host the Games. This was a big deal for Glasgow as well as Scotland as previously they were held in the capital city of Edinburgh, the first time was in 1970 and the second in 1986. The CGC also needed to be evaluated effectively, so the legacy plan was published as *A Games Legacy for Scotland*. This set out the indicators which would be used to measure success and covers a ten-year period to 2019 and was set around four themes: Flourishing, Active, Connected and Sustainable. The Scottish Government explained that embedded within each theme were "the five underpinning principles of: enabling diversity, ensuring equality, enhancing partnerships, encouraging community engagement and embedding sustainability" (Scottish Government 2014:1)

According to the Scottish Government, the Assessment programme had two main aims:

To maximise, manage and record the sustainability of the Glasgow 2014 Commonwealth Games, raising the bar for sustainability at future Commonwealth Games. To provide the Scottish events industry with the knowledge and tools necessary to increase the sustainability of events throughout Scotland, as a Legacy from Glasgow 2014 and the other major events hosted in Scotland in 2014 (Scottish Government 2014:1).

According to Legacy 2014, the concept of "legacy" is about "using the unique opportunity of the Games to deliver lasting change across the whole of Scotland—

now, in the run-up to the Games, and in the years beyond” (2014:1). This can mean different things to different people, for example Legacy 2014 claims that:

- **For a Scottish business** it might mean winning a Games-related contract which paves the way for further contracts and new markets, at home or overseas.
- **For a young person** it might mean a job, or an apprenticeship, or a role as a Youth Legacy Ambassador.
- **For schoolchildren** it is about the opportunity to learn about the Commonwealth and the Games, about values and other countries and their cultures.
- **For our communities** it’s about improving local facilities, taking part in cultural events, working together to celebrate the Games, and engendering a true community spirit.
- **For every one of us** it is about being inspired to become more active, whether that is through walking or cycling or taking up a sport (Legacy 2014:1).

The strategy was delivered through approximately eighty projects structured under the six themes. These are the goals which face Glasgow over the next ten years in order to prove sustainability as well as growth, and the choices made about future investment will determine the real legacy of the Commonwealth Games. Clark and Kearns (2014) in their in-depth, mixed method, longitudinal study set out the themes determined by both the Scottish Government and the Glasgow City Council in an easy to understand format. As can be seen in Table 18.1, the themes have commonalities but also different priorities so those involved in evaluating the success and impact of the CWG need to take into consideration all of the themes, i.e., from both national and regional perspectives. Setting out a summary of the legacy, Clark and Kearns explain, “Legacy aims for the Games, set by both the Scottish Government and Glasgow City Council, covered economic, social and environmental objectives but with the economic having primacy in both cases” (Clark and Kearns 2014:2).

Local Responses to the Regeneration Plans

The Games partners who worked collaboratively to pull off the Commonwealth Games included the Scottish Government, Glasgow City Council, the Glasgow 2014 Organising Committee and Commonwealth Games Scotland. Although much of the investment went into the renovation of existing facilities, e.g. Hampden National Stadium in the south side of the city, the opportunity was taken to regenerate the area of the East End of Glasgow and clear many derelict sites in the East End where the new Emirates Arena, the Sir Chris Hoy velodrome and the Athletes Village costing £500 million were to be built.

The renovation went ahead with some criticism from the people of Glasgow. In Dalmarnock, some local citizens became concerned about the so-called “legacy” of the Games in a different way. When it became clear that local houses and small businesses would have to be pulled down or closed to make way for these huge

Table 18.1 Glasgow city council and Scottish government legacy themes (Clark and Kearns 2014:8)

Glasgow city council	Scottish government
Prosperous: – Growing businesses; building careers	Flourishing: – Scottish business growth – Scotland as a business destination
International: – Glasgow’s image; attracting events; inward investment; tourism	Connected: – Scotland’s image as a creative nation – Artistic and cultural engagement
Inclusive: – Volunteering; learning	– Understanding of other nations/cultures
Accessible: – Transport & connectivity	Sustainable: – Improved physical environment (G&EE)
Accessible: – Sustainable travel	– Improved social environment (G&EE)
Green: – Use of green spaces; sustainable living standards – carbon emissions; waste	– Empower communities in Scotland – Sustainable design – Environmental responsibility
Active: – Inspiring physical activity & sports participation – Providing world-class facilities; – Active culture; sports club development	Active: – Helping Scotland’s population to be more physically active – Active infrastructure – Sporting success

construction projects, local people began to show their concerns in different ways. Some were worried about the loss of their homes after living in them for many years and put up a fight to remain in the run-down tenement buildings until they were either housed in the area or street they wanted or awarded appropriate compensation. Some lost jobs or their small local businesses and despite offers of compensation they argued that big business was squeezing out the smaller enterprises. The local community centre had to close leaving people concerned about what would happen to the services and groups who used the venue, especially the elderly and the youth using the centre. A BBC film entitled *Commonwealth City* documented this action and recorded and identified the issues and the feelings of local people and their representatives in Dalmarnock and the East End. Robert Kennedy, a play worker, in an interview for Wainright of the Guardian, while across the road, builders were working on the new car park for the Games explained,

This place has had its heart ripped out. We used to have a cafe and a chemist, two newsagents and a chip shop, but all that’s been flattened. They took away our high street, leaving us without any amenities for the last three years, and what have we got to show for it? ...A “transport hub” (Wainright 2014:1).

He was referring to how the community centre was to be pulled down to make way for the Games coaches’ parking space. Another young resident and active member of the Scottish Youth Parliament David Stewart born and brought up in Dalmarnock in the East End, claimed, “The membership (for the sports facilities) is

astronomical”. David ran the youth events in the Dalmarnock Centre’s temporary home, just south of the arena. “It’s also really expensive to hire a space for our youth groups, and most local people can’t afford the cafe either. It doesn’t feel like it’s been designed for Dalmarnock” (Wainright 2014:1).

Another local voice but more positive view came from Yvonne Kucuk a local authority Councillor, “I wanted to get away from the negativity surrounding the Games”, said Yvonne who is also a community organiser, with a university degree in Community Development, and who set up the People’s Development Trust (PDT) to ensure maximum local benefit from the regeneration. This community action group was set up to, “...act as a vehicle to ensure that maximum community benefit and lasting legacy is secured from the planned regeneration programmes and Commonwealth games within designated communities in the East End of Glasgow” (Wainright 2014:1). Instead of reacting to the changes, Kucuk decided to look at how the area could benefit from the upheaval and relocations. After what she described as a seven-year battle, Kucuk secured £3 m for the new centre, which was designed by local architect Wilson Gunn to house a community hall, cafe, general practice surgery, chemist and children’s nursery, as well as providing sixty new jobs. Kucuk claimed in Wainright 2014:1 that, “The regeneration agencies are obsessed with the economic legacy, building these huge roads that split our communities”. She said, pragmatically,

What can we squeeze out of it?...you’ve got to take the people with you. The (new) Dalmarnock Centre will be the only social legacy of the 2014 Commonwealth Games. Once the confetti’s blown away, we’ll go in and grab it.

Despite these local concerns being voiced, the regeneration programme was pushed on by the City Council and the support of the business community with the promise that there was ‘A Golden Opportunity, Coming Soon!’ as seen on a local billboard. “We have been presented with the best chance in a generation, and possibly a lifetime, to improve the lives and raise the aspirations of every Glaswegian,” said Steven Purcell, the then-leader of Glasgow City Council” (Wainright 2014:1).

In an interview with Wainright (2014:1), Councillor Archie Graham deputy Leader of the Glasgow City Council at the time and executive member for the Commonwealth Games, (who has since received an OBE for this role with the CGC), commented on the huge cavernous velodrome which cost £113 m. He said in relating to the mind-boggling venue, of the velodrome and stadium, “It saves money by bringing everything together under one roof” p. 1.

Eventually the old Dalmarnock Centre would have to come down to make room for the new structures with no initial guarantee that it would be replaced but the PDT pushed the regeneration machine to ensure they would gain a new community venue. The previously mentioned BBC film *Commonwealth City* did much to publicise the issue and the community struggle. From the struggle came the wonderful Legacy Hub, the children’s adventure playground and the Legacy Garden which were both worth waiting for as they fit in with the new image of

Dalmarnock as a thriving and lively community, after all the destruction and upheaval.

As a grass-roots organisation, PDT claim they were established “to act as a vehicle to ensure that maximum community benefit and lasting legacy is secured from the planned regeneration programmes and Commonwealth Games within designated communities in the East End of Glasgow” (People’s Development Trust 2016:1). PDT in their website explains that they are trying to use their past experience gained from involvement in other major regeneration initiatives to influence the future. PDT believes that, “Effective and sustainable regeneration can only be achieved if there is involvement and a sense of ownership by local people in the regeneration process” (People’s Development Trust 2016:1). Speaking to Shannon of Holyrood magazine in 2015, Kucuk said, “It is true that the community of Dalmarnock suffered unprecedented disruption to make way for the Games—most felt powerless in regards to what was proposed in the way of regeneration and I think a lot of that could have been handled better, communication wise” (Shannon 2015:1).

In this article, Kucuk reiterates the People’s Wishes as devised by PDT (PDT 2016:1) who want:

- A new community facility to replace the old Dalmarnock Centre which was demolished to make way for the transport hub: the new Legacy Hub opens in a few weeks’ time.
- Jobs: several local people gained employment directly linked to the Games including jobs in the Emirates Arena, Tollcross Swimming Centre, Scotstoun Sports Centre and the Healthy Living Centre.
- Volunteer opportunities: local people had the chance to act as Clyde-siders and Host City Volunteers as well as other opportunities which arose through the Games, as well as volunteer opportunities which would come with the Legacy Hub.
- Training opportunities: most people locally were aware that they would need training to enable them to access jobs that might come up as part of the construction of the arenas and the village as well as Post-Games in the Legacy Hub. Kucuk said there has been great success especially with young people who gained jobs locally and “we increased the number who have gone onto further education and degree level”.
- New homes: local people were especially excited about the new housing the Village would provide.

The difficulty for PDT is that they have been established with the support of a range of partner agencies including Glasgow City Council, Greater Easterhouse Regeneration Area (GERA) and Clyde Gateway. This means that they can never operate as a non-governmental organisation (NGO) truly representing the local residents although I do believe PDT will take a good stab at it.

Building the Foundations: Glasgow the Learning City

Since the knowledge and new technology global economy arose out of the cinders of the Western and Northern countries' post-industrial pyre, Glasgow has seen itself as primarily a learning city since the 1990s and has grown to become a leading proponent of education and learning as a way forward in the world. However, in the twenty-first century, due to few industrial opportunities and high levels of unemployment in the post-industrial economies such as Scotland, it is being forced to reassess its focus as a more entrepreneurial city and consider how to present itself more effectively in the current global climate.

Within the challenging global economic system, urban conurbations cannot afford to remain static but must adapt to new economic and social circumstances as swiftly as possible or they will be left behind in the globally competitive capitalist economy. Glasgow has reinvented itself in the past, yet still remains committed to the values of a learning city as well as to that of building an enterprising culture. These two visions are compatible, and there is no reason why Glasgow cannot be both. The challenge is therefore about recognising that global competition forces a constant re-visioning of image and identity and that to ensure success a city must firmly hold on to the values of citizen participation, adaptation to diversity and learning as a lifelong activity for all.

Glasgow launched itself as an official Learning City in 1999 and still claims that this concept is a driving force for the city's redevelopment. As a learning city, Glasgow remains committed to the development of a culture of lifelong learning so that it can "thrive in the complex knowledge environment of the twenty-first century" (Hamilton and Jordan 2011:198). The initial impetus came partly when Glasgow found that it was in a position to take advantage of fresh political initiatives such as the establishment of the new Scottish Parliament which engendered a renewed interest in Scottish culture and identity. At the time, a substantial budget of around £5 million was set aside by Glasgow to take the learning city initiative forward.

In 1999, large investment was clearly needed in Glasgow and even more so today in a city with a population of 600,000 and some of the highest social deprivation rates in Europe as evidenced by relatively low-life expectancy, poor housing stock and high levels of unemployment concentrated in some parts of the city, especially in Dalmarnock in the East End of Glasgow which was the site of the main mega-sports complex. In 2000, educational disadvantage was found to be higher where there were multiple factors of deprivation that included a concentration of lower skilled employment, high rates of public or social housing tenancy, higher rates of illness and death, poorer nutrition and higher levels of drug use and crime (Glasgow Learning Alliance 2000). Kearns and his colleagues expressed the concept of learning cities well at the time,

Cities are not simply places where people live and work: they are also places where people experience leisure, culture, enterprise and education...A Learning City unites all the diverse providers of learning to meet the needs and aspirations of its citizens. Through the range of

local resources they bring together Learning Cities can provide local solutions to local challenges (Kearns 1999:6).

The decision for Glasgow to become a learning city was seen as a logical response to facing up to the challenges of the loss of traditional industries, and wanting to compete in the developing knowledge-based economy of the twenty-first century. The central place given to lifelong learning was also in the spirit of a city whose oldest university had been built on the traditions of the Scottish enlightenment. Glasgow needed to bring opportunities for learning to the broader community. In 2010, a super-college, New Glasgow Campus, was established which would serve to create a learning district in the city. The number of colleges of further education (FE) grew to thirty-seven in the greater Glasgow and Lanarkshire areas, and for a decade at least the colleges of FE ruled the learning sector. Since then the number of FEs has decreased from thirty-seven in 2011–2012 to twenty in 2014–2015. For several economic and political reasons, since October 2012, twenty-five colleges have merged to form nine colleges with 67,000 students. There are a total of ten colleges formed through mergers, with City of Glasgow College having formed in 2010 (Audit Scotland 2015:11). It was hoped that being a learning city would bridge the gap between economic and social initiatives and see the city from a more holistic perspective.

Today Glasgow's five higher education institutions (HEIs) provide, and focus on, different areas of learning and research with 90,000 students with internationally rated schools of science, law, management, medicine and business. The University of Strathclyde has the only business school in Scotland recognised by the world's three top accreditation bodies and the University of Glasgow has an international reputation as a research leader in medicine, educating students from home and abroad for over 550 years.

A significant factor in the development of Glasgow as a learning city was the decision to consult with local people on the strategies which evolved. When discussing partnerships and their role in learning cities, Glasgow Council claimed to see the people of the city as the resource of the city. Positive marketing of the learning city tends to be of the kind which celebrates the involvement of citizens at a local level. It can be argued that regeneration depends upon joint learning to reconstruct communities through partnerships and public participation, while reflecting back on and celebrating what has been achieved.

It is believed by many proponents of learning cities that they can fulfil their potential if their citizens are truly involved in determining future policies for the development and direction of the city. Glasgow claims to aspire to developing the kind of learning city where all of its people and organisations flourish through lifelong learning. The intention was to encourage individuals, employers and organisations to see themselves as not only partners but as lifelong learners, and to help the city learn how to link this learning to social and economic regeneration. An overall objective was to understand how different parts of city life could connect together, i.e., in social, cultural, political and economic ways.

A few years earlier, Scottish Enterprise Glasgow had led a Learning Inquiry which was undertaken from 1998 to 2002 with five themed action groups (TAGs) utilising a process of consultation, investigation and action and led by Stephanie Young who was directly involved in setting up the initiative. She explains that it was developed “in response to Glasgow’s learning needs” (Young 2003:1). A Citizens Jury in 1999 on learning had shown that, “Ordinary learners could make sensible decisions about complicated policy issues and add vital new contributions to a complex debate” (Young 2000:1).

This was a strategic collaboration between the private and public sectors that sought to involve both in a problem-solving and decision-making process. Research has suggested that it is crucial for learning cities to foster partnerships between the public and private sectors in order to contribute to the European knowledge-based economy and stimulate knowledge creation and diffusion (Longworth and Osborne 2010).

The challenge for Glasgow, then, was to understand the reasons why so few citizens at that time participated in learning, and why so few of the population achieved education and training qualifications. The Inquiry led to the creation of a Learning Network and Lifelong Learning Information Service. The Glasgow Development Agency (GDA) had a key role to bring together sectors and institutions which encouraged lifelong learning, and through the resulting emerging partnerships, Glasgow made a commitment to engage with citizens on the way forward for their communities in the area of lifelong learning. The partnerships which developed eventually took over from the GDA, which can be seen as a mark of success. This commitment to engaging with local people was no different for Glasgow when it faced the task of hosting the CWG in 2014.

From Learning City to Entrepreneurial City

Although some momentum has been lost along the way, Glasgow has continued to claim to be a learning city with lifelong learning policy initiatives supporting the economic strategies. Glasgow is undoubtedly continuing to seek to create a knowledge-based society in line with the best principles of a learning city. However, it also needed to meet the challenges of the global recession that impacted on many economies from 2008 to 2009. It had to make a commitment to be more entrepreneurial in its approach. Scotland, as well as Glasgow, needed to be tuned into the approach of a learning city which is born of collaboration and collective action. As a learning city, Glasgow has a strong reputation for community action but a lesser one for “real” participation. Glasgow needed to continue to reach out into the areas which needed support for learning most, and to extend, not reduce, the provision. The communities which are most deprived needed to be encouraged to be self-sufficient and sustainable, given changes and cuts in local and public services, but these communities needed support to do this from learning organisations of all shapes and forms—but mostly from the business sector.

In terms of regional development, recent research by the Centre for Cities think tank in an article for the (Daily Record 2014:1) revealed that Glasgow may be the fifth most entrepreneurial city in Britain; although it has lagged behind London which hosted the Olympic Games in 2012. However, this may be an unfair comparison as Clark and Kearns (2014:76) explain, “The scale of the Glasgow CWG is much smaller than the London Olympics, by a factor of 10–20 depending on the item of comparison. The use of venues for the CWG is also less concentrated on one site than was the case in London, so expectations for economic impacts in Glasgow need to be kept in perspective”. The Glasgow’s City Plan addresses issues like design, heritage and traffic planning and management, and the metropolitan Glasgow’s *Vision for the Future of the City Region* addresses Glasgow regeneration projects specifically over the next decade.

Adams et al. (2011:6) commenting on regeneration in other urban cities suggest What really matters in creating better places is:

- Good leadership and clear vision
- Effective delivery capacity
- Coordinated delivery in action
- Sustainability and Stewardship over time.

In a presentation offering a clear model for “placemaking” to the *Delivering Better Places in Scotland* conference organised by the Scottish Government, Adams and his colleagues (2011:7) claim that “leadership and vision matter” because it

- drives forward action, breeds confidence, reduces risk and widens participation
- Effective public sector leadership involves high-level political & professional commitment over time
- an effective champion/place promoter—often a dynamic individual working in a supportive organisational context
- Primary task of a place promoter is to nurture compelling vision of the future place and foster a placemaking culture
- European examples generally had stronger leadership and placemaking culture, developed over a longer period of time.

According to Project for Public Spaces (PPS) (2015:1), “placemaking inspires people to collectively re-imagine and reinvent public spaces as the heart of every community. Strengthening the connection between people and the places they share, placemaking refers to a collaborative process by which we can *shape* our public realm in order to maximise shared value”. PPS continues, “With community-based participation at its centre, an effective placemaking process capitalises on a local community’s assets, inspiration and potential”. The Glasgow Centre for Population and Health (GCPH) at the University of Glasgow also explains that placemaking can be about, “Local participation and leadership around neighbourhood regeneration has been possible through the delivery of Glasgow City Council’s Stalled Spaces initiative. Local groups are invited to bid for funding to develop plots of vacant and derelict land on a temporary basis” (Glasgow Centre

for Population and Health 2016:1). So, with this strong commitment to connecting with local people and partnership working, Glasgow set its mind to organising the Games with a more entrepreneurial perspective.

The Obstacles and Opportunities for a Scottish “Can-Do” Economy

According to Alex Salmond, Scotland’s First Minister in 2008, “Obstacles to entrepreneurial vision are the rising of commodity prices and the credit crunch which has weakened advanced economies across the world” (Salmond 2008:1). He claimed that there was a need to “improve physical infrastructure, expand the size and skills base of the labour force, build strong partnerships and tackle social deprivation” (Salmond 2008:1). Just eight years later, the First Minister Nicola Sturgeon used her 2016 New Year message to the people of Scotland to reiterate and promote the opportunities of a “Can-Do” culture. She then set out enterprise and innovative public services as priorities for the forthcoming twelve months. In her New Year message, the First Minister promoted 2016 as Scotland’s Year of Innovation, Architecture and Design, highlighting Scotland’s pioneering record in areas such as health care, informatics and entrepreneurship (Scottish Government December 2015a). She went on to say,

Now we’re a world leader in low carbon technologies. We have a long tradition in medicine and life sciences – Now we are a vibrant and growing hub for successful new tech companies, and known for our strengths in areas like video games and informatics (Scottish Government 2015a:1).

Most importantly, she claims,

We’re also determined to encourage entrepreneurship...But our success won’t come just from entrepreneurs or scientists. I want to see a Can-Do culture define us as a country on every level. In 2016, we will celebrate a proud part of our history—our track record of invention and innovation—while continuing to support and encourage the entrepreneurs and innovators of the future; we will also step up our work to build a fairer and more prosperous country (Scottish Government 2015a:1).

The emphasis on social as well as economic factors is hinted at and suggests a more social rights-based approach to the Scottish entrepreneurial strategy—that of fairness and justice. The First Minister then goes on to talk about “fair work”. For example, if given additional devolved powers based on the Smith Commission recommendations (Scottish Government 2015a), she would,

Abolish fees for employment tribunals, extend the duty on public authorities to publish information about the gender pay gap to promote the real living wage’. Sturgeon believes that the living wage will, ‘help businesses increase productivity, reduce absenteeism and improve staff retention’ (Scottish Government 2015a:1).

The Scottish Government intention was to invite the Fair Work Convention to create a new framework for the relationship between employers, employees and trade unions, public bodies and government. In terms of improving productivity, the best way to do this, it was believed, was to improve partnerships between employers, employees and government. John Swinney, Member of Scottish Parliament, Cabinet Secretary for Finance, Employment and Sustainable Growth in his ‘Can-Do’ strategy for Scotland announced in 2013, “Our vision is of Scotland as a world-leading entrepreneurial and innovative nation—a Can-Do place for business. We invite all of our enterprising citizens, businesses and organisations to join with us, in a Team Scotland effort, to make that vision a reality” (Scottish Government 2015b:1).

The Opportunities for Glasgow as opposed to Scotland seem strong enough to fuel this entrepreneurial stage of development. There is a boom in the number of workers in the 20–39 years of age labour market, one of the best performing in the UK. Businesses claim it is easy to recruit and retain high-quality employees and local labour costs compare favourably with the rest of the UK. In 2014, 51% of Glaswegians in employment had a National Vocational Qualification of Level 3 or above. This promotional tag of “Can-Do” incorporates a strong Scottish work ethic combining the “Can-Do” concept with traditional renowned Glaswegian friendliness. The Entrepreneurial Spark, the business accelerator and start-up initiative, 2014, who talk about a “go do” as well as a Can-Do approach have bases in Glasgow as well as Edinburgh. It is the world’s largest free business accelerator offering “five months business support to start-up companies—funded by private capital, contributions from public sector organisations and corporate sponsorship” (Entrepreneurial Spark 2014:1).

According to Glasgow: Scotland with Style for Business (2014), Glasgow is now home to major financial companies including among many others, JP Morgan and Morgan Stanley. There is a vibrant entrepreneurial centre that has attracted leading brands including Dell and Scottish Power. Glasgow: Scotland with Style for Business claim there is comprehensive business support and guidance on recruitment, training, premises, technology and grant assistance, including European Regional Selective Assistance to support new business and employers. Glasgow’s success in attracting blue-chip companies has helped create more than 48,000 new jobs in recent years (Glasgow: Scotland with Style for Business 2014:1).

Glasgow has been awarded many Efficiency Prizes in an international context being in the top fifteen of Europe’s best-performing financial centres and being ranked forty-first worldwide. There was also the establishment of the Glasgow Enterprise Board, set up to get the business community, academia and the financial sector working together to rejuvenate an expanding Glasgow’s business base. Other aspects included Glasgow’s Economic Leadership, policies to ensure continued economic growth in the city. However, there can be no doubt that the most exciting prize took place in 2014 when it hosted the Commonwealth Games.

The Impact of the Commonwealth Games 2014 so Far

The legacy at first glance would seem to be taking the opportunity to invest only in existing buildings and renovate them for longer term future use. However, as early as 2009 when the bid was approved, investment was made in the new-build sports arenas in the East End. The surrounding venues and areas outside the East End where the mega-sports structures were built were due for renovation so funding was used opportunistically to regenerate these resources in the Glasgow hinterlands. This included funding the following:

- **Pacific Quay Digital Media Quarter:** due to the boom in digital and new media activity globally.
- **International Financial Services District (IFSD):** £1b public–private project, a designated Glasgow city centre location for international financial and business services companies.
- **Glasgow Harbour:** led by Clyde Gateway more than £1.2 billion invested in creating an urban community of mixed-use development.
- **SECC Precinct:** a major renovation project of £523 million to transform the Scottish Exhibition and Conference Centre into a larger-scale exhibition, conference and entertainment complex.
- **City Science/International Technology and Renewable Energy Zone (ITREZ):** an urban business quarter specialising in science and technology, as a part of the Strathclyde University campus Invest Glasgow (2016:1).

By 2015, the Scottish Government, the local authorities of Glasgow and other partners were keen to demonstrate that the Commonwealth Games had brought prosperity to Glasgow and the surrounding area. Archie Graham, deputy leader of Glasgow City Council, announced that there were more people taking part in sport and that further events had been secured by Glasgow such as the World Gymnastics Championships and 2018 European Games since the Glasgow Games in 2014. He claimed, “There’s also new housing in the east of Glasgow and a refurbished train station, new roads around the area as well as shops and a doctor’s surgery, so there’s a fantastic legacy”. Graham also said, “The legacy of the Games didn’t start or stop at the time of the closing ceremony, and it won’t stop now at the one-year anniversary” (Gillett 2015:1).

As explained in the Scottish Government Post-Games report, “The Scottish Government, Glasgow City Council and CGS (Commonwealth Scotland) engaged in early discussion on how to wrest legacy from the event in a more successful and meaningful way than had ever been achieved before” (Scottish Government 2015c:10). According to the report, in financial terms, the Games contributed “more than £740 million gross to Scotland’s economy including £390 million for Glasgow’s economy and supported on average 2100 jobs each year from 2007 and 2014, including on average 1200 in Glasgow” (Scottish Government 2015c:1).

The Post-Games report also claims that the Games achieved the following:

- a labour market boost among those who would benefit most, with over 11,000 young people across Scotland, around 6000 from Glasgow, benefiting from the range of national and local employability programmes
- the Glasgow 2014 Culture Programme attracting a mass audience of 2.1 million attendances and 600,000 participants who spent in net terms, around £73 million to the economy in 2014, increasing the size and reach of the Games events
- significant investment in regeneration, particularly in the East End of Glasgow, Rutherglen and South Lanarkshire, with land remediation, transport infrastructure and
- new sports facilities like the Sir Chris Hoy Velodrome, Emirates Arena and International Swimming Centre, all of which are now being used by the public (Scottish Government 2015d:1).

In addition to these achievements, the Leader of Glasgow City Council, Councillor Gordon Matheson, said:

Glasgow saw £390 million boost between 2007 and 2014 helped us through what was a particularly challenging time in the global economy. Glasgow-based firms reaped the rewards by winning £423 million of Games contracts. The £50 m Glasgow Guarantee employment initiative has also helped around 6000 young Glaswegians aged 16–24 years, veterans, over 50 s, and graduates into employment, apprenticeships or training and we have recently expanded the scheme even further (Scottish Government 2015d:1).

The Commonwealth Games Federation reported that, “four thousand people from 400 communities across Scotland took part in the Queen’s Baton’s 40-day relay trip, watched by about 570,000 people. Millions took part in the baton’s 100,000 mile trip around the Commonwealth” (Kirkcaldy 2015:1). This was indeed a very popular part of CWG which helped boost the profile as well as engaging with local people throughout Scotland since anyone from the community could carry the baton.

Speaking to (Kirkcaldy 2015:1) for Holyrood in the run-up, Anne MacColl, chief executive of Scottish Development International (SDI), said

...our food and drink sector ... now exports something like £5.3 billion-worth of products every year. The whisky industry is a massive pull and is a global industry... what we’re really great at in an internationally competitive sense, ...helps us to be seen as a globally open-minded economy and I think that’s absolutely critical in today’s world (Kirkcaldy 2015:1).

She explained that “The budget was £575.6 m with organisers targeting £112.6 m to be raised by Glasgow 2014 through commercial income, and over £90 m alone was spent on security alone”.

Kirkcaldy (2015) also reported that, in the lead up to the Opening Ceremony, other benefits included the hotels and hospitality sector business which benefited greatly with “about 250,000 people stayed at least one night in Scotland because of the Games. On average, tourists stayed for 5.8 nights, meaning they were in Scotland, on average, 6.8 days” (Kirkcaldy 2015:1). Another indirect benefit lay in

the charity sector as the CWG raised £5 m for UNICEF by the end of the Glasgow 2014 Closing Ceremony. Returning to our local community and benefits for the relocated residents, Councillor Kucuk said there has been great success especially with young people who gained jobs locally and “we increased the number who have gone onto further education and degree level” (Shannon 2015:1).

In another article for *Holyrood*, (Shannon 2015:1) asked Kucuk directly if she felt the legacy wishes had been met. She said, “I do believe the Games was a major catalyst for change in the area, not only in the physical appearance but a change in the mindset of people, especially our young people who saw it as a once in a lifetime opportunity for them to gain opportunities that might not have presented themselves had it not been for the Games” (Shannon 2015:1). She continued, “For the first time in generations, we have seen local young people gain full-time, permanent employment, their first driving licences and their first passports and holidays abroad”. One or two have even bought their first home in the Village”.

In terms of housing, most people were relocated in neighbouring areas, mostly still within the East End but not in the Dalmarnock area. The 700 sustainable homes were built for the Athletes’ Village then sold to the public as soon as the Games were over. Local people were in competition with each other to buy the houses but not everyone could afford them.

In 2014, Mike Cantlay, chairman of VisitScotland (Scotland’s national tourism agency), stated that Scotland had experienced a rise in tourism in every single region of the country, “the highest ever combined spend by domestic and overseas visitors in a decade” (Kirkcaldy 2015:1). He continued that Scotland had also gained, “significant investment in tourism across Scotland”. There was evidence to suggest that when people visited the CWG, they took advantage to see other parts of Scotland.

Finally, the Games Legacy Evaluation Working Group (GLEWG) reported that “The £740 million contribution to Scotland’s economy from the Games is made up of three elements:

- The Games-related capital programme (sports venues and the Athletes’ Village) contributed £320 million gross to Scotland’s economy over the six years to 2014.
- The activities of the Games organisers (Glasgow 2014 Ltd) to deliver the Games contributed £300 million gross to Scotland’s economy over the eight years to 2014.
- The economic impact of spending by Games visitors contributed £120 million gross to Scotland’s economy in 2014 (GLEWG/Scottish Government 2015:1).

In terms of people participation in the planning, the mascot Clyde and the Games tartan were designed by a Scottish school pupil, while primary school children from across Scotland created artworks for each athlete and official. Although this sounds like a small contribution to participation, the branding of Clyde on T-shirts and other consumer items meant the profile was raised for both local children and

tourists alike as a recognisable symbol of CWG. Nicola Sturgeon, First Minister (2015), praised the Games for having provided “20,000 opportunities to take part through volunteering” Scottish Government (2015a:1). These opportunities took place at the Games, the Ceremonies, in Glasgow City at Games Time and the Glasgow 2014 Cultural Programme. A year later, in 2015, Nicola Sturgeon, First Minister, announced two new initiatives, “60 national legacy programmes in place, with the latest, a leadership programme for young people called 33Sixty” (Scottish Government 2015a:1).

Conclusions

The Scottish Government (2015c:10) in their Post-Games Report “An Evaluation of Legacy from the Glasgow 2014 Commonwealth Games”: pull together some interesting points on the legacy and claim,

9.25 There is evidence of the community in the East End feeling their neighbourhood has improved as a place to live, to a much higher extent than is found in other areas of high deprivation across Scotland. Feelings of neighbourhood satisfaction and neighbourhood safety were notably higher among GoWell East respondents post Games, compared to their perceptions in 2012

In a later article, they see disadvantages in focusing mostly on the “economic benefits”. Preuss (2006:26), in Clark and Kearns (2016:21), suggested it is inappropriate to measure in a quantitative way a mega-event in terms of a “simple surplus or deficit figure” and claim it “is impossible and even wrong”. Anderson, in Clark and Kearns (2016), points out that this is the dominant methodology utilised in the economic evaluation of mega-sports events (Andersson et al. in Clark and Kearns 2016). Clark and Kearns (2016) also point out that despite the attempt to present a socially just approach to the Games, other areas in Glasgow just as deprived as the East End may feel resentment at the bulk of investment being focused on the East End poorer areas. The same criticism would apply to those outside Glasgow not forgetting that it was Scotland as well as Glasgow that was hosting the CWG in 2014. As Clark and Kearns (2014) explain, according to the Scottish Government over 40% of Glasgow is deprived. They suggest that in these circumstances, it is difficult to prioritise the host community against a principle of equity in the treatment of all communities in need.

In respect to the amount of issues the CWG tried to address, including jobs and housing, Clark and Kearns (2016:66) also suggest it might be better to have focused on one or two areas of regeneration than trying to cover everything that needed renovating. They explain, “The literature on multi-sports events suggests it would also be worth considering whether a focus on one or two key economic sectors could be a viable and successful strategy for the east end”.

Finally Clark and Kearns (2016:66) suggest that there is a need for further evidence of sustainability and the continuation of the regeneration process.

They suggest, “We consider that the economic regeneration of the east end study area is possible if the regeneration effort continues for a further 10–15 years after the CWG”.

The Post-Games report from the Social Science Research series of 2015 refers to the earlier GoWell studies of Clark and Kearns (2014) who suggest that,

There is evidence of the community in the East End of feeling their neighbourhood has improved as a place to live, to a much higher extent than is found in other areas of high deprivation across Scotland. Feelings of neighbourhood satisfaction and neighbourhood safety were notably higher among GoWell East respondents post Games, compared to their perceptions in 2012 (Scottish Government Social Science Research 2015c:10).

Many unanswered questions about the legacy remain, but much feedback already suggests the overall success of the enterprise. There can be no doubt that the Glasgow Commonwealth Games of 2014 were a great success from the point of view of the participation in the event with 690,000 visitors; 600,000 as participants, as well as the 20,000 volunteers assisting the event in 2014. The Dalmarnock Community centre was replaced by the Legacy Hub, and the Athletes Village provided new homes for sale in the area. The derelict sites were cleared, and the new mega-sport structures were installed for future use as well as for the Games. The Scottish Government in their Evaluation of Legacy from the Glasgow 2014 Commonwealth Games: Post-Games Report claims that, “East End residents experienced disruption during the Games, mainly due to transport, security and parking arrangements. A total of 72% of the GoWell East respondents reported one or two inconveniences during the Games, but a clear majority (77%) of these said they thought it was worth it for the enjoyment or benefit of the Games. The short-term risk, identified in the literature of business suffering from displacement during Games time, seems to have been averted” (Scottish Government 2015c:1).

In terms of additional interest in sport, it is easy to evidence but the impact on health and well-being will take some time to prove. As the Post-Games report states, “There is some evidence of a ‘demonstration effect’ of increased interest in sport and exercise. For example, membership of sports governing bodies such as netball, triathlon and gymnastics represented in the Commonwealth Games has increased”. Furthermore it was suggested that, “attendance at leisure facilities has increased year on year in Glasgow and Scotland since 2010/11”. The report claims, “National population statistics also show a recent increase in physical activity in adults (in 2013). This is the first increase for a number of years” (Scottish Government 2015c:1).

In economic terms, the Scottish Government claim, “In terms of contract values, £669 million worth of Tier 1 contracts were awarded. Sixty-three per cent of the overall contract value was awarded to Glasgow-based companies and a further 13% to organisations based elsewhere in Scotland. Thus, 76% of contract value was awarded to Scottish-based organisations” (Scottish Government 2015d:1).

According to the Post-Games report, there have been approximately “40 legacy programmes operating in the area...including improving sport facilities, sports club

development, coaching and volunteering programmes, improving the physical environment, active travel, employability and work” (2015:1). Audit Scotland also claimed that in terms of contributing to the Games success, one of the key factors was effective partnership working. The others were “shared vision, clear governance arrangements, clear roles and responsibilities, appropriate seniority of staff in decision-making and good information sharing between partners”. This claim was supported by the four Games partners (Scottish Government, Glasgow City Council, Commonwealth Games Scotland and the Glasgow 2014 Organising Committee). This was achieved at both strategic and operational levels (Scottish Government 2015c).

The Post-Games report summaries the contributing factors to success as being, “Legacy was planned for early; informed by evidence; considered at each planning, investment and strategic decision-making stage; and embedded in existing policies and plans” (Scottish Government 2015c:1). In response to the complaint that the enterprise only benefited Glasgow, “Evidence also shows while the focus was clearly on Glasgow, benefits were felt across Scotland. Games visitors stayed in every part of Scotland, cultural events were held across the country, and grass-roots active infrastructure improvements occurred in each Local Authority area and businesses throughout Scotland benefitted” (Scottish Government 2015c:10).

The final part of the Post-Games report is due in 2018. The contents of this report will not only be a contribution to the learning on legacy and knowledge transfer for other future Games organisers but will determine whether it is indeed possible to have a kick start Games with a longer term economic and social benefit. As the Scottish Government claim, “The challenge will be extending and embedding these benefits to date in Scotland and Glasgow to secure lasting legacies into the future. A concerted and sustained focus by partners, embedding legacy outcomes into long-term efforts, will be critical in achieving many outcomes” (Scottish Government 2015c:1).

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Author Biography

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Chapter 19

Embedding Entrepreneurial Skills Development in Teacher Education

Kathryn David, Kathryn Penaluna, Elin McCallum and Caroline Usei

Abstract This chapter reflects upon the developmental process that informed the UK's first credit-bearing 'entrepreneurial educators' module within the Professional/Postgraduate Certificate in Education/Post Compulsory Education and Training (PGCE/PCET) programme, and the policy lessons that emerged from the work. Following a feasibility study conducted in 2009/2010, funded by the Welsh Government, the study programme was designed to complement the formal teacher training provision in the University of Wales Trinity Saint David and aims to develop a student teacher's creativity, innovation, problem-solving and business acumen, in addition to developing attributes such as the capacity to cope with uncertainty, ambiguity and risk. Teachers are provided with experience in business as part of their continuous professional development, giving teachers an opportunity to understand and embed the skills and attitudes that are required in the world of work and business into their teaching of the school curriculum. This chapter illuminates key factors, in particular how neuroscience informed the approaches to teaching and learning and outlines the module's indicative contents. It also outlines and aligns the relevant pedagogic practices that are employed. It concludes by presenting the catalysts that could drive further development of this area of work.

Introduction: The Drivers for Entrepreneurship Educator Development

Our premise is that if we do not develop teachers who can recognise, develop and demonstrate these skills, we could be disadvantaging students who need to be able to adjust to fast-changing entrepreneurial environments.

Over the last two decades, entrepreneurship has developed as a potent economic force and a high-priority item in public policy through many parts of the world. The

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Welsh Government's approach to taking forward the agenda was made explicit in the very first Youth Entrepreneurship Strategy in Wales, which outlined the aim 'to develop and nurture self-sufficient, entrepreneurial young people in all communities across Wales, who will contribute positively to economic and social success' (Welsh Government, 2004, p. 8). Commitment to this policy area is also evident across Europe. Seventeen countries and regions launched a strategy for entrepreneurship education between 2003 and 2015,¹ whilst, at the level of the European Union, all institutions are working on this agenda including the European Commission, the Council of the European Union and the European Parliament. This is an agenda that continues to grip the attention of policy makers at all levels.

This level of interest from policy makers was and remains rooted in the need for progress against the areas where entrepreneurship education has the potential to make a difference, as seen in Fig. 19.1. Drawn from a range of European and international sources, the logic model in Fig. 19.1 demonstrates both the education level and policy level drivers, within a framework of potential impacts of entrepreneurship education at the level of the individual, education institutions/teachers, economy and society (3).

The teacher is the gatekeeper to improving the quality of the learning experience, as the primary catalyst for change at classroom level. This is why, across almost all policy and strategy documents, priority is placed on training and supporting new and established teachers to introduce entrepreneurship education. The policy drivers linked to teachers are often translated into specific recommendations for action, which have become clearly recurring themes across European Policy documents:

- Fostering entrepreneurial mindsets through learning;
- Changes in teaching methods to embed the use of experiential learning;
- Evolving the teacher role into a coach/moderator role, supporting students to take the initiative in their education;
- Development of a bank of high-quality training and teaching resources;
- Networking schools and their teachers into local, regional and national support networks and mechanisms to share good practice; and
- Embedding schools and their teachers as part of the local and/or regional entrepreneurial ecosystem.

These themes were mirrored in Wales, where emphasis had been placed on providing continuing professional development for schoolteachers. The 2004–2009 Action Plan saw the training of over 2000 primary and secondary school teachers as well as hundreds of careers staff, building awareness of and expertise in entrepreneurship education, whilst enterprise managers in further and higher education delivered teacher training locally and often facilitated local knowledge

¹Seventeen countries/regions include the following: Northern Ireland 2003–05, Scotland 2003–11, Wales 2004–present, Lithuania 2004–2012, Norway 2004–present, Belgium 2007–present (Flanders, German- and French-speaking communities), Netherlands 2007–2012, Montenegro 2008–present, Denmark 2009–2012, Estonia 2009–present, Croatia 2009–2014, Bosnia Herzegovina 2012–present, former Yugoslav Republic of Macedonia 2014–present.

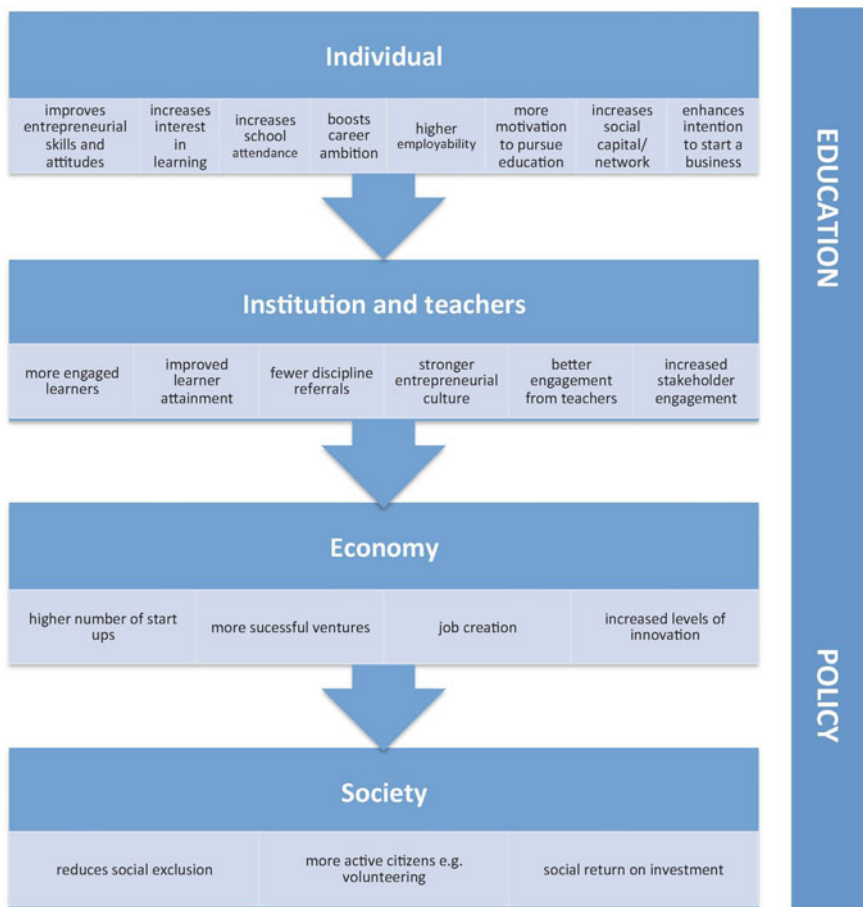


Fig. 19.1 Impact logic model [combined from range of sources, The content and evidence for this diagram has been collated from *Final Report—Expert Group on Indicators on Entrepreneurial Learning and Competence: Final Report* (European Commission 2014) *Entrepreneurship Education—Roadmap to Success* (European Commission 2015) and *Creative Schools* (Ken Robinson 2015) and National Consortium for Entrepreneurship Education Standards Toolkit (http://www.entre-ed.org/Standards_Toolkit/)]

exchange networks. Welsh Government also collaborated with the UK National Council for Entrepreneurship Education, and in 2007 funded seven enterprise managers from Wales to participate in the International Entrepreneurship Educators Programme, building expertise in Wales and opening up access to entrepreneurship education expert networks stretching around the globe.

In 2009, there were few other countries taking significant steps into teacher education, as many were only just launching their first strategy. European level policy was becoming increasingly more insistent in its calls for action on teacher

education, but there was little evidence of coherent approaches at national or regional level. For Wales, building sustainable teacher training for entrepreneurship education was a logical next step. Beyond Wales, this commitment was rare (Fig. 19.2).

Building Sustainable Teacher Training Provision: Background and Research

Presenting the Context

Entrepreneurship as a discipline grew in popularity within business schools in the early 1970s since when there has been a proliferation of journals and articles, which are dominated by business school researchers and academics. Institutions of higher education are offering a diverse range of enterprise programmes; however, there is a paucity of empirically rigorous research in the learning strategies employed and their subsequent influence. Since 2000, academics have criticised mainstream entrepreneurship education for its concentration on developing learner's analytical skills rather than their capacity for innovative thinking (Gibb 2002; Kirby 2004).

Internationally, business school approaches were seen to work well for educating 'about' entrepreneurship but not equipping 'for' entrepreneurship, and against this backdrop, there was also criticism that discipline specialists were viewing entrepreneurship from their own perspective without taking into consideration understandings from other disciplines. Consequently, theoretical underpinning was provided, with an extensive literature review of entrepreneurship education spanning a breadth of academic disciplines, policy reports and best practice guidance for teaching and learning, with an emphasis on developing creativity informed by neurological insights.

In searching for existing development opportunities for academics delivering entrepreneurship education within further and higher education, it was identified that non-accredited continuous professional development provided either in-house or at educator conferences was the main form of training. There were also a number of undergraduate and master level qualifications in enterprise and entrepreneurship being offered, predominantly within business schools. However, these were more closely aligned with educating 'about' entrepreneurship, closely aligned with venture creation (possibly due to the relative ease of assessment procedures) rather than an emphasis on teaching, learning and assessment for enhancing the entrepreneurial capacity in learners. The Association of Graduate Careers Advisory Services (AGCAS) noted that extra-curricular activities are popular but have taken a step back from looking for formal national accreditation, describing it as a minefield in terms of assessment.

Consequently, with the exception of a very limited number of compulsory training events, it was left for educators to opt in for training and, thus, only those

YEAR	EUROPEAN POLICY MILESTONE	LINKS TO TEACHER EDUCATION
2003	Entrepreneurship in Europe Green Paper (European Commission 2003)	The first EU entrepreneurship action plan does not specifically identify teacher training in its recommendations, but highlights education and training as important for fostering the capacity and skills for entrepreneurship.
2006	Recommendation on key competences for lifelong learning	A framework defining eight key competences including 'Sense of initiative and entrepreneurship', and describing the essential knowledge, skills and attitudes for each.
2006	Oslo Agenda for Entrepreneurship Education in Europe (European Parliament 2006)	This set of proposals to support entrepreneurship education makes recommendations for actions at all levels to support teachers and educators to develop the awareness, skills, understanding and networks needed.
2010	Towards Greater Coherency in Entrepreneurship Education (European Commission 2010)	The Progression Model includes a strand addressing actions for teachers including initial and continuing professional training, networking and good practice exchange.
2011	The Budapest Agenda: Enabling Teachers for Entrepreneurship Education (European Commission 2011)	A repository of information and good practice on how to enable teachers to use innovative and entrepreneurial methods of teaching
2012	Entrepreneurship 2020 Action Plan	Education identified as one of the three pillars to support entrepreneurial growth in Europe with no specific reference to teacher training.
2012	Entrepreneurship Education at School (European Commission 2012)	A Eurydice study analysing the integration of EE into policy and practice for compulsory education in Europe, highlighting teacher practices in some countries.
2013	Entrepreneurship Education: A Guide for Educators (European Commission 2013)	Compendium of good practice to support initial teacher education and continuing teacher development, with identified key messages on the actions needed in Europe to reach the goal of implementing entrepreneurship education sustainably
2014	Final Report Thematic Working Group on Entrepreneurship Education	Policy guidance for entrepreneurship education, with educator development as one section of the report and its recommendations.
2014	European Council conclusions on entrepreneurship in education and training (Council of the European Union 2015)	Calls on European Commission and Member States to promote teacher/ trainer education in entrepreneurial skills
2015	Entrepreneurship Education: A Road to Success	Compilation of evidence on the impact of EE strategies and measures, with specific section addressing
2015	European Parliament Resolution on promoting youth entrepreneurship through education and training (European Parliament 2015)	Highlights the importance of teachers in fostering entrepreneurial mind-sets, calling on Member States to pay attention to provision of appropriate training and support them to build networks especially with entrepreneurs

Fig. 19.2 Timeline of European Policy linked to entrepreneurship educator development

with an interest in the topic engaged in the events. The main conferences specifically aimed at entrepreneurship education development are provided by the Institute for Small Business and Entrepreneurship (ISBE) and Enterprise Educators UK (EEUK). Whilst some educators attend both conferences, they are distinctive in that ISBE is considered the forum for sharing academic research and EEUK the forum for interactive sessions for demonstrating innovative approaches. Both conferences incorporate embedded assessed activities, extra-curricular activities such as enterprise clubs, and the infrastructure provided for business start-up, such as access to funding, mentoring and incubation facilities. There was no accredited provision identified from which to draw experience and map potential learning outcomes against.

Study Methodology

Driven by an increasing demand for the development of an entrepreneurial culture amongst students and for enterprise and entrepreneurial activity to be embedded into the curriculum at all levels and across all specialisms, in 2009 the Welsh Government commissioned a network of Welsh-based academics/enterprise managers, from further and higher education, to conduct a feasibility study into the potential for an entrepreneurial educator's qualification. This would build on Welsh Government's policy commitment to professional development in entrepreneurship education, and signalled the beginning of a priority on a more strategic and sustainable approach, building a home-grown and international standard route for educator development.

The primary aim of the feasibility study was that it should illuminate opportunities for credit-bearing teacher training provision, to build a sustainable approach to teacher training for entrepreneurship education in Wales. As the main audience for any proposed qualification comprised those teaching across the disciplines in further and higher education in Wales, the study was undertaken in collaboration with the Welsh Entrepreneurship Champions, a network supported by Welsh Government to ensure that all further and higher education institutions in Wales have a designated person with the responsibility for developing entrepreneurship within their own environments.

Twenty-seven champions (fifteen from further education and eleven from higher education), from a total of thirty-three, proactively engaged in the study, eliciting contributions from tutors and academics across disciplines to inform content, mode of delivery and level of award. This was supported with interviews with twenty leading educators from the UK community connected via the Enterprise Educators UK network (see <http://www.enterprise.ac.uk>), the CEO of the National Association for College and University Entrepreneurs, representatives of the Association of Graduate Advisory Services and participation in international enterprise education conferences. Two of the feasibility study team were actively

engaged in international research for the development of entrepreneurship education, one of whom subsequently chaired the task group for the UK's Quality Assurance Agency that developed the guidance for Enterprise and Entrepreneurship education published in 2012 (QAA 2012).

Enterprise and Entrepreneurship Education: Definitional Stance

Enterprise and entrepreneurship have long been convoluted terms that confuse definitional stances and muddy the waters of understanding amongst stakeholders. We use the definitions from the aforementioned QAA guidance (QAA 2012, 8).

Enterprise education aims to produce graduates with the mindset and skills to come up with original ideas in response to identified needs and shortfalls, and the ability to act on them. In short, having an idea and making it happen. Enterprise skills include taking the initiative, intuitive decision making, making things happen, networking, identifying opportunities, creative problem solving, innovating, strategic thinking, and personal effectiveness. Enterprise education extends beyond knowledge acquisition to a wide range of emotional, intellectual, social and practical skills.

Entrepreneurship education focuses on the development and application of an enterprising mind set and skills in the specific contexts of setting up a new venture, developing and growing an existing business, or designing an entrepreneurial organisation.

This decision was rooted in the objectives of the study, which aimed to find routes to inspire educators, as well as to empower them to initiate entrepreneurial outcomes, and it became apparent that the former definition of enterprise would be more relevant than the application of the skills and that there should be less focus on business acumen, and more focus on developing skills, attitudes and behaviours that would lead to enterprising characteristics. We therefore took innovation to be a subset of creativity, and opportunity recognition to be a subset of innovation. This reflected the current thinking at European level. In 2006, the European Union had defined eight key competences for education and training, one of which was the 'Sense of initiative and entrepreneurship':

Sense of initiative and entrepreneurship refers to an individual's ability to turn ideas into action. It includes creativity, innovation and risk-taking, as well as the ability to plan and manage projects in order to achieve objectives. This supports individuals, not only in their everyday lives at home and in society, but also in the workplace in being aware of the context of their work and being able to seize opportunities, and is a foundation for more specific skills and knowledge needed by those establishing or contributing to social or commercial activity. This should include awareness of ethical values and promote good governance.²

²As defined in the Recommendation of the European Parliament and of the Council of 18 December 2006 on Key Competences for Lifelong Learning (2006/962/EC).

What Should Be Taught?

Art and Science of Entrepreneurship Education

Whilst it is internationally accepted that little is known about what elements of training/studies are most valued by entrepreneurs, there are features in which most stakeholders are in accord. In particular, entrepreneurial teaching and learning practices demand a shift from transmission models of teaching (learning about) to experiential learning (learning for) to offer students techniques that can be applied in the real world. A debate surrounding the art and science of entrepreneurship education is a recurring theme in the literature (Henry et al. 2005; Silver and Maclean 2007). The ‘science’ referred to the business and management skills and the ‘arts’ referring to creative and innovative thinking. Observations are that the science is teachable using conventional pedagogical approaches such as lectures and assessment via examinations but that the arts are not teachable in the same way, with an implication that they could not be embedded within the curriculum (Henry et al. 2005).

As innovation and creativity are considered vital for business success, it became apparent that exemplars of practice and subsequent curriculum development would need to be informed by practices across the disciplines, particularly the creative industries.

Education for Creativity, Innovation and Opportunity Recognition

Whilst ‘creativity’ and ‘innovation’ are frequently used interchangeably, there is a distinction to be made, in that creativity is essential for innovation. Creativity, in having the capability to produce multiple ideas, is important but in itself insufficient, it requires successful implementation and commercialisation of these ideas, utilising the entrepreneur’s skills set. Creativity is essential at all stages of development, from concept to execution. Thus, a pattern emerges of the competencies that educators across the disciplines should enhance in their learners, summed up in the model of the enterprise angel (Penaluna 2013) (Fig. 19.3).

Specifically, it is advocated that intrinsic motivation is a key factor, and that perseverance and resilience are linked to the motivation to succeed. Self-efficacy, an individual’s belief in their ability to achieve, is also important in this context. Spotting opportunities and creatively solving problems are key drivers of motivation, and, if supported by some subject specific knowledge and business acumen, can help to develop the enterprising mindset.

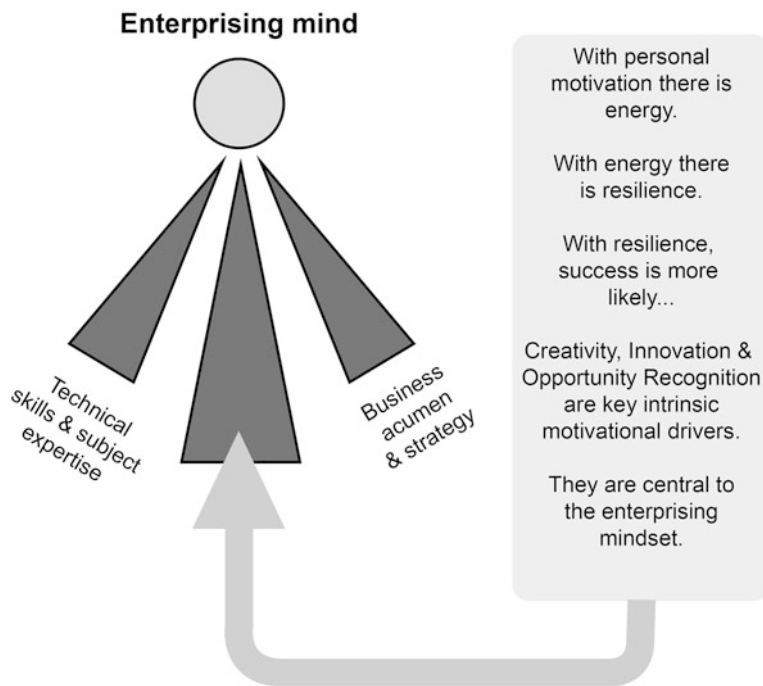


Fig. 19.3 Enterprising angel (Penaluna 2013)

Study Findings: Discernible Themes—Content

In being asked to provide ideas for content within an educator’s qualification, the respondents made a range of diverse suggestions. However, it should be noticed that a number of those interviewed were challenged to come up with ideas for themselves but wanted us to provide indicative content that they could rate. Responses were also geared to the particular needs of their organisations. Nevertheless, a variety of expectations and requirements for a qualification were articulated and there was a degree of consensus on five key themes:

1. What is enterprise?

It was suggested that this element should contain an introduction to the broader concepts of enterprise, its development to date, what’s happening nationally and internationally, and its linkage to industry.

2. Relevance of enterprise for staff and students

An examination as to why and how enterprise is relevant for different programmes was deemed to be significant. It was suggested that this could be achieved via the application of theory to practice to demonstrate applicability to core programmes and specialisms, vocational and non-vocational, and to demonstrate how

enterprise may be embedded naturally into core programmes. It was suggested that this would aid entrepreneurial thinking and the development of ideas and also assist with the achievement of the learning outcomes. The importance of contextualisation to their chosen specialisms, for both staff and students, was emphasised. The use of experiential learning could support this and would encourage the inclusion of activities and ways of engaging students and helping them to develop entrepreneurial skills.

3. Innovative teaching strategies and techniques

Consideration and enhancement of innovative teaching strategies, techniques and skills and how they could be applied in the classroom/workshop situation to meet student need improve quality of delivery and to show how enterprise may be incorporated into core programmes.

4. Availability of, and access to, advice and support

This would include consideration of the different types of support and advice available to staff and students to facilitate the development of entrepreneurial ideas and skills as part of, and apart from, a student's core programme.

5. Collaboration and showcasing of ideas

Collaboration, sharing and showcasing best practice across institutions and the engagement of staff from different institutions and specialisms via workshops led by staff on the ground, i.e. Enterprise Champions and lecturers, were perceived as an essential requirement for any programme as these individuals understand the issues, problems and complexities.

Additional requirements and concerns were also identified in relation to any provision. The most significant were:

- the need for further education (16–18-year-olds) to embed enterprise not only into the core curriculum but to link it to other components, by way of example in the delivery of key skills;
- staff workloads and study time requirements;
- the need to consider the different levels of the students' core programmes when designing any provision;
- the importance of certification/accreditation and pitching any qualification at the appropriate level, with a number of respondents suggesting that the learning experience would be more valuable than a qualification for some individuals.

Study Findings: Discernible Themes—Professional and Personal Benefits

Staff within both sectors anticipated that the principal professional benefits to be gained from a qualification would be:

- increased knowledge, understanding and skills plus ideas generation that would encourage a more entrepreneurial and flexible approach to teaching;
- increased confidence and a reduction of fears relating to the delivery of enterprise;
- the establishment of a network of contacts, exchange of ideas and good practice plus exposure to different ways of working;
- an enhanced awareness of how to integrate enterprise into the curriculum and engage staff and student interest;
- professional recognition of the value and relevance of enterprise plus more credibility and weight when interacting with internal and external stakeholders such as colleagues and funding agencies;
- the ability for staff to stand back and reflect on their own activity and approach and recognise the strengths and weaknesses in current practice.

The most significant personal benefits anticipated from a qualification were deemed to be:

- career development and enhancement and promotional opportunities that potentially offered scope for changes in job roles, e.g. further involvement and/or specialisation in enterprise provision, additional research opportunities and/or increased salaries;
- increased motivation and job satisfaction;
- its pertinence to continual professional development (CPD) requirements. For example, if a licence to teach, with its mandatory thirty-hour annual CPD requirement, was introduced in Wales, as has occurred in England, it could impact on attitudes and take up of any qualification within further education. Higher education staff suggested that a linkage to research would enhance their CPD profile and contribute to research outputs.

Study Findings: Discernible Themes—Accreditation

Educators were asked to identify what form of accreditation (if any) they considered most appropriate and beneficial to their own and colleagues needs.

Qualification level

The majority of respondents suggested that any new qualification should be pitched at either postgraduate or higher undergraduate levels (level 6). However, a few

respondents from further education observed that several different levels might be appropriate, arguing that the level of the qualification would depend on the staff need and situation and it would not be possible to provide one qualification that would suit everyone because of the diversity of potential candidates and their particular needs, for example the needs of new versus experienced staff, the requirements of further education compared to higher education and the needs of vocational and lifelong learning environments.

Format and delivery mode

Respondents observed that any qualification should be:

- modular, credit bearing 10–20 credits, and transferrable/portable to enhance career development opportunities;
- delivered either over 10 weeks in sessions of 4 h or planned for 2 or 3 consecutive days, consisting of progressive building blocks. Whilst a long thin approach of between 2 and 3 h per week was mentioned, it was acknowledged that delivery in this way would reduce any opportunity for networking;
- flexible in relation to content and delivery mode, suggesting a delivery mode that could be adopted online, face to face and possibly weekend sessions to encourage networking;
- assessed via a predetermined outcome such as the development of a project linked to practical classroom activities, which would form part or all of the assessment and which could be used in a delivery situation;
- university accredited.

In addition, it was suggested that the module should be offered both as a stand-alone qualification and as a component of a broader qualification. Consequently, it was suggested that the module could be integrated into both:

- (a) a themed package containing a core component plus a cluster of other optional modules focusing on different teaching and learning initiatives and/or specialist units which could be incorporated to meet the demands of particular specialisms. If this approach was adopted, the whole package forms the basis of a postgraduate Certificate or Diploma;
- (b) and an existing teaching qualification.

Desired Educator Expertise—Through the Eyes of Students from the UK's National Consortium of University Entrepreneurs

Based on their engagement with students and graduates across the UK, from further and higher education, in conversation with the study team, NACUE considered the following expertise to be desirable:

Knowledge

Enterprise orientation (e.g. mindsets and actions) and business development processes (from incorporation, to management to exit strategies).

Skills

Effective communications, negotiation, motivation, interpersonal, relationship management, time management, project management, information management, marketing, fundraising, event management evaluation, strategic thinking and conceptualisation.

Abilities

Creativity and innovation, strategic thinking, improving efficiencies, engaging stakeholders, empowering others to deliver enterprise programmes and be a catalyst for entrepreneurship, taking risks, navigating institutional political landscape and getting things done—FAST.

Attitudes

Positive, passionate, empowering, thoughtful, demanding, innovative, risk-taking, experimental.

Networks

A network that enables quick connectivity with real entrepreneurial people, i.e. the educator will have to be able to develop and draw upon relevant specialists as guest speakers or contributors in some way, maybe even by Skype or video conferencing, etc.

The What, and How for an Enterprise Educators Qualification

So equipped with knowledge from the literature, educators and the student/graduate body, it was advocated that Swansea Metropolitan University (now University of Wales Trinity Saint David) should take forward the introduction of a qualification, linked to its postgraduate study programmes. The intention underpinning the programme leading to the qualification was to provide a course for a broad range of participants, and to let them adapt and evolve their own approaches and meanings within their own contextual understandings and environments.

Creativity, Emotion and Cognition

Creativity is considered to be a fundamental activity of human information processing (Dietrich 2004). An idea is acknowledged to be creative if it is novel, or surprising and adaptive, functional or effective (Sternberg and Lubart 1999.) In

terms of creativity within the context of higher education, Jackson et al. (2006, 3) observe that it is not absent 'but that it is omnipresent. That it is taken for granted and subsumed within analytic ways of thinking that dominate the academic intellectual territory'.

We know that emotion and cognition are linked in a co-relational way (Pessoa 2008) and the plasticity of the brain means that it can rewire and reconnect itself according to the experiences it encounters and the rewards it receives (Draganski et al. 2004; Blakemore and Frith 2005). Hence, in terms of learning to be more creative, rewarding analytical thought may not be sufficient, and understanding the emotional responses of the learner could better inform the learning process. For example, insightful and creative thought usually occurs through what has been termed 'Relaxed Cognition' a state of mind where subconscious thought can be brought to the fore, and can only reach consciousness once focused analytical thinking, often stressful when it appears to be unsuccessful, ceases. Later when relaxed, the solution 'can pop into your head'. In the words of Claxton (2008, 4), 'We know that creativity involves, amongst other things, the ability to move fluently between focused, purposeful cognition and relaxed, receptive cognition'.

Such a perspective supports the premise that experiential learning rather than 'chalk and talk' is most appropriate for creative aspects of enterprise education, and that a reliance on extrinsically derived information that has been 'told' by the educator, such as theories and accepted practices, can actually limit the ability to develop new ways of seeing things. Practice can be underpinned by theory after it has been experienced, and it does not have to always lead the process.

The primary emotional area of the brain, the hippocampus, can grow new cells and make new connections well into adulthood, but there is also a reliance on emotional experiences to cement these new connections. Essentially, if the learning does not feel relevant, it may be lost. This is known as long-term potentiation and well understood in the literature surrounding cognitive neurology and employed within the iterative educational strategies employed in design education (see Bliss and Collingridge 1993).

In 2008, in the UK, the Quality Assurance Agency for Higher Education (QAA), the body responsible for leading thought on the expectations and standards of higher education provision, took account of this debate, and unlike their guidance (termed 'benchmark statement') for other disciplines, they took a distinctly different stance within art and design. They provided separate guidance documents to specify differing approaches required for the delivery of theory, and the practice of creativity. Each guidance document is separate and self-contained, yet is 'mutually interdependent' (Quality Assurance Agency for Higher Education, 2008). These documents mirror our previous discussion on teaching 'for', or 'about' entrepreneurship education, because they make clear distinction between being able to demonstrate abilities, compared to merely being able to talk about them through essays, examinations and similar assignments. In essence, they require different types of learning outcomes to effectively evaluate student performance.

Curiosity, Ambiguity, Uncertainty and Serendipity

Curiosity-based learning is a term used to describe a strategy that extends the pedagogy of problem-based learning (Savery 2006) by creating learning environments that enable learners to recognise new problems for themselves. The strategy can be seen to enhance intrinsic motivation, as the learners become aware of the shortfall in their own understandings and wish to know more in order to solve a problem that they perceive for themselves (Loewenstein 1994). A highly structured educational experience may be appropriate for tasks that can be broken down into sequential stages. However, it does not develop the higher intellectual decision-making processes that may go beyond conscious thought (Azer 2001). This observation is key; as noted previously, much creative thinking goes on below the radar of consciousness, only revealing itself in ‘aha’ moments of insight (Kounios and Jung Beeman, 2009).

Ambiguity should be one of the tools in the educators’ armoury of approaches that can be used to stimulate and challenge curiosity. It enables the educator to suggest issues and perspectives for the learner to consider without imposing solutions. Ambiguity of information forces the learner to question factors affecting the situation encouraging them to raise topics and ask questions. Schumpeter (1934) viewed entrepreneurial action as willingness to face uncertainty. Such a learning environment exposes the student to uncertainty and risk-taking, which can be further enhanced if the educators themselves are facilitators as opposed to dictators of the educational experience. The educators themselves are role models, with learners frequently mirroring and mimicking their actions.

Programme Content: An Outline

The programme of study sits within the formal teacher training requirements (PGCE/PCET) of the university and has to conform with, and consolidate, other modules within the programme. For example, the modular structure demands that the learners should be able to relate their learning to their own contexts, and be able to help a diverse range of learners to adapt and develop their own teaching programmes. Hence, the key aim of the programme was to develop a systematic understanding of issues relevant to creativity, innovation and entrepreneurship—encourage and develop entrepreneurial skills, self-motivation and analytical abilities through the study and application of entrepreneurship to the learners’ own teaching subject areas. Accordingly, two key outcome statements were designed. It is important to recognise that as an integral element of a teacher training programme, these relate to educational contexts and not to business start-up or business development.

1. Identify, research and appraise an entrepreneurial opportunity for delivery of a particular subject, and pitch the idea to peers and a panel of educators.
2. Devise, justify and reflect upon a realistic application of the entrepreneurial opportunity, based on a critical evaluation of the core subject area and learners.

In order to facilitate learning, a number of indicative content topics evolved and these could be framed and delivered in subsets as the educator(s) deemed appropriate (Entrepreneurial Educators 2011, 1):

- Exploring and understanding entrepreneurship, enterprise and its development, in an educational context, including a review of personal contexts;
- The impact on society of entrepreneurs and intrapreneurs (creativity, innovation and market/economic value);
- Examining learners' personal skills and how these may be developed;
- The skills, attributes and behaviours of the entrepreneur including ethical considerations;
- Developing insight and self-efficacy for opportunity/idea generation;
- Redefining problems and identifying opportunities;
- Convergent and divergent thinking—strategies and enhancement;
- Creative thinking and the establishment of creative learning environments;
- Exploring and applying entrepreneurial pedagogies including innovative teaching strategies, techniques and skills and their application in the delivery of entrepreneurial education;
- The value of intellectual property rights issues such as copyright, trademarks and patents
- Internal and external resources available to support entrepreneurship for staff and learners
- Engaging entrepreneurial educators

It is important to notice that if ideas development and multiple solution finding strategies are key motivational factors, the protection of new knowledge, connection and insights needs to be considered if an enterprising individual is to be rewarded for his or her efforts. Intellectual property rights, therefore, became an integral element of the programme. Of note is that research by the United Kingdom's Intellectual Property Office has indicated a dearth of understanding amongst graduates across the disciplines (NUS 2014).

The 10 credit level 6/7 (depending on the programme of study) module has been delivered over 30 h, 6 h a session for 5 consecutive weeks. It was scheduled for delivery as an optional module for those on postgraduate programmes and offered as a 'stand-alone' qualification for those wishing to study just the module.

There are two elements to the assignment, and these are presented here in the way that they were communicated to students:

Part A

Identify and research an entrepreneurial opportunity for delivery of a particular subject, and pitch the idea to peers and a panel of educators.

In order to complete this task you should:

- Identify, research and appraise an entrepreneurial education opportunity in your usual teaching specialism;
- Present/pitch the entrepreneurial education opportunity idea to peers, and other educators;
- Your presentation should include an outline of the methods to be used to take forward this opportunity within an educational/training environment, based on knowledge of the underlying concepts and principles associated with entrepreneurship in education;
- You should use appropriate audio/visual aids to support the presentation; and
- You should be prepared to respond to questioning, evaluation and feedback from the audience

This exercise offered students the opportunity to share their ideas with their peers and tutors and to receive formative feedback and evaluation of their idea.

Part B

Based on feedback received following completion of Part A, develop your entrepreneurial education opportunity by devising and justifying a realistic application of the entrepreneurial opportunity, based on a critical evaluation of the core subject area and learners. The end result should include appropriate documents which detail the delivery and assessment of your entrepreneurial education opportunity in such a way that another teacher from your specialism could deliver the session. This will entail you having to deploy lesson planning and analytical techniques and frameworks, based on a systematic understanding of current theory and practice in entrepreneurial education.

Produce a reflective analytical document with appropriate subsections that document:

- A rationale for the opportunity, including: a description of the opportunity; evaluation of the educational environment in which it is to be delivered; consideration of the learning group; justification for the teaching and learning strategies to be used; resources needed; and justification of the assessment methods to be employed (Approx. 1000 words);
- An appropriately detailed lesson plan, including consideration of professional teaching standards;
- Teaching and learning aids to be used in delivery;
- Assessments to be used;
- A reflection on the learning experience and how you intend to progress (Approx. 1000 words);

Specification

Overall minimum 2500 words (excluding appendices). A bibliography is expected.

A portfolio of evidence was encouraged and frequently provided, including short videos (3 min) of the educator justifying a proposal to his or her peers, followed by

a critique from both peers and guests, such as entrepreneurs and programme alumni who frequently joined the sessions. The module without exception received positive feedback both during the delivery and post assignment.

Alumni Engagement in Curriculum Development

Alumni from the programme, returning to share their experiences of adopting a more entrepreneurial approach to their teaching, learning and assessment, were a regular feature of the programme and these role model experiences were acknowledged by the cohort to be some of the most meaningful. The framework for alumni involvement is outlined in Fig. 19.4, the 'Continuous Conceptual Review Model' (Penaluna and Penaluna 2006), it is a strategy that elicits, validates and utilises the experiences of past students to develop the curriculum. The model is a continuously iterative process that has no specific outcome other than to build on the knowledge skills and experience derived at each stage.

Policy Catalysts for Effective and High-quality Teacher Education for Enterprise Education

Enterprise education can be viewed as both a subject to be taught (innovation, creativity, business acumen) and also as a way of teaching any topic (problem-solving, project-based, business engagement, experiential learning with meaningful aligned assessment). The need for enterprise education remains a constant though the content is constantly evolving, as new and innovative practice continues to emerge and individual policy drivers become more or less dominant. Since these developments began in 2009, the policy landscape at various regional levels has moved forward. The economic crisis of 2008 focused governments sharply on the need for job creation and supporting employability. Recent terror attacks both in Europe and around the globe have propelled the new priorities such as social inclusion and active citizenship to the top of the agenda. However, teacher education as a priority remains central to making enterprise education an effective and innovative learning experience. An important consideration is how to progress this agenda, to move from government support for small-scale excellent practice, to universal inclusion of high-quality training opportunities for both initial and continuing professional development of teachers.

Key enablers that could support the drive to build the breadth and quality of teacher education development include:

1. National guidance on teacher education to support enterprise education in both initial teacher training and continuing professional development;

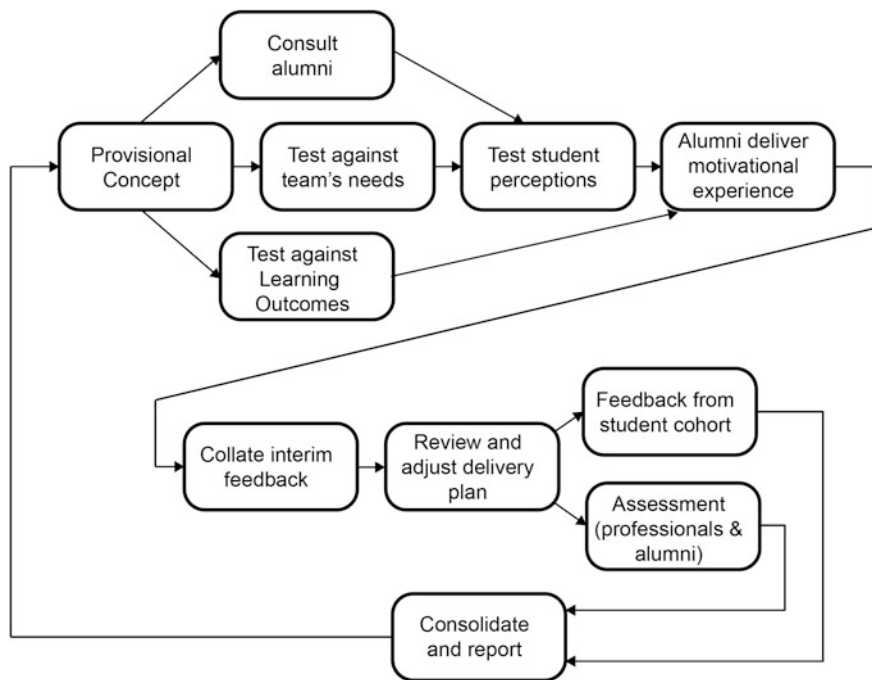


Fig. 19.4 Continuous conceptual review model (Penaluna and Penaluna 2006)

2. National initiative to build capacity amongst teacher educators, to raise awareness and build expertise for enterprise education;
3. Targeted funding to support research into effective teacher education for enterprise in both initial teacher training and continuing professional development, including focus on entrepreneurial/enterprising assessment, monitoring and evaluation;
4. Funding to scale up and embed innovative teacher training modules in partnership with relevant sector and/or stakeholder partners;
5. Ensuring that revised professional standards for teachers and teacher educators include explicit reference to enterprise education as a cross-curricular competence; and
6. Promoting the new European ‘Competence Framework for Entrepreneurship Education’³ as a tool for teacher educators to demystify enterprise education, promote its inclusion into ITE and CPD and encourage development of a logical and progressive continuum of enterprise education.

³<https://ec.europa.eu/jrc/en/entrecomp>.

If these factors are given due deliberation, then the potential of the approach funded by Welsh Government and delivered in West Wales could achieve the intended vision of transforming teacher education in Wales and beyond.

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Authors Biography

Kathryn David has over 25 years' experience of business development in education and is currently responsible for University of Wales Trinity Saint David's business support and commercial initiatives. With a background in project development and management, she has led on the development of a number of major initiatives such as the All Wales e-Learning Network and many other innovation projects. In 2015, she led a successful consortium bid to the CITB for a £6.5 m Construction Wales Innovation Centre to develop Wales' first specialist training facility for the construction industry. Kathryn has extensive experience of partnership working to support regeneration and is responsible for the strategic development of entrepreneurship and European funding. She served as a board member of Wales Higher Education Brussels for ten years and is currently on the Board of Directors of Swansea Business Improvement District (BID).

Kathryn Penaluna is the Enterprise Manager at University of Wales Trinity Saint David, embedding contextualised entrepreneurship education across the University's three Welsh campuses. Kath co-authored research with the UK Intellectual Property Office in 2007, and regularly publishes on topics that challenge conventional business education and its teaching approaches. She is a regular keynote speaker at national events for entrepreneurship educators and engaged as a consultant with the United Nations Conference on Trade and Development, OECD, European Commission and a member of the development team embedding entrepreneurship education in all secondary schools in the Republic of Macedonia. Kathryn helped to set up and run the Higher Education Academy's Entrepreneurial Learning Special Interest Group and in collaboration with Welsh Government helped to develop the UK's first teacher training provision for 'enterprising the educators'.

Elin McCallum has worked on the development of entrepreneurship education policy and national/international projects with Wales Government and the European Commission for the past ten years. She is currently delivering capacity building workshops, research and project analysis for the OECD, European Commission, European Training Foundation, and UK universities on entrepreneurship policy and practice. Other projects include curating a series of European seminars linked to 'Creative Mindsets, Entrepreneurial Futures', exploring if and how European education systems can deliver effective, quality entrepreneurial learning. Publications include co-authoring DG EAC policy guidance (Final Report of the Thematic Working Group on Entrepreneurship Education) and a chapter analysing strategy for the upcoming Eurydice Study on Entrepreneurship Education at School in Europe.

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Chapter 20

The University of the Third Age in Swansea and Beyond

Anthony Hughes

Abstract Eric Midwinter, one of the three founders of the University of the Third Age (U3A) portrayed the success of the U3A movement as “an extraordinary adventure in social cooperation (500 Beacons, Eric Midwinter)”. This chapter describes the remarkable effect that self-help learning has on the members of Swansea’s U3A. It further discusses the role of the Third Age Trust as the umbrella body of the third age movement. The principles of the approaches described here can be used to set-up a new U3A or a similar learning organisation for different segments of the population. The principles can also be used in other countries regardless of whether or not they are fortunate enough to have their own version of the University of the Third Age. Finally, some future challenges are considered that need to be constantly borne in mind to preserve the continuity of the movement.

Introduction

As was discussed in the introductory chapter, the definition of entrepreneurship extends beyond narrow commercial and industrial contexts to include social contexts. Indeed, it can be argued that with regard to cities and city regions, planners and administrators need to pay as much attention to fostering social entrepreneurship as they do to commercial and industrial entrepreneurship.

In his book, *500 Beacons*, Eric Midwinter describes one of his co-founders as a social entrepreneur. The discussion of definitions by Martin and Osberg (2007) lend themselves beautifully to the U3A as they define a social entrepreneur as someone who “...aims for value in the form of large-scale, transformational benefit that accrues either to a significant element of society or to society at large”... and “... targets an underserved, neglected or highly disadvantaged population that lacks the financial means or political clout to achieve the transformative benefit on its own”.

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This captures much of the inspiration, vision and organisation of the University of the Third Age (U3A), and this chapter seeks to show how Swansea U3A contributes such a close fit into the learning city region.

What is the University of the Third Age?

The University of the Third Age is not a “university” in the generally accepted meaning of the word. Rather, it reflects the origins of the word relating to a group of people or a community that voluntarily gathers together for the purpose of learning. The self-help approach to learning is embodied throughout all U3As. This means that the U3A has broken out of the straitjacket of traditional adult education where the emphasis is on teaching a course-oriented, directed skill. In U3A, the emphasis is on self-help learning as a means of ongoing personal satisfaction. Along the way, long-term friendships are built, and members develop an extra sense of purpose and an inner motivation to keep active and engaged.

Membership is open with no qualifications either being expected or awarded. Whilst there are no age limits for membership, the organisation is geared towards those no longer in full-time employment and this results in a membership that typically reflects those in the 50s to 90s age groups. Lifelong learning is a reality in the U3A. U3A is also non-political, non-religious and totally self-funded. As a result, it is not subject to external governmental, educational or corporate bias or influences.

Background

Several aspects are at play. In the UK, people are living longer and are generally leading healthier lifestyles. Consequently, activities are being sought that can retain and extend mental and physical capabilities. Many older people are not content to be thought of as drains on society and the underlying need for a meaningful life in retirement has never been expressed so strongly. Unfortunately, this comes at a time when funding in adult education in the UK is continually being chipped away, communities and families are becoming ever more dispersed and loneliness is deemed as great a killer as smoking or obesity. The combination of these factors resulted in the conditions already mentioned i.e. an underserved section of the community that was too disparate to have any real political or financial muscle to initiate the major transformational change that would be required.

With their roots in demography (Peter Laslett), social entrepreneurship (Michael Young) and education (Eric Midwinter), the founders of the University of the Third Age recognised this vacuum and were sufficiently appalled with the status quo that they devised three core policies—the virtues of self-fulfilment of older people, the idea of mutual support and finally, the concept of recurrent education.

They vigorously supported the beliefs that the U3A should not be subservient to any other authority and the unshakeable belief that ordinary people were capable of running their own affairs in localised concert with others.¹

From a U3A perspective, the answer has been to take control through self-help learning. This means that our members can decide what they want to learn and just do it. Those things that people wanted to know earlier but their careers stood in the way can now be pursued with vigour and enthusiasm. There is potential at every stage in life, and using the U3A approach, this can now be realised and new personal aspirations set and achieved.

A minor drawback for some is the word “University” in our title. To those who do not know what we do, there is an aura of elitism or a genuine feeling of potential inadequacy. However, the need to learn is a basic human need—and you can learn whatever you like. There are interest groups that range from Art to Zumba dancing; from playing the ukulele to researching family history; and from gardening to learning a language through to developing IT skills. It has been estimated that there are many hundreds of subjects being followed across the length and breadth of the UK. What is common throughout is the core tenet that members can take on the simultaneous roles of teachers and learners. We do not employ external tutors.

Organisation

Each U3A sets itself up as a charity in its own right with its own board of trustees. All that is needed is a group of like-minded individuals who wish to set-up a new U3A within their community. Whilst operationally independent, each U3A must sign up to the governing principles as laid down by the umbrella body of the Third Age Trust (see <http://www.u3a.org.uk>).

Importantly, each U3A can organise itself and plan its activities according to the needs of the local members. Interests that may prevail in one part of the country may not attract such a following elsewhere. Likewise, some U3As may centre their entire activities in a particular location whilst others prefer a more distributed approach to holding classes. As each U3A is self-funded through member subscriptions, levels of subscriptions can therefore vary considerably. Each U3A has developed its own distinctive heart and character over a period of years and reflects the soul of the local communities.

The success of this approach can be seen in an approximate 7% annual growth in new U3As and is further proof that the U3A approach is compelling and that it lends itself to a sustainable, self-mobilised upward trajectory.

¹500 Beacons, Eric Midwinter.

Swansea U3A

Swansea U3A was launched at an inaugural meeting in the summer of 1986. Since then, it has grown to the extent that it now boasts a membership of nearly 2000, some 100+ interest groups and is the largest of the U3As in Wales. The beginnings, however, were very small. An initial meeting was held whereby around 30 local people met and agreed to form a Steering Committee to set-up the new U3A. From the outset, links were established with Swansea University that agreed to supply the first meeting room. This link was reinforced when the University's Professor Maurice Broady became the first President, establishing a tradition carried on to the present day with Professor Richard Davies, the current Swansea University Vice Chancellor, occupying the position. Of all the other 1000 U3As in the UK, we believe Swansea to be rather fortunate and unique in having such support.

Through the development of relationships with the University and Swansea City Council, the U3A has free rooms for weekly lectures, also Committee meetings. This has meant that even taking into account other costs in running the U3A, fixed costs have been very low and this has been reflected in our ability to keep members' subscription fees equally low. With no fixed accommodation, the interest groups hold their meetings in a variety of locations, from village halls to wine bars to museums and members' homes. When it comes to arranging meeting places, members' ingenuity in choosing appropriate venues knows no bounds. Upholding the self-funded policy of the U3A movement, each group manages its own finances (subject to various caveats that are designed to protect individuals from any loss).

Interest Groups

The lifeblood of any U3A depends upon its Convenors. These are group leaders who have taken on the voluntary roles of establishing subjects of interest, then forming groups of like-minded people who wish to learn about the same topic. Convenors do not have to be experts in the chosen topic; members can take turns in leading a meeting whilst others can help out with collecting fees or booking venues. When groups get too big, they can merely split into two or more separate classes when necessary, each with its own Convenor. Thus, Swansea has many Creative Writing classes and even more Book Reading groups. No permission needs to be sought from the Executive Committee; it can just happen. This extraordinary ability to self-expand through the pleasure of joint learning cannot be achieved through curriculum-based teaching. Furthermore, the genuine wish to share knowledge generates close and lasting friendships and mutual respect.

Weekly Lectures/Talks

Also at the heart of Swansea, U3A is its programme of weekly talks, a preferable word to “lectures” as the latter tends to reinforce any false impressions that potential members may have relating to snobbery. Just taking a look at some of the titles would dispel those notions: *Buffalo Bill in Swansea, You Ain’t Heard Nothing’ Yet!* (a history of the “talkies”). Of course, there are more serious topics, but the common thread has always been to invite speakers from all walks of life who are interesting as well as informative, from the educational to the inspirational. These speakers come from a variety of sources including members and friends, authors, professors, actors and musicians. Most of these talks are freely given, although out-of-pocket expenses are always covered, and on occasion, small fees are paid to external speakers.

Social and Other Events

To make sure that our many members have opportunities to meet and enjoy each other’s company, we arrange outings to many places of interest. Organisations such as the National Trust are always willing to provide guides around their premises, as are breweries or any other such establishment members would like to visit. These outings not only further friendships, they also help members find out what’s happening in other interest groups and generally reinforce the understanding of what U3A is all about. The enjoyment of these activities and other such as annual quizzes, St. David’s Day events and Christmas dinners all act as the “glue” that keep people together. Fun and enjoyment are as important as learning!

Each year, an Open Day is held where Convenors produce stalls to show-off their ideas with the quality of the stalls showing flair and ingenuity. These days are always well attended, and many new members join there and then. This is followed up by coffee mornings with a view to welcoming new members and introducing them to the U3A ethos. This is an important stage in underlining the messages that we are all volunteers and the principle of self-help learning is a crucial foundation for our continued success.

External Relationships

Over the years, many external relationships have been established. In addition to Swansea University and the City Council, the U3A has good relationships with Swansea’s Network 50+ (a committee that considers the needs of Swansea’s older people). With Network 50+, there are many synergies that can be explored in ways that combine to improve the lives of older people. A similar relationship has also been developed with Wales’s Commissioner for Older People who is a staunch

supporter of all U3As in Wales. In addition, Swansea U3A maintains links with other learning organisations such as NIACE (the National Institute for Adult Continuing Education).

However, external relationships are not just “discussion shops”. Very real opportunities can develop in terms of shared learning projects or SLPs (e.g. using Swansea U3A members to contribute to University research initiatives relating to older people). SLPs can be undertaken with any organisation or with any other U3A. Whilst Swansea U3A has undertaken research on the history of Swansea’s Market and helped analyse documentation relating to architectural glass, other U3As have been involved with research into World War 1 and exhibitions of philatelic materials and Roman ceramics. This type of work is being further encouraged as it can bring real benefits to the partnering organisation while adding to the enrichment of U3A members’ lives and sense of purpose.

Inter-generational initiatives are also encouraged by U3As in general. In Swansea, the Ukulele Class regularly visits schools; other U3As hold debates with older schoolchildren. One interesting event involved members going to a school armed with computers and cameras and facilitating the production of a fictional news programme. Whilst not realising it, the children learned much about the management of projects, coordination of roles as well as using IT. Such initiatives help build age-friendly communities and can really build upon the continuation of streams of knowledge between generations.

The Executive Committee

Of course, none of the above activities and initiatives happen by accident. An Executive Committee is formed from within the membership, again on a voluntary basis. As Swansea U3A is a registered charity in its own right, each member of the committee is a Trustee with attendant legal responsibilities relating to ensuring that the U3A fulfils its learning brief as well as the more obvious requirements relating to financial and other legal controls. In addition, when becoming part of the U3A movement, each new U3A agrees to a model constitution as set-up by the Third Age Trust’s National Office. This constitution defines the committee membership, the tenure of the members and other obligations.

The Committee comprises officers (Chairman, Vice-Chair, Treasurer, Secretary, Membership Secretary and Network Secretary) and other members holding roles relating to activities such as the programme of lectures, IT, newsletters, the taking of minutes, publicity and university liaison. All committee members are elected at the annual general meeting, although co-optees can also be invited to attend meetings for specific purposes. It is important that the Committee provides an environment in which all members of the U3A can succeed. Inevitably, there are procedures that must be followed, but these must not be stifling and must be geared to supporting the membership. For example, advice and guidance is readily available to those wishing to set-up new activity groups; occasional grants can be

given and events can be organised to encourage potential group leaders to publicise their ideas and encourage interested members to join their new group. Other internal supporting mechanisms include the running of a professional website, publishing newsletters, organising key events and ensuring that the U3A takes advantage of appropriate new initiatives such as the implementation of electronic payment mechanisms for membership subscriptions and bill payments.

The Secret of Swansea's Success

In its thirty-year history, Swansea U3A has always had as its core the driving motivation of a firm belief in what we are doing and the benefits it brings to members. In the early days of our development, this belief extended to encouraging and helping pro-actively the formation of other U3As in South Wales. Indeed, we are still approached to visit those whose U3As may be stalling or may need a boost in ideas.

This shared buy-in to the underlying philosophies of the U3A is of paramount importance as it drives the will to grow our interest groups and to maintain focus on the membership. As everyone is a volunteer, without this belief the inevitable workload that comes with running the organisation would become too overpowering, and at the end of the day, people make the difference. This is why the social activities and the interest groups all need to be approached in a friendly atmosphere, an environment where people want to volunteer because it is not only worthwhile, it is fun. After a life in work and bringing up families, nobody wants to be part of something where bureaucracy and unnecessary rules still prevail.

Swansea U3A is also very much a "living organisation". Many members join through word-of-mouth recommendations and initially, some expect everything to be laid on for them (this is why the self-help philosophy needs to be understood from the outset). There is, therefore, a tacit responsibility for the Executive Committee to find new subjects and activities; stagnating is not an option. This is why there is a constant interaction between the Committee, the Convenors and members so that new ideas can be tried, implemented or discarded if necessary. Whilst most ideas come from within Swansea U3A, other developments across the UK or more locally within Wales are also actively considered and tried out.

The heady combination of new learning, new aspirations, new friendships and reconnections with the family and community can best be understood by listening to some of the feedback given by our members:

Thank you for adding colour to our lives.

It's like a new lease in life.

Belonging to U3A has taught me that it's never too late to try something new.

U3A provided me with an anchor in that bleak time just after retirement; the biggest problem is selecting interest groups as there are only seven days in the week.

I don't know what I would have done if I hadn't discovered U3A.

Comments such as these are by no means uncommon and fuel the belief that U3A can fundamentally improve people's lives. Such sentiments provide motivation enough to keep a U3A alive and wanting to increase the membership. Growth for growth's sake is never the goal; it is always about sharing with more people the benefits that U3A can bring. However, Swansea U3A does not exist in a vacuum. It is part of a much larger movement that includes the national Third Age Trust and regional networks. Like all U3As, Swansea decides how many (or how few) of the initiatives it decides to attend or support; as a large U3A, it is mainly self-sufficient. However, in the spirit of shared support and shared learning, it chooses to be actively involved in all things U3A as can be shown by the fact that it has helped set-up many U3As and has provided the all-Wales Trustee for the National Executive Committee as well as the chairmanship of the South Wales network of U3As.

The Third Age Trust

Whilst each U3A is operationally independent and responsible for its own success and well-being, their governing constitutions are designed by the Third Age Trust, the national umbrella charity that supports all U3As with the provision of advice and guidance (see <http://www.u3a.org.uk>). The Trust comprises a National Executive Committee (NEC) and a National Office. The NEC is a board of Trustees elected by and from members of the 12 U3A regions that constitute the UK's U3A movement. Each Trustee is therefore a volunteer and receives no remuneration for work undertaken (although expenses are paid). Within the NEC, committees meet and discuss ways in which member U3As can be assisted by way of national initiatives, although no U3A is told what to do; decisions still rest at a local level. The NEC itself has sub-committees that consider the future needs of the U3A membership. In turn, each of these committees produces guidelines, training courses and various initiatives that are designed to further the development and growth of the Movement.

Along with the NEC, the Trust has a National Office that provides day-to-day services to member U3As in the shape of legal advice and guidance. In addition, it designs generic materials such as publicity, advice sheets on a variety of topics and general insurance cover for the protection of all U3As and the activities undertaken by the membership. As with the NEC, the National Office does not tell U3As what to do and consequently does not attract the overheads associated with traditional "Head Office" functions. Indeed, staff numbers at the National Office amount to less than a dozen, a remarkable feat for a movement that spans the whole of the UK. This would not be possible without a deep and shared commitment for the underlying principles and ethos of the U3A Movement. This approach of a gentle hand on the tiller and completely local decision-making should be examined by those in other organisations who are interested in the theory and application of "management without managers".

All costs and expenses of the Trust are paid for by a “capitation fee” from each local U3A. This fee is kept as low as possible (£3.50 at the time of this publication) and any changes need to be agreed by the membership at the Annual General Meeting (every U3A is a member of the Trust).

A few of the Trust’s other initiatives can be illustrated by the following:

AIUTA. The Third Age Trust is a member of the Association of International Universities of the Third Age (AIUTA—known as IAUTA in other countries). AIUTA has been operating for over forty years and now spans several countries. Each country has a different way of running its constituent U3As. The French version (the origin of the third age movement) is very closely linked with universities. Whilst UK U3As have valued such links, a more formal relationship as part of the UK’s policy could limit the growth of individual U3As. Nevertheless, NEC committee members attend AIUTA meetings as there is much that can be learned from different countries’ implementations. At present, however, the spread of this learning through individual UK U3As does not happen as a matter of course. It is an area that needs to be improved if the value of the relationship is to be seen and supported (see <http://www.aiu3a.com/home.html>).

Grants. The Trust offers small grants to U3As and networks of U3As in the support of events that are geared to developing the movement. These can extend to providing small sums of money for publicity or hiring of hall for development events. U3As can apply for external grants as long as there are no conditions attached that could potentially compromise the U3A’s independence from outside influences.

IT platforms. As many U3As do not have skilled IT members, the Trust has negotiated easy-to-use software so that a U3A can design and implement their own websites with a minimum of expertise. All costs and hosting platforms are paid for by the Trust. In a more recent initiative, the Trust’s IT Committee (headed by the Trustee from Swansea) brought together volunteers from across the UK to design, write and implement a Membership Management System, a remarkable example of crowd sourcing by “third agers”. As with all other initiatives, local U3As are free to choose whether to avail themselves of these (and future) systems or whether to go it alone.

Regional Volunteers (RVs). These are members from local U3As who help with the setting up of new U3As. The Trust provides detailed training to these RVs, so they can provide support to local people who wish to set-up a new U3A. This involves the provision of advice on publicity, the organisation of events to launch the new U3A, working with the Trust to ensure the Constitution and Steering Committees are set-up correctly and subsequently providing a local source of advice.

Resource Centre. This is a section of the National Office that provides media on a wide variety of topics that can help U3As considering ideas for a new or existing topic for learning and investigation.

Subject Advisers. They are nationwide volunteers who provide information and suggested approaches to their specific areas of expertise. This can be invaluable for a U3A that does not have internal expertise. For example, the Art Appreciation

Subject Adviser can provide suggested programmes of learning, together with newsletters on a variety of artists, genres or periods.

Study Days and Summer Schools. These are specialist days/courses (paid for by U3A attendees) designed to provide more in-depth knowledge from expert speakers.

Third Age Matters (TAM). This is an in-house magazine distributed to over 200,000 households (paid for by either the local U3A as part of the subscription fee, or paid for directly by members (a decision that is made locally and not by the National Office). A separate, but closely linked publication (*Sources*) is issued to give topic-based ideas derived from a variety of ideas and implementations from within U3As. This separate magazine is included in the TAM subscription.

Regional Networks

There are twelve formal regions across the UK, of which Wales is one. Within Wales, there are looser networks of U3As across north, south, mid- and West Wales. These networks comprise local U3As that collaborate to help and learn from each other. As the U3A movement gets ever larger, these networks will become more important in the future as a means of implementing two-way communication between U3As and the national Third Age Trust.

In South Wales, the membership of the network numbers some thirty U3As. However, invitations to other networks are always open, so any meeting can contain representatives from quite far afield. All network meetings reinforce the principles of the Third Age Trust in terms of furthering the development of U3As. Examples of the benefits of becoming an active member of a network include:

The development of skills and knowledge: To maintain freshness within U3A committees, the constitutions define the length of terms of office, and as a result, there is a constant turnover of key roles. In particular, the roles of Chairman, Treasurer and Membership Secretary need refreshing to make sure that individual U3As remain outward looking and do not get totally drawn into local ways of doing things. Meetings are therefore held to share experiences and keep up-to-date with the latest thinking from the Third Age Trust.

Other types of skill development include arranging our network seminars to discuss issues such as leadership and facilitation. Whilst many of these skills have been taught or picked up during parenthood and the normal working life, dealing with volunteers is different. Approaches based upon old-fashioned views of command and control structure will simply not work since volunteers can just walk away.

Mutual help and information sharing: Each U3A has its own priorities and topics of interest. However, network meetings can help promote each other's events such as local Study Days or share information with regard to approaches to growing membership, devising publicity materials and holding open days for the general public. Although many posters and leaflets are available nationally, they supplement

rather than replace tailored local pamphlets and handouts. Much time can be saved by showing each other what works, where and why. An example of a valuable source of knowledge relates to good speakers. As weekly or monthly talks are a feature of all U3As, there is a constant search for the next interesting topic. Sharing lists of speakers is an excellent way to stimulate ideas for talks and discussions. However, this needs to be undertaken with care as external speakers, as willing as they are, only have so much time available and everyone needs to be sensitive to the needs of the speakers.

Social: Inter-U3A events help provide the “glue” that keeps relationships strong across the network. Joint walks are often undertaken across many parts of Wales, and quizzes are often held between many local U3As. All of these add to the feeling of belonging and ensure that there are no artificial barriers that might stop members from contacting other U3As for help and advice.

Taking control: Just as each U3A has an immense amount of freedom to run itself and organise itself in the way that best suits its local population, each network can take a similar approach. A constant understanding of local issues can help U3As take into account anything that could impact costs, membership or approaches to learning. For example, different parts of Wales have different views on formal attendance at the National Eisteddfod, also the nature and efficacy of links with local government and the Welsh Government. The South Wales network has also developed close relationships with colleges and universities by way of a joint Education Forum. Each network can take control of its own development of relationships and subsequent actions, so it is important for U3As to have a say in priorities and anything which may impact them directly. Of course, the NEC Trustee for Wales is constantly informed so that ideas can be spread across all networks.

The U3A Impact: Up to the third age, personal success is often viewed, both personally and by others, in terms of visible achievements. However, in retirement, there are no ready-made social structures to say “Well done” or to share with others a personal sense of satisfaction. In an age when families and communities are getting more dispersed, a vacuum can be created through having no obvious means of achieving inner fulfilment; personal motivation and social interaction are keys to a healthier and rewarding life.

Throughout every activity, membership and involvement in a U3A gives a feeling of belonging, a sense of ongoing worth to a community and the personal motivation and satisfaction that learning can bring. Membership is riddled with causes of satisfaction. Whether just attending a class or running an interest group, being a committee member or making cups of tea at open events, everyone has a sense of belonging and everyone has a shared understanding of what U3A is all about. Members are actively engaged and feel part of the community. Many U3As, and Swansea in particular, have also set up groups that help members get to grips with new technologies. In a world where the ability to use the Internet, send emails or connect via interactive video, familiarising members with these facilities is hugely important in furthering links with the community, friends and, most importantly, distributed families.

Friendships and close relationships are developed between members. Taken together with the sheer enjoyment of learning something new, members tend to lead very full lives. Diary management is often a much bigger problem than loneliness for many U3A members. All of this combines to get people out of their homes and engaged with life. Such are the bonds of friendships that are developed, if a member does not turn up for a particular meeting, others tend to get in touch to see if all is well. In U3A circles, it is a deep belief that leading such lives keeps people active longer and significantly delays the need for any extra care. This cannot be proven in any statistical way, but, apart from anything else, the economic impact that the U3A movement has across the UK is deemed to be quite significant.

Much has been written about the advantages of lifelong learning, also the need for social cohesion. U3A is all of these writ very large indeed. It is not a set of theoretical ideas, it is reality that can be seen throughout the length and breadth of the country. And this all happens by third agers, for third agers with no external interference or funding. All members can proudly say, “We did this on our own—and look what we’ve achieved!”

There is a saying that learning prepares you for the next stage of life. In the third age, perhaps learning, and all its trappings, is the next stage of life. A key point here is that everyone wants to learn. It is just that they may not phrase it that way. An interest in the history of football or of music will take you through the social mores of the time. Interest then stimulates interest. Before you know it, you are actively engaged. In Swansea U3A, we are proud to have instigated such a wide spread of interest groups and created an atmosphere in which members can create new interest groups on just about anything.

Future Considerations

Universities of the Third Age are important and will become even more so in the future. Consequently, the sustainability of the movement is special and must be carefully nurtured. As with any living organisation, the speed of its own internal learning must be equal to, or greater than, the speed of external change. It would be a supreme irony if U3A failed to take on board this fundamental lesson for long-term health and vitality.

Many of those who helped set up the U3A movement are, thankfully, still with us. We must continue to respect all founders of all U3As. Indeed, they are so still sharp of mind that you underestimate them at your peril. They are living testimonies of the deep impact of learning and friendship. However, new members entering U3A have, inevitably, different backgrounds, different experiences and different senses of value. “Baby boomers” do not offer themselves as volunteers so easily and many expect “things” to be laid on for them. Topics of interests have also changed, sometimes subtly, sometimes quite radically. Added to this is the pace of technology. This is not going to slow down, neither should it. When one adds the mix of wider social cultures, this is quite a heady brew to mull over. To make sense

of the future, the following areas need to be considered in-depth and in terms of how they impact both each other's and today's approaches.

More Connections and More Relationships

To broaden an understanding of what interests are gaining favour in different parts of the UK, U3As must connect with each other from outside their regions. Furthermore, wider relationships need to be built with technology companies, universities and corporate enterprises. The ensuing research should benefit all parties; over 350,000 U3A members provide a substantial test-bed for health-related apps and newer technologies such as anticipatory computing.

Technology

Whilst using technology for efficiency still has a long way to go within all U3As, a deeper and more profound impact will result from examining technology for learning. Massive Online Open Courses (MOOCS) are gaining ground, but they do not sit comfortably with U3A members; they neither overcome feelings of isolation nor do they lend themselves to group debate in a social setting; chat rooms are not enough. In itself, learning does not meet the extra needs of sharing findings and building a sense of recognition and respect. However, these are still early days and they need to be trialled more thoroughly.

More encouraging is the developing area of digital storytelling whereby U3A members choose a topic then use new technology to bring it to life. In Swansea, this is a current area of experimentation with potential subjects such as family history and memories of old Swansea being considered. The results can be shared across the UK, within Swansea and with families or other communities. Such work embodies the spirit of U3A in that members undertake joint research, collecting photographs and movie clips, helping each other with the editing and publishing in whatever form is suitable e.g. social media or eBooks.

Diversity

Although they have their complexities, building relationships and using technology are straightforward in that there is a collective mind in terms of what can be achieved. Diversity is more difficult to grasp. Membership in Swansea started with the more affluent or more educated sectors of the local population. However, good progress is being made in spreading knowledge about the real nature of learning, and we are being seen as more of a comfortable organisation where members from

all walks of life can sit happily side by side. But there is much more to do. If the hugely positive impact of U3A is to be felt by everyone, we need to reach out in more fundamental ways, talking directly with different communities and seeking to understand their interests and concerns.

Lessons to Take Away

Current Situation

Over the last five years, membership of Swansea U3A has doubled, more than the national average. We are clearly doing something right. From the outset, Swansea took to its heart the core principles of self-help learning and self-funding. We have shown that a U3A can start small, and by staying true to U3A's principles, it can develop into a successful cornerstone of the community. In doing this, we went about it in our own way without interference.

In essence, this means that any group of like-minded people regardless of their location or origins can do the same. Building a shared vision based upon mutual help builds a trusted community that is seen to generate enthusiasm and a common sense of purpose.

However, in our history, we have never been inward looking. From the very beginning, we have sought to build relationships with Swansea University (with whom we have signed a Memorandum of Understanding), other learning institutions, Swansea City Council, Swansea Museum and communities throughout Wales. We have also given talks to companies' pre-retirement schemes and have built inter-generational links and links with care homes and others less fortunate than us. Whilst not part of any interest group, we deem building such relationships to be an extremely important factor in our collective DNA.

As far as our members are concerned, we continually stress the value of our volunteers since they are the lifeblood of everything we do. No one does anything because they are directed to do so; an organisation that relies on volunteers for everything must develop a real sense of mutual trust and respect. This means that when disagreements surface, there is no damage to relationships.

We have always been flexible—before our current lecture rooms we had to move several times as buildings became unavailable to us. Our overheads are very low and our interest groups meet wherever they want, whenever they want and fund these meetings in the way that they want.

Swansea U3A is a living organisation that embodies the vibrancy of real lifelong learning. Along the way, our members' lives have been enriched and we have become an important community asset. We have moved with the times whilst protecting the needs of every member regardless of their ages.

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Author Biography

Anthony Hughes has worked for over thirty years in the fields of senior management and organisational change. In addition to his directorships and work with start-ups, he has championed the cause of lifelong learning; this has led to being involved in such initiatives as Prince Charles' Business in the Community and mentoring with Prime Cymru. With this background, it is not surprising that he has been chairman of Swansea U3A (Wales's largest U3A with nearly 2000 members) was Trustee for all Welsh U3As (over 55 U3As with c.15,000 members). In that capacity, he was also a member of the National Executive Committee of the Third Age Trust.

Part V
Working in Partnership

Chapter 21

Working in Partnership

Chris Sivers

Abstract This brief chapter provides an overview to the case studies and theories that will be explored in the following pages. It suggests that the development of social capital, the development of partnerships and the development of learning cities are inextricably linked.

The goal in developing learning cities, as defined on the Global Network of Learning Cities Website, is

... to enrich human potential, promote equality and social justice, maintain social cohesion, and create sustainable prosperity.

Clearly, the breadth of this vision is such that no single agency can achieve it on its own. Addressing the concept of ‘wicked issues’ takes a wider view of the causes of inequality, poverty and social interaction, and how they interact with one another in complex systems. Partnerships of different agencies can bring together the organisational knowledge and know-how to create a different narrative for learning cities. This is not simply a nice thing to do. Such approaches have the potential to support growth, improve productivity and develop more resourceful communities, which are all core to the successful development of cities as a whole.

There are as many different kinds of partnerships as there are definitions of what makes a good one. Strategic and business partnerships improve productivity, such as in supply chain partnerships and collaborative logistics management. Formal partnerships of public agencies enable organisations to work together on common goals to improve outcomes for children, such as the Local Safeguarding Boards in the UK or in international public health arrangements such as Healthy Cities run by the World Health Organisation. And informal partnerships with individual citizens can help to create resourceful individuals, families and communities as in the strongly recognised Family Partnerships model being adopted in the USA.

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Following a review of the literature on attributes of partnerships, Carnwell and Carson identify the following as common to most definitions:

- Trust and confidence in accountability;
- Respect for specialist expertise;
- Joint working;
- Teamwork;
- Blurring of professional boundaries;
- Members of partnerships share the same vested interests;
- Appropriate governance structures;
- Common goals;
- Transparent lines of communication within and between partner agencies;
- Agreement about objectives;
- Reciprocity;
- Empathy.

This could paint a very rosy picture of partnership working. Often it is far from straightforward, with disagreement about objectives, a lack of transparency in planning and competition for resources. Anyone who has any experience of partnership working recognises the crucial role that individuals with commitment and passion collectively showing leadership can make. The right people will find ways to add value and work together for common goals whatever any other formal governance arrangements might be.

In times of austerity, there may be a temptation to dismiss partnership working as an unnecessary drain on scarce resources. However, the case for partnership collaborations can be made even more strongly. When done well, collective planning can effectively reduce duplication and sharing data and intelligence can more effectively target scarce resources where they can make the most difference. In the first few years of austerity in the UK, on the whole, performance in local government improved as agencies were forced to think differently about spending, and to ruthlessly prioritise on what matters most. The best agencies saw that every challenge brings an opportunity and took that opportunity to unleash innovation in their organisations and partnerships. Thinking about operating in a fundamentally changed environment encourages different conversations about how to achieve the same ambitions by looking further afield to understand how others throughout the global community manage with far less.

The most forward-looking agencies took the opportunity to recognise more clearly the wider resources that exist in communities and cities and how they may be hidden or accessed differently. Individuals often have great resources to manage their own learning, their own social networks and their health, if they get some support and learning to enable them to do so. Families, when supported well and in a way that meets their needs, are extremely resourceful in overcoming significant challenges and disadvantages. When communities are supported to develop social capital and social networks, they can become the most effective mechanism to achieve individual well-being, improving health, education and employment

outcomes. These are not necessarily a traditional form of partnership, but one that can access resources previously unrecognised.

At the heart of partnership working is the development of trust between the actors. Enabling an environment of trust necessarily means opening up oneself or one's organisation to potential vulnerability. Here, there is a parallel with developing a learning culture. In order to learn, one must make oneself vulnerable and open up to new ideas, challenging assumptions and rethinking new futures. Partnerships themselves are about collaborative learning in challenging contexts.

Complementarity has been at the heart of the approach to developing our Entrepreneurial Learning City in Swansea. We wanted to promote learning at all ages, making it a normal part of everyone's lives. We have enterprise education being embedded in primary schools, secondary schools, tertiary education and higher education. Entrepreneurial skills are what employers regularly tell us are key skills they consider in choosing employees. There is no one organisation that could have developed this range of provision and regular embedding of the approach across the city. It needed passionate people working in city government, universities, colleges and schools. We take the opportunity to regularly promote the vision of entrepreneurship through high-profile competitions such as Young Business Dragons. This is all about preparing the children and young people of Swansea for the future, matching the ambition we have for the city region economy. This is no one organisation's responsibility, but by working together we have significantly raised the profile of entrepreneurial skills and given our children a better chance for their future. Colleagues and partners provide a more in-depth view of Swansea's achievements throughout this publication.

In this section, we provide an overview of the range of partnerships identified previously.

Peter Kearns and Denise Reghenzani-Kearns discuss the Pascal International Exchange, an international partnership providing opportunities for organisations to exchange information and ideas about different approaches to developing learning cities. They provide analysis of different mechanisms used to share experience across international borders and promote wider understanding.

The other chapter in this part is a two-part case study of approaches to developing digital clusters in two cities in the UK: Bath and Swansea. These less formal collaborative models are examples of how people with a common ambition work together to support one another in a relationship that benefits them all.

There is a growing body of evidence that social networks and social capital provide 'glue' in communities to produce the best outcomes. The feeling of connectedness and the practical support that can be offered from family and community networks is increasingly being seen as having an economic value. According to Putnam (2000, pp. 296–297, cited in Gelsthorpe and West-Burnham, p. 5):

Statistically, the correlation between high social capital and positive child development is as close to perfect as social scientists ever find in data analysis of this sort.

And in relation to the development of learning cities, West-Burnham writes:

What is clear is that high social capital enhances academic success. Therefore one answer to academic under-achievement might be not just to strive to improve the efficiency of schools but rather to increase social capital.

Gelsthorpe and West-Burnham, (p. 5).

However, social capital is not easily built and is certainly difficult for public agencies to grow. By its very nature social capital is organic, growing from the networks that people and communities value themselves.

Perhaps part of the response is that our partnerships and collaboration to develop learning cities are in itself developing communities of practice that enables us to work together and learn from one another.

In spite of curriculum, discipline and exhortation, the learning that is most personally transformative turns out to be the learning that involves membership of communities of practice.

Wenger, cited in Gelsthorpe and West-Burnham, p. 11.

In partnership working on learning cities, we could be working to transform both our cities and ourselves.

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Author Biography

Chris Sivers is the Director of People at City and County of Swansea Council. She has responsibility in the Council for education and schools, social services and poverty and preventative services. She has a passion for developing services to support disadvantaged people and promoting equality. Previously, she was the Assistant Chief Executive at Darlington Borough Council where she introduced significant improvements in commissioning, a zero-based budget process and a highly successful review of the Local Strategic Partnership. She has a background and qualifications in teaching adults basic and key skills. Following her achievement of a degree in Social Science research, she holds two master's degrees and is in the process of completing a third, on International Development Management.

Chapter 22

Building Enterprising Learning Cities: The Pascal International Exchanges (PIE) Experience

Peter Kearns and Denise Reghenzani-Kearns

Abstract PASCAL International Exchanges (PIE) provided a low-cost first opportunity for online exchanges of information and experience between learning cities around the world. Twenty-two cities participated in the programme between 2010 and 2013 from regions across the five continents. The PIE experience showed the value of diversity as a stimulus to new ideas about learning city development with the influences of East Asia particularly significant. PIE was instrumental in the development of EcCoWell ideas about holistic and integrated approaches to learning city development and is taken as an example of the value of international exchanges in fostering enterprising approaches to learning city development with Taipei, Cork and PASCAL interacting in this initiative. Lessons from the PIE experience are influencing the evolution of the next phase of PASCAL Learning Cities 2020 Networks as the successor programme to PIE with five networks currently under development.

Creating PIE

PIE was an innovation conducted by the PASCAL International Observatory between 2010 and 2013 to test ways in which the Internet could be harnessed to foster low-cost online exchanges of ideas and experience between learning cities around the world. While PIE encouraged several initiatives in building learning cities and fostering enterprise, PIE was superseded in 2014 by a more structured programme called Learning City Networks which sought to develop five networks in areas designated for innovation.

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This chapter comments on the lessons from the PIE experience and discusses several examples where the programme has encouraged enterprising initiatives in other cities. The main lesson that emerged from the PIE experience is that international exchanges of information and experiences can serve as a catalyst to new ideas about learning cities, stimulating action to explore and implement such ideas.

The Search for Low-Cost Approaches to Sharing Ideas and Experience

The PASCAL PIE initiative emerged from a search in Australia for low-cost ways of keeping in touch with innovative developments in learning cities in other parts of the world. This question took a particular force in the Australian context that already had been implementing some learning community initiatives, especially in the states of Victoria and South Australia, but where there had also been little government funding to support the action taken by entrepreneurs.

The issue was ventilated in 2008 when the authors of this chapter were invited to give the keynote address at the biannual conference of the Australian Learning Communities Network in Adelaide, South Australia. Adding in PASCAL colleague, Norman Longworth, we titled a joint paper “Towards a 21st Century Approach to Promoting Dynamic Learning Communities: A vision for 2020” (Kearns et al. 2008). In this paper, we discussed ways in which the European Union had provided funds to support research and development of learning communities and cities through the EUROlocal storehouse, with initiatives such as TELS, INDICATORS, LILLIPUT, LILARA, PALLACE and PENR3L. This led to our conclusion that learning community/city development was impeded in Australia by the absence of similar government funding to support research, development and connections with emerging ideas across the globe. However, there was no immediate low-cost solution to this dilemma, so that the question rested for the next few years.

The PIE Concept Emerges

The PIE concept as a response to this question emerged in a somewhat fortuitous manner when Kearns and Reghenzani-Kearns visited Canada in 2010 and met with the then project officer of the Vancouver Learning City, Stacey Huget. During the discussion, we mentioned the “Adelaide question” and Huget’s immediate answer was “why not use the Internet?”. This was the moment that brought the PIE concept to life.

Further discussion clarified the features of an Internet approach:

- The programme will be centred on a website hosted by a relevant organisation
- Participants in the programme would outline their ideas and experience in a short paper of two to three pages in length with a set of questions added to foster dialogue on key issues
- Papers will be posted on the host website to encourage responses/comments through blogs.

This approach was subsequently discussed with our PASCAL colleagues who endorsed the notion as a useful undertaking. Professor Michael Osborne gave the name “stimulus papers” to the summary papers we had discussed in Vancouver. A proposal was prepared by Kearns for the PASCAL Board which approved this initiative, so that the PASCAL International Exchanges (PIE) was inaugurated in January 2011, following the ideas developed in late 2010.

The PIE Website

It was agreed that the programme would have a separate, dedicated presence as a distinctive programme within the PASCAL International Observatory website, with the address: <http://pie.pascalobservatory.org>. The organisation of the PIE website evolved online with the development of PIE and with the growing sophistication of the presentations and exchanges. Initially, the website provided for the posting of PIE stimulus papers, blogs in response to the papers/questions, and for news and information items. As the PIE experience expanded with a larger and more diverse set of stimulus papers from participating cities, a further section was added for PIE themes. These themes included cultural policy, responding to social change, preserving the environment, information/communications technology and media, healthy cities and sustaining these clusters of interest. The thematic groupings foreshadowed in some respects the later concept of the PASCAL Learning Cities Networks 2020 programme where common thematic areas were adopted as a means of encouraging more interactivity between cities progressing through a focus on mutual concerns and interests. It was not, however, a successful aspect of PIE, for reasons discussed later.

Recruitment of Participants

The value of PIE depended substantially on the number and range of learning cities attracted to participate. Recruitment was based essentially on approaching known contacts in cities or universities who had an interest in supporting learning cities, communities and regions. This method meant that there was an orientation towards

the traditional home of learning communities and cities: Europe, Australia, Canada; although a number of stimulus papers were personally sought from African cities and prepared by key referents in the initial phase of PIE throughout 2011 and 2012.

The main change in PIE, which increased its strength and impact, came with the inclusion of East Asian cities, primarily Chinese cities, in 2012 and 2013. The addition of Beijing and then Shanghai was followed by Seoul (Korea) and a paper by Professor Asutshi Makino on the Japanese city of Iida which illustrated East Asian approaches.

In undertaking an analysis of the PIE experience, it is sensible to group the participating learning cities from the preceding discussion in three broad geographically reflected areas. The groups have certain common features, including cultural influences, in the way learning cities developed, or did not develop in the case of Africa viz:

- **Western Model** (Europe, Australia, Canada): Cork, Limerick, Vancouver, Hume Global Learning Village, Bielefeld, Sydney, Bari, Glasgow, Galway, Kaunas
- **East Asian Model** Beijing, Shanghai, Seoul, Gwang Myeong, Iida
- **African Group** Dar es Salaam, Kampala, Gaborone, Dakar, Addis Ababa

Comment is given below on selected examples from these three groupings. We then take several examples drawn from enterprising members where PIE encouraged initiatives in other cities. The examples to be discussed are: the EcCoWell initiative: towards holistic development as learning cities, from Taipei to Cork; and the Learning Neighbourhoods Pilots: from the influence of Beijing and Shanghai to pilots in Cork and Taipei.

The Traditional Western Model

The modern concept of a learning city developed in a number of European cities following an OECD paper on this subject (OECD 1992) and was then exported to influence initiatives in Australia, Canada and South Africa. Cork, the Hume Global Learning Village and Vancouver are discussed as typical examples of this approach.

Cork, however, has been a particularly enterprising learning city which has taken up and led the EcCoWell and Learning Neighbourhood initiatives advocated by PASCAL under PIE.

Cork Learning City (Ireland)

The Cork City Development Board (CCDB) established the genesis of Cork as a City of Learning within its initial integrated strategy for economic, social, cultural development for 2002–2012: “Imagine our Future”, under a specific strategic theme. Cork was seen by the above Board as a place where learning was accessible, which targeted the diversity of needs, was of high quality, and was continuous.

The city was recognised internationally for its learning and research, and as a catalyst for creativity.

Neylon (2010) has described how, with stakeholders involved in the subsequent Cork City Learning Forum, a number of working groups were set up to promote lifelong learning by organising a pilot Learning Week in 2004. This has become the highly successful Lifelong Learning Festival with the motto: *Investigate, Participate, Celebrate!* To enable participation, all events are free and organisations offering opportunities can get involved without charge and be included in presenting events to members of the public. New relationships and existing partnerships have been further developed and strengthened over time.

A coordinator works on a blend of part and full time throughout the year, but volunteers and organisations contribute through various sectors of education and learning in the community. Main sponsors were the Cork City Council and the City of Cork Vocational Education Committee (VEC) with other media, business and education sector partners contributing in various ways, and with a Learning Forum being central to the week's activities.

Cork has also embraced the EcCoWell approach to being a holistic, comprehensive and cohesive learning city and is piloting a Learning Neighbourhood project. Identified disadvantages have been targeted and addressed by the government Revitalising Areas through Planning, Investment and Development (RAPID). Community education is an ongoing commitment that is organised and funded by VEC, and coordination ensures ideas and resources are shared without duplication. Themed learning networks across the city meet special interest needs, e.g. disability education or community music. This initiative is still at an early stage of development, so that evaluation reports are not yet available. However, there has been considerable community interest and support.

Hume Global Learning Village (HGLV), Australia

Local government (Hume City Council) has supported and fostered a vision for an inclusive learning community; integrating social, economic and cultural development within a community of considerable diversity and socio-economic disadvantage. Since 2003, there have been three phases of development through its "Learning Together" strategies. The Village had its origins with the Council's Safe City Task Force as well as through adopting a Social Justice Charter and Bill of Human Rights.

The importance of lifelong learning in its many contexts has been part of the long-term perspectives built into the various generations of HGLV strategic plans in alignment with the Council's overall plan. The building of two public libraries with community meeting rooms, training facilities, public access Internet, gallery space and coffee shop provides a concrete focal point and sense of place for initiatives. Partnerships have matured with stakeholders and sponsors who jointly orient goals towards building a learning culture and strengthening pathways to learning.

An Advisory Board, with Kearns (2011) a founding member, drove innovation in the work of HGLV, and this role, after a decade now, has been well integrated into Council with existing staff and functions. An ongoing and “blue-sky” approach has led to the establishment of an Ideas Lab to foster information, communications and technology education and training, the conduct of an annual Research Day, the implementation of the Four Seasons of Learning programmes and the delivery of programmes (informal to formal) that support participant and teacher interests.

The sustainability of the HGLV approach has been attributed to the strong leadership through the City Council, a clear vision integrated into strategic planning, responsiveness to community needs, linking social, educational, cultural and economic goals with learning, balancing community bottom-up and external input to develop relevant initiatives, progressing into a collective ownership and giving priority to sound and consistent communications.

Vancouver Learning City (Canada)

Vancouver sought to address the challenge of inclusive engagement of the community. While the city has many attractive features, there were concerns with inadequate responses to literacy, poverty, homelessness and drug addiction issues. An informal coalition met, with a proclamation to be a learning city signed by the Mayor in June 2006, and a part-time independent consultant, Huget (2010), later appointed to direct the project.

The Vancouver Learning City (VLC) functioned on three principles that embraced promoting all learning opportunities, exercised the belief in encouraging learning from community-based “aspirations and experiences”, and with the entity of VLC becoming a catalyst/collaborator to engender learning in an increasingly diverse and complex society.

One of the key strategies for citizen engagement was a “Just Curious” brand that enabled the populace to discover more about the forms of learning and city attributes/initiatives available through a game show approach. This opened up into further activities for learning through community events and “virtual” online sites profiling what was available for engaged learning. Reaching the disengaged and measuring the indirect/long-term outcomes were ongoing goals.

The East Asian Approaches

PIE stimulus papers from Beijing, Shanghai, Seoul, Gwang Myeong and Iido illustrate East Asian approaches to building learning cities. While most of these innovations have been implemented in much larger cities than any of the Western examples of learning cities, there are also significant differences in terms of governance, cultural attributes and identity, the role of government and action in local communities that make the East Asian model distinctive.

Han and Makino, in an overview of learning cities in China, Korea and Japan, termed the East Asian approach “a community relations model” which they saw as focused on “activities to heal and stabilise social issues and foster cultural unity” (Han and Makino 2013, p. 466). The PIE experience supports this view.

Both Beijing and Shanghai demonstrate where development of the learning city occurs on three levels:

- The city overall where policy for the whole city is determined;
- The district where policy is adapted and developed for this part of the city;
- The local neighbourhood, including streets, with actions led by learning centres, colleges and social enterprises to reach down to families and individuals (Huang 2013; Yuan 2012).

This tripartite, cascading construct of Chinese learning cities corresponds to the view of Jane Jacobs, an American urbanist, that is: good city development should occur at three cascading levels (Jacobs 1961). It enables local needs to be taken into account while a unified strategic approach is taken at the city and district levels.

Partnerships are also formulised in Chinese learning cities with universities, such as the East China Normal University and the Beijing Normal University, having important roles, including research and evaluation, in the Shanghai and Beijing Learning cities, respectively.

The addition of East Asian cities to PIE has clearly had a profound impact on PIE and has led to some interesting developments in other cities such as the Learning Neighbourhood projects, the EcCoWell initiative, and the growing interest in holistic development. The Learning Neighbourhood pilots are discussed below as an example of an innovation (in Taipei and Cork) that was influenced by these developments, and promoted by PASCAL in our directing role within PIE. These initiatives have been observed by implementers as enabling the transfer of ideas between cities.

The African Group

While a number of stimulus papers were prepared for African cities, generally by academics, none of them showed sustainable learning cities, with the African authors generally illustrating the barriers to initiating and sustaining learning city development in Africa. These included the attitudes of city councils, the lack of governmental priority, and, perhaps above all, the lack of funding.

Stimulus papers were prepared for Dar es Salaam, Kampala, Gaborone, Dakar and Addis Ababa. Kearns and Abel Ishume wrote an overview paper in 2012 in which they called for a new generation of African learning cities to build on international experience with “careful development in clarifying the characteristics of an African model for learning city development and strategies that will progress this vision” (Kearns and Ishumi 2012, pp. 134–135). This has not happened, and the needs continue to exist.

A further attempt to find a way forward for learning cities in Africa occurred in 2013, when Idowu Biao, Josephine Esaete and Joseph Onyuu were commissioned to write a paper on “The role of building learning cities in the rejuvenation of Africa” for the special issue of the *International Review of Education*, by editors Osborne, Kearns and Yang. They also concluded that a new approach was needed that was adapted to African countries and opted for the philosophy of

conscientisation advocated by Paulo Freire (Biao et al. 2013, p. 482). This has not happened to date, so we reluctantly conclude that PIE did not generate or see any progress in developing the concept of learning cities in African countries unless city governance could make it a priority. The need remains to be addressed.

Innovations Fostered by PIE

In this final section, we discuss two innovations emerging from PIE experiences as exemplars of ways in which a programme of international exchanges of information and experience can foster and support enterprise and innovation in other cities across the globe. This effect could be known as “the PIE dividend”. These two innovations are:

- The EcCoWell Initiative: creating holistic approaches to building sustainable learning cities; and
- Learning Neighbourhood Projects: bringing the benefits of learning cities to local neighbourhoods.

The EcCoWell Initiative

The EcCoWell concept emerged from participation by the authors of this paper in an international conference convened by the Taipei City Council in 2011 to consider planning for the Taipei Learning City initiative. We found ourselves impressed by the broad, comprehensive and cooperative approach adopted for development development, which included initiatives across the following aspects:

- Universal Intelligence (UI) for e-services
- Cultural City
- Eco City
- Waterfront City
- Healthy City
- Safe City
- Welfare City

This breadth of foci and initiatives linked for learning city approaches was wider and more soundly interwoven than anything we had encountered in Europe or Australia up to this time. It raised fundamental questions about the nature of learning cities in terms of how to be cohesive, realising “joined up” governance, achieving convergence of aims, and how to implement lifelong responses overall. It also examined the relationship of learning cities with complementary agendas such as healthy cities, age-friendly cities, resilient cities, green cities and cultural cities. These questions are to be taken up at the 13th PASCAL International Conference in Glasgow, June 2016.

Following the Taipei conference, Kearns reported on this approach to his PASCAL colleagues, suggesting that the Taipei model appeared to point to the need

to progress beyond existent silo development elsewhere that was isolating and kept initiatives separate in cities; towards a more strategic, integrated and holistic development. There was general agreement on the value of such an approach which the then Chair of the PASCAL Board, Jarl Bengtsson, supported as the EcCoWell concept, i.e. learning cities that developed their economy, ecology, community, culture, well-being and lifelong learning in a comprehensive and integrated way. This concept was then built into a paper by Kearns titled “EcCoWell: Living and Learning in Sustainable Opportunity Cities” which was posted on the PIE website (Kearns 2012, pp. 4–16). This introduced themes which would be important to PASCAL work on learning cities. The themes included the idea of coalitions of Healthy Cities, Green Cities, Learning Cities and relating initiatives and a set of ideas about sustainability in EcCoWell cities that was developed further by PASCAL during the next three years.

The EcCoWell idea was then taken up by the city of Cork which included a seminar on “Cities of the Future: The EcCoWell Approach” during the 2013 Cork Lifelong Learning Festival and invited Kearns to lead the seminar. Cork subsequently established an EcCoWell Committee with broad cross-sectorial participation to consider how EcCoWell could be built into the future development of the city.

As a key aspect of this objective, Cork convened an international conference on EcCoWell in September 2013, with wide participation from a number of countries. EcCoWell development in Cork subsequently became linked to the UNESCO Institute of Lifelong Learning (UIL) initiative on learning cities, following the 2013 UIL Beijing Conference. Cork participated in that conference, adopted the Beijing Declaration, and Cork City Council decided to merge the EcCoWell and Beijing Declaration working parties.

While the EcCoWell initiative largely hinges on entrepreneurial action taken by the city of Cork, PASCAL has supported this action in a number of ways. These include Kearns reviewing the PASCAL EcCoWell paper in May 2013 for the November 2013 PASCAL International Conference *Cities Learning Together* in Hong Kong, including an EcCoWell network (led by Cork) under the new PASCAL Learning Cities Networks programme, and guiding the concept of learning cities to progress from separate, unconnected initiatives to prosper in a new, holistic development which was the basis for the central theme of the 13th PASCAL International Conference held at the University of Glasgow on 3–5 June 2016—*Global, Local, Connected, Sustainable, Healthy & Resilient*.

The theme was directly reflected in the “Challenge Question” set for the conference, <http://conference2016.pascalobservatory.org/>:

In a world of ever increasing silo initiatives, in what ways can Learning City initiatives be connected to complementary initiatives such as Smart Cities and Resilient Cities to facilitate holistic approaches for sustainable urban development and build good cities and communities which are inclusive, smart and resilient?

In addition, this was reflected in *The PASCAL Glasgow Statement on Innovation on Building Sustainable Learning Cities* to provide guidelines on innovation in learning city development.¹

The EcCoWell initiative, emerging as an outcome of the PASCAL PIE programme, provides several insights into ways of building entrepreneurial learning cities. They include as follows:

- the value of a programme such as PIE that promotes innovative ideas on approaches to developing learning cities;
- the important role of PASCAL as a broker in disseminating such ideas;
- the value of programmes such as the Cork Lifelong Learning Festival that contribute to building a learning culture in a city.

These influences were elicited in an article for the *Irish Journal of Adult and Community Education* which speculated that the success of the Cork Lifelong Learning Festival over some years contributed to building a learning culture in Cork that made the city more receptive to new ideas and which fostered a cadre of potential entrepreneurs who developed habits of cross-sectorial dialogue and achievement (Kearns et al. 2013, pp. 97–99). This paper compared the Cork experience with the experience of Nordic countries (e.g. Sweden, Denmark and Finland) where initiatives such as folk high schools and heritage centres have contributed to a similar strong tradition of adult education as drivers towards an enterprising learning culture.

Embedded opportunity and access for lifelong learning are important for a culture of productive learning and require further research and analysis. It is also a question of building a learning culture that is substantially different in the era of what is known as the fourth industrial revolution, as discussed at world economic forums, and also referred to as the “second machine age” (Brynjolfsson and McAfee 2014); in applying to the earlier experience of Cork and Limerick.

Learning Neighbourhood Projects

The origins of the Learning Neighbourhood projects, which were subsequently implemented in Taipei and Cork, lay in the perceived experience of Beijing and Shanghai in disseminating their learning city initiatives into local communities and streets (Huang 2013; Yuan 2012). Taipei also had clusters of centres or organisations for local-level learning and empowerment. The importance of action at a local level in large cities was also confirmed by PIE stimulus papers on Sydney (Read 2013) and New York (Kearns 2013).

The stimulus papers on Beijing and Shanghai showed how community education institutions and organisations were established in neighbourhoods, funded by district governments (Huang 2013; Yuan 2012). They are seen as “important life-classrooms for the ordinary citizens, especially the aged and new-natives”

¹<http://conference2016.pascalobservatory.org/conference-2016/news?page=2>.

(Huang 2013, p. 5). A similar situation existed in Beijing where Yuan reported that “everyone should be able to study anywhere at any time, and the majority of residents will regard learning as a way of life” (Yuan 2012, p. 8).

While the origins of the Learning Neighbourhood projects can be found in the Beijing and Shanghai stimulus papers, subsequent stimulus papers for Sydney and New York confirmed the importance of a similar approach to promoting lifelong learning opportunities for all within local communities. The Sydney paper illustrated a development based around designated urban villages that were used to involve local communities in strategic planning for the city and to foster a sense of community in local areas (Read 2013). The stimulus paper for New York (Kearns 2013) described this major metropolis as a city of neighbourhoods and demonstrated the mix of influences that conditioned local neighbourhood development.

Although the genesis of Learning Neighbourhood projects emerged from the PIE experience, they commenced after 2013 in the framework of the PASCAL Learning City Networks programme, with Cork and Taipei both undertaking projects. Cork inaugurated at the Lifelong Learning Festival in March 2015, following a forum devoted to planning and building relationships for partnership. It was decided to focus on neighbourhoods with considerable disadvantage: Knocknaheeny, Togher and Ballyphehane were selected for this reason. University College Cork (UCC) became an active partner and provided the coordinator for the project.

A conceptual model for the Cork project was drawn from the experience of the Schools of Health in Ireland for *Developing a Health Promoting School*. The approach also took account of the success of the Cork Lifelong Learning Festival with its open embrace for learning activities. This was articulated in the following definition (O’Tuama and O’Sullivan 2015, p. 3) of a “Neighbourhood of Learning” and used for the project:

A Learning Neighbourhood is an area that is constantly strengthening its practice of learning, providing a diversity of learning opportunities for the whole population through partnership and collaboration.

The action plan, with strategies outlined for neighbourhood learning, was adopted for eleven identified stages of becoming a *Health Promoting School*. The Cork Neighbourhood of Learning is still at an early stage of development so that it is too early to draw conclusions on the value of this approach and results. It is likely these initiatives will be seen to be important in future learning city development.

The Taipei Learning City took a different approach, drawing on projects undertaken in 115 communities in the city of Taipei over six years. Community Colleges have commonly played a key role in these projects with a college established in each of the 11 administrative districts of the city.

This initiative culminated in a two-day workshop held on 29–30 July 2015, with the first day held in Taipei, for discussion of a number of community cases while the workshop went to the Lohas Community Centre in Zhong Qin Valley for the second day. Taipei provided PASCAL with information on several of the communities brought into these discussions (Kearns 2015).

One example was a stakeholder profile given for the Nan Ji Chang community of Zongqin village (6996 persons, 3034 households) with a case study presented on the founding of a food bank in the village using a redundant post office as a centre. This case study described the role of Zhongsheng Community College in working with the Nan Ji Chang community in what was termed “the thinking model of an inclusive learning community” (Pi-Yun Yang, unpublished).

The Nan Ji Chang community illustrates the important role of community colleges in Taipei in addressing disadvantage, promoting citizenship, offering adult education and progressing the social objectives of learning cities. This is a model that has considerable value in cities that comprise a number of “urban villages”. In addition, the collaboration between Cork and Taipei in the Learning Neighbourhoods projects shows the value of partnership in cities with different approaches where cross-fertilisation of insights is a stimulus to creative, purposeful initiatives.

The PIE Effects

A review of the impact and dividends of the PASCAL PIE initiatives during the years 2010–2013 and the carry-on influences in the successor Learning Cities Networks programme point to the conclusion that international exchanges of information and experience between learning cities can serve as a catalyst to entrepreneurial and innovative developments in cities. The examples of real, practical projects discussed in this paper are: the EcCoWell holistic enhancements and the Learning Neighbourhood pilots show this effect. While both of these initiatives were driven by a strong PASCAL advisory role, it is also likely that a wider range of influences from international exchanges will have impacted on development in the long term in building a sustainable learning culture in these cities.

The need to create a pervasive learning culture is recognised in the UNESCO Beijing Declaration as one of the pillars of a sustainable learning city. How this occurs in a range of contexts is a key question requiring further research and discussion. While the PIE experience is of too short a duration to throw much light on this, there are insights to be gained from the experience of several cities that participated in PIE—particularly Shanghai, Cork and Beijing. Also, there is the influence of online open access to ideas, policies, strategies and activities that could be assimilated into other learning city approaches incidentally.

In the case of Cork, the impact of a very successful Lifelong Learning Festival over a period of some twelve years appears to be reflected in the entrepreneurial action that the city has shown with its integration of the EcCoWell initiative, Learning Neighbourhood Pilot projects and the early adoption of the UNESCO Beijing Declaration.

The experience of PIE and PASCAL Learning City Networks suggests that an emerging learning culture in the cities involved, if sustained over time, is likely to serve as a stimulus to entrepreneurial initiatives. While such action to date has been

in the social rather than economic areas, the management expert, Peter Drucker, recognises that a comprehensive approach to building an entrepreneurial society is required:

What we need is an entrepreneurial society in which innovation and entrepreneurship are normal, steady, and continuous. Just as management has become the specific organ of all contemporary institutions, and the integrating organ of our society of organisations, so innovation and entrepreneurship have to become an integral life-sustaining activity in our organisations, our economy, our society (Drucker 1985, p. 236).

This view suggests that all sustainable learning cities should be seen as entrepreneurial learning cities with policies and strategies that foster a learning culture which in turn encourages and supports entrepreneurial initiatives, in both social and economic areas. Building a learning culture is a step in this direction in making foundations that are further constructed to create a strong scaffold for an entrepreneurial society. This tentative conclusion from the PIE and LCN programmes requires further research over a longer time span, using the PIE years as an initial platform for shaping ideas about the role and worth of learning communities as the change agent that adds value and which responds to constant change.

While both the initiatives discussed in this chapter mainly involve social innovations in reach and delivery, further investigation—including case studies—is needed to explore and translate ways in which learning cities build an entrepreneurial culture in which, to use the words of Drucker, “innovation and entrepreneurship are normal, steady and continuous”. The PIE experience is a starting point for the journey, but the challenge now is to follow through in building the knowledge and experiential base on how learning cities become, and remain, entrepreneurial and sustainable while providing opportunities for all.

PIE, EcCoWell and the Learning Neighbourhood pilot projects through their successor LCN initiative engendered opportunities for innovation and enterprise in learning cities. It would be remiss not to look at the approach to conceiving and introducing these programmes as a model of entrepreneurship in itself as it embodies the characteristics, replicated with implementation, of what Formica (2015) identifies as “path finders” and “path creators”. These are human qualities which use technology to envision a “new territory” and set about to make the possible a reality.

Pursuing a vision to bring together learning cities in exchanging ideas and information for mutual benefit grasped such a possibility and the resources that existed to establish PIE in the first instance. The commitment to such a solution-based task in identifying and recruiting individuals/groups as fellow drivers within cities was crucial. Ideas and possibilities were relayed in inventive, yet relevant terms. Issues were raised by those involved in delivery themselves. By outlining the benefits that could accrue through strong partnerships, the process translated an opportunity into action that was path finding and creating. Capitalising upon and leveraging ideas or issues input from the various cities aided the activities for further innovation. It was important that as concepts and issues were framed, restrictions were not imposed that could have curbed authenticity.

Motivation, risk-taking and persistence were keys, with considerable time devoted to making connections, establishing relationships, brokering and finding the next steps to amplify the experience of taking part in these PASCAL programmes. As Rampton (2014) comments: “entrepreneurs see opportunity everywhere”, but they actually also perceive the future by putting a plan in motion and see it through. Learning cities are taking this path.

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Chapter 23

How to Grow a Digital Cluster in a City Region

Adam Curtis and David Kelly

Abstract With the success of a number of digital clusters across the world, many cities are now competing to create their own. The benefits of highly paid, fulfilling jobs and the support for general entrepreneurship that comes with a strong digital cluster are obvious advantages. This chapter outlines two digital cluster case studies from Swansea and Bath and explains how they are creating and running digital clusters in two very different cities in the UK, through a strong partnership approach. These case studies will help set out a blueprint for how to create successful digital clusters that support entrepreneurial developments and instigate lasting change to benefit the city region.

Introduction

In recent years, many national and city governments have been putting a sharper focus on the creation and growth of business clusters.

The term business cluster was introduced and popularised by Porter (1990). He claimed that clusters have the potential to affect competition in three ways: by increasing the productivity of the companies in the cluster; by driving innovation in the field; and by stimulating new businesses in the field. Gilbert describes the formation and influence of these clusters

When a prominent university or a powerhouse company draws other, smaller organisations into its region, a digital cluster forms, supporting entrepreneurs as they develop their own breakthroughs.¹

¹<http://www.strategy-business.com/article/00349?gko=005e7>.

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Digital clusters in the USA have grown from these seeds of enterprise; Stanford University was highly instrumental in the development of Silicon Valley, while Microsoft had an important role in helping to form Seattle's digital cluster. In more recent times, support from governments keen to develop a cluster has been the basis for the start of clusters forming, usually through the establishment of tech incubators as seen most notably in the formation of London's 'Tech City'.

This chapter outlines two digital cluster case studies, one from Swansea and the other from Bath. It explains how each is creating and running a digital cluster, both in very different cities in the UK using a strong partnership approach. These case studies will help set out a blueprint for creating successful digital clusters that support entrepreneurial developments and instigate lasting change to benefit a city region.

Swansea

Predigital Cluster

To understand the current digital cluster in Swansea, it is important to look at what existed before. Swansea already had a small number of successful digital-focused companies created over the last few decades. Swansea is currently home to one of the most successful estate agent software companies in the UK, Dezrez. Started in 1998, it now employs over a hundred highly skilled staff and has had recognition from the UK Prime Minister of the time, Tony Blair, in a visit to its offices in 2004. Mobile Computing Systems, started in 2001, created the Priority 1 system which, over a period of 10 years, served over a thousand construction projects with its personal digital assistant software and was acquired by the company Viewpoint in 2014. iCreate, founded in 2003, is one of the UK's leading architectural visualisation and 3D architectural rendering companies. The company produces 3D fly through animations of buildings and has worked on many international projects including the Sochi Winter Olympic Park. As previously suggested, the foundation of a strong digital cluster is a base of digital and creative talent in an area. The successful establishment of these companies, along with others, has helped to lay the foundation of a digital cluster by retaining digital talent in the Swansea area. In turn, these pools of talented people contain the entrepreneurs and start-up teams of the future, but this handful of companies does not constitute a cluster on its own.

The Current Digital Cluster

Tech City's 2015 Tech Nation report shows that Swansea and South Wales are emerging as a tech force to be reckoned with, with over 28,000 people in digital

employment across the region. South Wales is also one of the UK's top five fastest growing clusters, with a growth rate of new digital companies incorporated between 2010 and 2013 at 87%, well above the UK average of 53%.²

So what does this mean for Swansea? What is causing this growth in digital companies and how can the city continue to expand? While Swansea has had relative success from tech-based companies in the past, to date no single company has acted as a 'powerhouse' and drawn other companies and individuals to the city and governmental support has been slow in realising the potential within the region. It is necessary to look beyond Gilbert's notion to find the reason for the emergence of Swansea's tech cluster.

Within Wales, there is a growing network of co-working office spaces known as IndyCube. These spaces, founded by Mark Hooper, have provided a physical location for new networks of entrepreneurs to form. Co-working spaces are a great source for the first shoots of a cluster to start; they can help accelerate connections between individuals not involved in other informal or business networks. In areas where the cost of renting office space can be prohibitive, co-working provides affordable office space. At present, the cost of office space within Swansea is low compared to other parts of the UK, and in most cases, it can be cheaper for companies to have their own space.

However, co-working spaces go beyond offering an individual or a start-up company desk space. Many play a vital role within the community by providing a space for informal meetings and events, which in turn play an even more important role in forming and bonding the cluster together. This has been made evident with the creation in 2014 of a regular software developer meetup group, called SSDC, which sees between fifty and a hundred developers meet monthly to share knowledge and learning. Groups such as these are important for sharing and introducing technical knowledge to the local developer community and inspiring the digital talent in the region, helping to provide a forum for people passionate about their innovative work. The formation of SSDC saw the first annual software conference in Wales, SwanseaCon, in 2015. This conference attracted over two hundred attendees and offered talks and discussions given by local, national and international software experts. Delegates attended the event from around the world.

Groups like these show that Swansea has the talent needed to survive in the modern tech world. However, talent alone is not enough. Ambition is also required to turn that potential into action. Starting a business is not commonplace, and business events can be part of the solution to encourage entrepreneurs to take the plunge. In Swansea and South Wales, this has been provided by organisations such as the Welsh Government-backed Big Ideas Wales, Young Business Dragons and Startup Weekend Swansea. All three organisations run regular business competitions and 'hackathons' that bring creative and digital talents together and help focus them on delivering a business idea.

²<http://www.techcityuk.com/blog/2015/03/tech-nation-south-wales>.

Big Ideas is focused across all of Wales and provides on-the-ground support and mentorship from local entrepreneurs for young people. This takes place through talks, workshops and events. Big Ideas Wales' yearly Boot Camp Challenge is open to people between 16 and 24 years of age with a business idea. Over a weekend, they receive advice and training from successful businesses and a 12-month package of support to help them succeed.

Annual Swansea-based business competitions are also starting to become an important part of the landscape and none more so than Young Business Dragons and Startup Weekend. Young Business Dragons has run for a number of years in Swansea and the surrounding areas. It is a business idea competition run in regional heats with a final normally in November/December. Years 9 and 10 school children (aged 14–15 years) from schools around the local government areas of Swansea, Neath Port Talbot and Carmarthen have to come up with a business idea around that year's topic, then produce a business plan and pitch the idea at the semi-finals and final events.

Startup Weekend Swansea is for participants of any age and follows the global format of Startup Weekends run by TechStars, a global start-up ecosystem that helps entrepreneurs build businesses. It is a 54 h event that lets entrepreneurs validate their ideas and build a team. Typically, teams build a working prototype of their businesses over the course of a weekend. The Swansea event started in 2013, and each year some eighty participants form between ten and twelve teams. Startup Weekend is about forming long-term businesses that will be able to start trading on the Monday morning after the event. Swansea has had great success with Startup Weekend teams continuing to trade, and over the last 3 years, it has seen an average of three to four of the teams go on to form their businesses and still be trading over 12 months later. Tech-focused ideas are a popular concept at Startup Weekend, and a number of companies, including Skippr, InMySchool, Johnny on the Spot and Adlet, have successfully used the event as a launch pad.

The presence of events like these, and the number of people involved in them, is a good indication of digital activity within the city, and of a cluster existing. It gives the media a focus for the city's cluster and allows ideas and individuals to collaborate. One weakness of these events, also found elsewhere, is the focus on younger individuals. Though it is easier to try a business idea out when you are young with few commitments, the most successful long-term businesses typically have an older, more experienced team at their core.

These events also focus on start-up businesses. A digital cluster is an ecosystem that needs companies and organisations at every level. This takes time, even decades, to achieve. Currently, Swansea has at the top the Driver and Vehicle Licensing Agency, DVLA, and at the bottom a growing number of start-ups and small software agencies, with companies like Dezrez in the middle.

For businesses and clusters to grow and thrive, support is needed beyond the start-up stage. Through Welsh Assembly Government support, Swansea businesses have access to the Government-funded Accelerated Growth Programme, which focuses on providing individual support to high-growth potential businesses from coaches who have a track record of delivery. The Accelerated Growth Programme

is focused on established businesses, linking similar growth phase businesses together to network and collaborate while providing coaching, professional advice, development and trading opportunities.

Swansea's Digital Cluster Beyond the Businesses

Collaboration has been a big part of the digital cluster forming in Swansea. Both local universities, the local Further Education college, Welsh Assembly Government and Swansea City Council have on many occasions worked together and with members of the digital cluster to support and fund activities. All have ambitions and projects of their own to build on the cluster's success, meaning a cohesive and symbiotic relationship will continue.

From a skills perspective, a substantial number of skilled software developers, business and design specialists, adding to the local pool of talent.

Beyond providing businesses with highly skilled graduates, the University of Wales Trinity St. David and Swansea University, the local universities, are actively involved with the local start-up scene. The University of Wales Trinity St. David supports SwanCon and Swansea University's School of Management sponsors The Young Business Dragons. Both universities work together as part of the organising team for Startup Weekend, providing funding, support and mentoring.

The Welsh Assembly Government is very open to supporting businesses and Swansea's tech cluster. It sponsors most of the events referred to above and has provided a number of grants that have been beneficial to many of the digital businesses in Swansea. Two funds worth highlighting are Jobs Growth and the Digital Development Fund. Jobs Growth funds the National Minimum Wage for 6 months hire of a new employee, helping to give Welsh businesses a head start when finances are limited. The Digital Development Fund is a matched funding grant of 50% up to £50,000 for any business to fund the development of a new digital product.

Swansea Council has been highly supportive with the introduction in 2007 of Small Business Rates Relief and has supported the Swansea Startup Weekend since it began. From 2015, it is embarking on a regeneration of the city centre and has the allocation of space for digital companies high on its agenda.

However, the collaborative effort in Swansea needs to be carefully monitored and evaluated. How does Swansea compare with other similar city locations? To answer this, we can use two metrics, city population and the number of new start-ups registered at Companies House in a given year. For three neighbouring cities, Table 23.1 shows the use of these metrics.

Metrics and performance indicators are important to measure the success and growth of a cluster, but, on their own, the above are very crude. Many digital companies register their address in London, often for marketing purposes, or they may be registered as sole traders. The figures in the table include all newly registered start-ups, regardless of whether they are digitally focused or not. Of course,

Table 23.1 Digital cluster city comparison

	Population	Start-ups in 2014	Percentage of population (%)
Swansea	241,300	875	0.00360
Cardiff	354,300	1835	0.00510
Bristol	442,500	2805	0.00630

these issues are a problem for most city regions when it comes to measuring start-up rates. Putting these problems aside, what the above does show is that Swansea is not yet operating at a comparable capacity to other major cities in Wales and the South West of England. Swansea still has a small jobs pool for graduates. The emergence of a start-up community in Swansea is still in its infancy, and many graduates will move to larger cities, such as Bristol and London, in search of employment after graduation.

However, with the growing tech cluster and businesses that make it up, an increasing number of graduates are being employed locally, helping to expand the cluster and become the start-ups of the future.

Swansea's approach to its digital cluster so far has not focused on a specialist field. The number of businesses is simply too small for there to be a focus on one business sector or problem. The drive is simply on encouraging tech businesses of any subject to form and stay in Swansea. Other areas often have a focus, for example the Scottish Highlands focus on Health Care, the Manchester region has a £950 million MediaCityUK complex in Salford and focuses on digital media, and Bristol has a strong focus on embedded software development and engineering. There is now a second generation of digital companies emerging in Swansea, based around Web technology but focusing on a wide range of industries and problems. These extend from conveyancing software to advertising platforms, and social analytic tools, to name but a few of the areas in which companies are being created.

Access to customers and making local businesses aware of customers' needs can help accelerate growth. Swansea's current cluster has identified its own remote customers and used local talent to meet the need.

What Benefits Has the Cluster Brought?

One of the main benefits of the current cluster has been the retention of local talented individuals; more locally produced graduates are being hired or starting businesses and staying in Swansea. They are actively being encouraged to engage with the community while they study, allowing them to put down roots rather than job hunting in or considering moving to other cities. When start-up projects or businesses fail, there is an obvious pool of opportunities and businesses in the area to fall back into. The higher profile of the cluster and the focus helps inspire competitive individuals to get involved and push themselves and everyone else forward.

What Lessons Have Been Learnt from Growing the Cluster?

Entrepreneurship is, much of the time, about learning from mistakes. Collaboration is important, but competition and individual effort are equally important. Many of the current successful digital companies in Swansea have not collaborated but have ‘gone it alone’—working for years with one focus and in isolation to achieve success. The lead bodies on collaboration in Swansea have been the local universities and government bodies, in partnership with a few private businesses. They have worked together in the background like parents, smoothing the paths and providing support when and where needed. Collaboration has worked well in Swansea. The city has developed a long-term approach, looking at a period of 6–10 years to achieve meaningful results. There is no point in ‘focusing small’, and the focus for a digital cluster should be on creating businesses that sell outside the city. It has been easier to grow talent locally than to attract it in from outside the city. The average age of successful digital entrepreneurs when they start their big idea is forty.³ To take a short-term view on trying to create one massive success quickly is a very high risk for a city.

When companies reach out internationally and sell to the world, collaboration comes more readily. If you take the example of the digital agencies in Swansea, compared to the digital product companies, you see that the agencies compete for the same customers, many of them local. Though collaboration will happen, it is not likely, because it is more natural for the agencies to compete. When you have many digital product companies in one area selling different products, often to different customers, collaboration is easier to achieve. The only thing these companies need to compete for is employees.

What Might the Future Look Like?

The digital cluster is still small in Swansea, but over the next 10 years this is likely to change. Both of the local universities are building large new campuses as they grow their capacity to produce skilled employees and to conduct research. Swansea companies are working hard to create larger success stories and a bigger community. Swansea University is already helping this become a reality with its funded Foundation Degree in computer science, of which many mature students are taking advantage. Swansea is also part of British Telecom’s G-fast pilot, which will provide connections with over 300 Mbps download speeds. Faster connectivity opens up more possibility for tech companies to operate from and start in Swansea.

With increased activity industry specialisms might form. Many successful clusters start to form around a local need, like the development of copper production in Swansea in the 1700s. Because the copper industry was in Swansea, the

³<http://www.entrepreneur.com/article/235357>.

innovators and entrepreneurs had a problem on their doorstep to solve. You cannot get a big industry to move to a new city that easily, but the world today is a more connected place. Government, councils and clusters can bring the problems from around the world to their city without moving the industry. An important question for the future is whether Swansea, and cities of a similar size and location, will form a speciality, a field of digital excellence that a handful of companies will excel at. Areas that may become specialities for companies in Swansea could grow out of some of its current companies. The DVLA is becoming more engaged with the local digital community, and this could lead the way to creating a group of companies focused on creating products for it. The DVLA could use its influence in road law to push more testing activity to happen in the region, which could see driverless technology becoming a big focus. With a large number of car insurance companies based in South Wales, this does not seem too far-fetched.

Three goals Swansea could focus on to take it to the next step include:

- A private home-grown tech company that turns over £10m+ (Dezrez had a turnover of £5m in 2014);
- An increase in the percentage of start-ups per year created; and
- Attract a large well-known multinational digital company to open a research and development office in the city employing local graduates and digital employees.

Bath

This case study will explore the City of Bath, where a strong digital technology economy has emerged over the past 3–5 years. The study will explore how the digital cluster formed and grew, what the defining features of the cluster are now, what benefits are apparent, the lessons that have been learned during the growth of the cluster, and will finally discuss what the future may hold for Bath's digital economy.

Context/Predigital Cluster

In order to frame this case study, it is important initially to set a context and provide some history for the city of Bath prior to the emergence of current digital activity.

Internationally recognised as a masterpiece of human creative genius, a spa city with a long tradition of radical reinvention and discovery. The Bath of today was shaped by the extraordinary imagination and entrepreneurialism of our ancestors who created a city so innovative and beautiful that UNESCO designated it a World Heritage Site of outstanding universal value (Bath Bridge CIC).

Bath, located in the South West of England, is often considered to be a tourist city, thriving primarily on retail and tourism for economic growth. In reality, a recent GWE Business West report stated that the creative digital sector in Bath was worth £800 m to the local economy, more than retail and tourism combined. It is a relatively small city with a population of just under 90,000. The city itself is also geographically very concentrated, covering only 11 square miles and with a city centre covering less than two square miles. By comparison, the nearby city of Bristol has a population closer to 450,000 and covers almost 43 square miles. Within its modest confines, Bath has, over the last three decades, played host to some very sizeable creative, tech and digital organisations.

Future Publishing (now Future PLC) was founded in the city in 1985. By 1994, Future had grown into one of the leading print publishing businesses in the UK and was subsequently sold for £52.7m. By 2001, the company's global success saw the company change hands again for £142m. At its peak, Future employed over 2000 staff worldwide (some 700 in Bath) and it is today still headquartered in the city, having provided sizeable employment to the region for the past three decades.

Other notable names associated with Bath include Picochip (microchip manufacturing company), which was acquired in 2012 for just under \$52m, and European software consultancy IPL which has an annual revenue of around £30m. Both companies remain in Bath providing substantial local employment. In total over the past decades, there have been over a dozen home-grown creative, digital or tech businesses with a turnover in the tens of millions. Some of these are still in operation; others have since been sold or have been wound up.

Academically, Bath is also home to two outstanding universities. The University of Bath, which has consistently been ranked among the top ten universities in the UK, recently did extremely well in a UK-wide research assessment exercise and offers the area excellent computer science and business management graduates, as well as a wealth of relevant research. Bath Spa University is home to some of the UK's leading arts and humanities subjects, providing the city's digital sector with talented designers, photographers and other creative specialists.

How the Digital Cluster Started and Grew

Inherent in any large corporate culture, at least in the kind of organisations that underpinned Bath's digital cluster, is a silo effect among employees. Once a company reaches a certain size, the level of red tape, policy and procedure reaches an extent that noticeably generates an outwardly negative cultural impact on the business and its employees. As such, it is not the large organisations we have mentioned who helped the digital economy in Bath to emerge. If anything, these large companies had their eyes on much bigger and more international opportunities to worry about than the interactions with the city. This is not to say that the key to the success of the digital economy is not directly attributable to these organisations, specifically, to their offspring. Large organisations tend to attract high-calibre staff.

This is partly due to their ability to pay at an attractive level, partly due to the type of projects they can offer their employees and partly because of their recruitment marketing reach. However, when these employees are ready to leave, they have a few options. Many wish to stay in the local area. Bath is a UNESCO World Heritage City and is considered one of the best places to live in the UK. Only 90 min by rail to London, the city is surrounded by attractive countryside; Bath is an architecturally stunning city with a focus on relaxation and well-being. The schools are among the best in the country. All in all, once people have settled, they find it hard to leave. Those leaving big digital companies might look to seek alternative employment; however, as we have indicated, the city is fairly small, and prior to the digital sector boom post-2010, the best employment options would likely have required relocation or commuting outside of the city. This brings us to option two for aforementioned departing employees: starting a business. These are the businesses we refer to as offspring of the few large companies that underpinned Bath's digital cluster.

The city now plays host to second- and even third-generation offspring, all originating from employees of around 10 large organisations, who have left and been inspired to start their own companies over the past few decades. It is these offspring organisations that really kick-started the city's digital boom. Unlike the large organisations, competing business leaders were often ex-colleagues, and their size and agility in a growing marketplace led to a much higher degree of collaboration and less competition than might have been expected.

It is this collaboration which ultimately has led to the amplification of an offering to transcend beyond an individual company and into the brand of a city or region. It is also this collaboration and willingness which has led to extraordinary events like the Bath Digital Festival being born in the city.

What Does It Look Like Now and What Benefits Are Clear?

We will now examine some of the key traits that are present in the digital cluster within Bath. For the sake of simplicity, we are ignoring the impact of elements such as local and regional economic support or stimulus.

Cluster Support Groups

The city is currently home to a number of cluster support groups. The largest two are Creative Bath and Bath Digital. Creative Bath is described on its Website as 'the hub for local creatives, giving the latest news, jobs and events all in one place, promoting and supporting the creative companies, professionals and students that are situated in and around Bath'. With over 1200 companies and organisations within its member directory, Creative Bath is the largest independent voice for the

creative sector within the city. Bath Digital similarly supports the digital and tech organisations within the city, although there is a large overlap in membership between Creative Bath and Bath Digital.

Bath Digital is perhaps best known as the organising body of the Bath Digital Festival. Now, in its fourth year, the Festival attracts thousands of participants from the UK and, beyond for a ten day, twenty-five event celebration, consisting of over 120 h of curated content across 65 sessions. In the past, the Festival has hosted some prestigious digital and tech names such as Ted X, Smashing Conference, Future of Web Apps and X-Media Lab.

These two cluster support groups are independently run with steering groups consisting of members from the local creative, digital and tech community. Importantly, they are self-sustaining, not relying on funding from the local council or from national funding bodies. Importantly, Creative Bath and Bath Digital have the effect of bringing together both the businesses and the individuals who work within those businesses. Internally to the cluster, this has the effect of encouraging collaboration, and externally to the cluster, achievements can be amplified to a larger audience and with greater weight.

Workspace Funnel

Before the digital boom, one of Bath's greatest weaknesses was the lack of appropriate workspaces for businesses to start and grow. The city is known for its Georgian architecture, which does not always lend itself to modern technological business. As of 2016, Bath has a number of purpose built creative start-up spaces including The Guild (which offers flexible co-working space for freelancers through to micro teams) and the Innovation Centre (which combines workspace and business support for high-growth start-ups). Mid-sized space for companies from five to 35 employees has always been abundant in the city. However, it must be noted that as digital and tech businesses have moved into the offices of more traditional businesses (e.g. estate agents, lawyers and accountants) the building interiors have undergone a dramatic change, creating a more attractive rolling stock of property for growing businesses as each business moves upward. The city's confining geography combined with its overwhelming quantity of listed Georgian buildings means that opportunities to develop within the city are infrequent. When opportunities do arise, there is demand from developers to build more profitable housing and retail, rather than creative or office space. Space for businesses of fifty employees and above in the city centre is at a premium. However, current council plans to develop two major areas of Bath (North Quays and South Quays) have promised the delivery of an 'Innovation Quay', providing suitable space for fast growth companies by around 2018. The importance of the space funnel (small to

large) means that home-grown organisations do not need to venture to other cities when their space needs change. Furthermore, the spaces that businesses leave behind them as they climb are highly suited to businesses treading in their footsteps.

Attractive Events

Alongside events like the Bath Digital Festival, Bath plays host to a broad range of creative, digital and tech events. Events are a critical component in successfully maintaining a digital cluster as they act as the glue between the companies and individuals within the city.

BathCamp is one of the longest running tech events in the city. Taking place bimonthly, it consists of an evening of curated talks around any topic chosen by the curator and audience; from robotics and artificial intelligence to content management systems or open government data. The benefit afforded by such an event is evident when you look at the audience on any given night. Typically, it comprises a mix of local students, lecturers, business owners, employees and interested individuals. The events provide a fantastic networking opportunity for students and job seekers in the city to engage with local businesses. Much recruiting happens as a result of these events, ensuring local talent is kept within the city.

Infrastructure and Environment

Taking a broader look at the digital cluster in Bath, it is important to acknowledge the infrastructure and environment that has grown over the last 5 years to support the businesses that are now thriving in the city. One factor that is often overlooked when assessing the success of any cluster or economy is the importance of work life balance. High-growth companies need the very best staff they can afford. Interestingly, employees often rank where they live as a more important factor than their salary. This is not to suggest that every successful digital cluster needs to be located in a culturally rich, coffee shop-heavy UNESCO World Heritage City which nestles neatly in between the Cotswolds and Mendip Hills, only ninety minutes from London. However, Bath has undoubtedly reaped the reward of world-class businesses and individuals relocating from other cities to the area.

One area of infrastructure where Bath is still lagging well behind its neighbouring cities is the speed of Internet connectivity. Only a small portion of the city centre can access business fibre services, with most businesses still running on ADSL. This is an area that Bath and North East Somerset Council are currently trying to address. However, it suggests that great connectivity, while preferable, is not always a prerequisite for a thriving digital economy.

Diversity of Digital/Tech Businesses

As discussed earlier in this chapter, at the top of the food chain in Bath, there are a few huge companies, with combined revenues reaching into the hundreds of millions. However, the middle order and start-up companies are a better indicator of the growth and success currently being seen by this city. A particularly interesting case study that shows the potential of a collaborative and engaged digital cluster can be seen in the form of CiteAb (citeab.com). Launched in 2013 as a joint venture between the University of Bath and Bath-based digital product development firm Storm Consultancy, CiteAb is now the world's largest antibody search engine, an online resource for researchers which is saving the life science industry an estimated one billion US dollars per year. Highly successful start-ups like CiteAb provide the kind of vibrancy and energy to a cluster that internally helps keep aspirations high and externally helps to promote the city.

What Lessons Have Been Learned from Growing the Cluster?

Assessing Bath's success retrospectively, it is clear that the city had a number of pre-existing ingredients conducive to a thriving digital economy. A small geographic area ensured a high concentration of similar businesses, willing to collaborate and invest time in developing the community. A number of sizeable, mature tech businesses fuelled the second generation of start-ups, which in turn grew into successful businesses of their own.

This close, compact and collaborative environment is almost certainly what led to the formation of the cluster's support groups, events and partnerships which now act as beacons to the vibrant and energetic tech scene hidden beneath Bath's Georgian facade.

One element that is often underplayed is the sheer time and energy that individuals, outside of their paid work, have contributed to building Bath into the success it has become. Cluster support groups, events, festivals and networking opportunities were all started (and many still continue) as entirely volunteer-led activities. With government funding for cluster groups and festival-style events radically changing, it is hard to see how non-commercial organisations will be able to flourish in the future, an issue that Bath is currently navigating.

What Might the Future Look Like?

Undoubtedly, Bath will see the maturation of its second- and third-generation businesses, as well as the birth of a new generation of businesses over the coming decade. It will have challenges as existing publicly funded support infrastructures

change and will need to become increasingly self-sustaining. It is possible to predict a future in which greater numbers of London-based businesses throw off research and development arms in the South West of England, or relocate entirely towards the region. It would be hoped that as the calibre of businesses grows, so too does the level of talent within the city.

Bath is the perfect place to join an unusually high concentration of enterprising minds, unlock investment capital and share social ambition. It offers a new model of a compact, connected, collaborative city, where curiosity, playfulness, making and the fostering of talent, knowledge and skill across all ages, backgrounds and sectors will encourage individuals and enterprises to flourish for the long term. Bath will be internationally renowned as a beautifully inventive and entrepreneurial 21st century city with a strong social purpose and a spirit of well-being, where everyone is invited to think big – a city ready to create an extraordinary legacy for future generations.

Bath Bridge CIC

Conclusion

As discussed in each of the previous case studies, digital clusters create high-wage employment in what is arguably one of the fastest growing sectors in the UK.

The ability for digital companies to trade and compete globally combined with the emphasis that the UK education system is placing on digital skills means that cities should be considering supporting fledgling digital clusters as they emerge.

Below, we look at a number of parallels that can be drawn between Swansea and Bath which provide insight into the types of conditions that can catalyse cluster development.

First and foremost is the presence of historic, digitally focused, sizeable companies. In Swansea, these are companies like Dezrez and in Bath those like Future PLC. Both case studies reference how organisations like these provide a foundation on which their respective digital clusters and economies formed. Specifically, these large organisations paved the way for second- and even third-generation digital companies by attracting a good turnover of relevantly qualified people to the geographic area.

Both case studies strongly highlight the collaborative nature of their clusters. Collaboration between business, academic institutions and local government has proven a key to stimulating an entrepreneurial atmosphere and a stable environment for new companies to flourish. It is also clear that collaboration and a tight community encourage both the growth and retention of talent, which in turn acts as a driver to economic growth within the cluster.

Another similarity between the two case studies is the importance placed on the initiation of events and cluster support groups within the respective cities. SwanseaCon and Bath Digital Festival have been presented as markers of success, as their emergence was predicated by enough groundswell from local organisations.

One final observation is that both cities appear to perform significantly above their peers when we look at ratios versus population in statistics such as the newly registered businesses and overall economic income. Each case study suggests that the relatively small nature of each city allows for a greater cohesion of message which can in turn be amplified internationally. Swansea and Bath provide two fascinating snapshots into independently operating digital clusters. Despite being very different cities, the similarities inherent in the stories behind each of the digital clusters are quite striking, and both Swansea and Bath look set to continue to thrive over the coming decade.

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Authors Biography

Adam Curtis is a Welsh Government ‘Dynamo Role Model’ who supports young people to develop their entrepreneurial skills. A software developer with a degree in ‘Computing For Real Time Systems’ from the University of the West of England, he started his career in Hewlett Packard. He now runs the software agency Clockwork Bear and more recently co-founded the start-up Hoowla, an online case management, solution which is gaining great traction from solicitors and follows the lean start-up methodology. He is a founder of the technology business community ‘Swansea Start’ and organiser of the first Welsh Startup Weekend, which saw nine business ideas tested over a 54 h event, with five of the businesses still operational over six months after the event.

David Kelly is a Web entrepreneur, CEO and co-founder of the multi-award winning Storm Consultancy. He is well known as a technology investor, was past winner of Young Business Person of the Year, (BB Awards) and was named in the 42 under 42, Class of 2012 (SWBI). His portfolio of companies extends into both the Bioscience and Facilities Management industries, all run out of the Storm HQ in the beautiful city of Bath. He is the director of the Bath Digital Festival, a collection of thirty world-class events which take place over ten days each Autumn in Bath. He is also the co-organiser of tech-network BathSPARK and sits on the steering group of two local creative cluster groups.

Chapter 24

An Emergent Entrepreneurial Learning City Region: a Case Study of Swansea

Judith James and Jean Preece

Abstract In this chapter, two Swansea-based editors justify the choice of the ‘entrepreneurial learning’ theme for the city region. The post-industrial context of the region is described, and the process of change that led to the adoption of a ‘Learning City’ status by Swansea. This book is seen as part of that process.

Introduction

Learning Cities aim to increase participation in all learning for all their citizens. However, the width and breadth of lifelong learning can leave cities, learning organisations and citizens without a starting point or a particular area where change can be focused, which can be a disadvantage of this generalised approach. This chapter will illustrate how a Learning City can benefit from having a focused learning theme and will consider the reasons for the selection of ‘entrepreneurial learning’ as the theme for the development of the Swansea Bay Learning City Region.

The focus of this chapter is on stages in the development of an Entrepreneurial Learning City, viewed as a process that acknowledges heritage and culture, is cumulative and can be undertaken, in principle, in any city. Following a brief review of the regional context, these stages will be illustrated with specific reference to the development of the Swansea Bay Learning City Region.

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The stages are the following:

- A. Reaching a decision to create a Learning City and establishing the appropriate infrastructure to support it;
- B. Meeting the UNESCO guidelines for building Learning Cities (UNESCO 2015a); and
- C. Defining a Learning City according to the Beijing Declaration on Building Learning Cities (UNESCO 2015b).

Regional Context

To mark the holding of the British Association for the Advancement of Science Annual Conference in Swansea, a handbook entitled “Swansea and its region” traced economic, social and cultural changes that heralded the definition of Swansea as a city region (Balchin 1971). These aspects contribute to an understanding of the regional heritage. The region’s history has been shaped by an estuarine tidal port and an industrial and agricultural hinterland. Coal mining was already well developed in the Lower Swansea Valley by 1870, and it was the availability of coal, combined with investment by entrepreneurs which brought copper smelting to the area. Expansion of copper smelting was swift, and by 1823 Swansea was smelting more than half of the world output of copper (Hughes 2008). Other industries grew in the shadow of the copper smelters including the smelting of lead, zinc, gold, silver, nickel and cobalt. These were superseded later in the nineteenth century by the production of iron, steel and tinplate.

Industrial expansion was accompanied by improvements in local, regional and international communications. Roads and canals were constructed and the docks were developed. Dependence on the tidal flows in this estuary, that has one of the biggest tidal ranges in the world, was removed with the opening of a series of docks from the 1850s into the beginning of the twentieth century. With the docks came a range of maritime commercial activities.

Swansea, then, played a pivotal role in the industrial revolution, not only in the context of South Wales but also in the UK. Indeed, it has been claimed that Wales was the first industrial nation and that Swansea contributed most to this early prominence (Humphrys 2014).

Population growth accompanied this industrial and commercial expansion. In 1801, the population of Swansea was 6,831 and a century later it had grown to 134,000, which led to the absorption of numerous small communities and the growth of towns in the immediate hinterland. Industries, transport links and additional docks were to be found beyond Swansea’s boundaries forming a complicated industry-based economic region. This region was called Swansea Bay City by Humphrys (2005) and he, prophetically, promoted the idea of a regional unity that several decades later was picked up in the contemporary drive to introduce a city region.

It would be wrong to think of the urban landscape of nineteenth-century Swansea simply in terms of industries and the associated workers' housing. It would also be wrong to think of the residents at the time as comprising principally employers and workers. Miskell celebrated Swansea as an 'intelligent town', the title she used for her comprehensive study of the town in the period 1750–1855. As Miskell (2006) clearly demonstrated, industrial innovation, scientific experimentation and entrepreneurship were forged together to create a cultural environment that enabled Swansea to adapt to new circumstances and withstand the consequences of contraction in some industries and expansion in others.

We will now examine how learning became central to the development of Swansea's flexibility to adapt to changing circumstances. Stead (1975), in a review of education in Glamorgan before 1914, (the administrative county in which Swansea was located), commented that education provision in 1848 was '...limited, peripheral, informal and somewhat erratic' (p. 41). He emphasised that the administration of schooling went through three phases: the voluntary phase, the phase of the School Boards and the phase of local education authorities. Education for adults, too, passed through the voluntary phase and the local education authority phase. During the industrial revolution, the churches and the factory owners had important roles, not only in providing schools but also in providing adult and community education, in particular through Sunday Schools.

Of special interest in the context of lifelong learning are the Miners' Institutes that were a distinctive feature of many coalmining communities. To assist miners in their quest for self-improvement, they incorporated a library, reading room and meeting rooms, containing collections of books focused heavily on politics, philosophy, economics and religion. The Miners' Institutes were the hubs of an important adult education movement and influential in the development of the political Labour movement. 'I can remember going into the reading room at the Ogmere and virtually every daily newspaper published in Britain was there for you to read.... And you had people running these Institutes who were intelligent, sensitive, cultured men. They were places made by the people for the people' (Cope et al. 1996: 19).

As the nineteenth century came to a close the economic ascendancy of the coal mining and copper industries was severely challenged by global and technological changes. The decline continued well into the twentieth century, requiring major restructuring of the economic base of Swansea and its region, creating unemployment and hardship. Recently the production of steel has been facing a crisis, potentially mirroring the earlier closure of the coal industry. The development of Swansea demonstrates how Swansea's history is rooted in entrepreneurship and innovation, creating and renewing itself in response to new opportunities or as a result of necessity due to a change in fortunes. This is discussed in the next section with particular reference to recent changes in adult and community education.

A. The decision to build a Learning City.

In my presentation at UNESCO's First International Expert Meeting for preparing the 2nd International Conference on Learning Cities (James 2014), I identified five steps leading to a decision to build a Learning City; they are as follows:

- A.1. Recognition of both need and opportunity;
- A.2. Mapping the identification of key stakeholders and existing strengths;
- A.3. Gaining the commitment of local leadership;
- A.4. Forming strategic partnerships; and
- A.5. Making the decision to begin the journey.

A.1. **Recognition of both need and opportunity**

Why would a city administration choose to identify its city as a ‘Learning City’? According to Longworth,

... the fact is that learning cities, learning towns, learning regions, learning communities are terms now in common use throughout the developed and the developing world, mostly because local and regional administrations have recognised that a more prosperous future depends on the development of the human and social capital in their midst. And the key to that development is encapsulated in three words - learning, learning and learning. That means to instil the habit of learning in as many as possible of their citizens and to empower them to assist in the building of their own communities as communities of learning.

(Longworth 2006: 1)

It is important to locate the development of a Learning City in the context of its culture and history. Francis (2009: 77) captured the devastation following the 1985–86 UK-wide miners’ strike, ‘South Wales had long suffered closures. What was new in 1985–86 was the final disappearance of coal mining from large parts of the valleys. From the River Neath in the west to the River Ely in the east, not a single pit survived on the southern rim of the coalfield. The valleys had not been so silent in a hundred years’. Morgan describes the scale of change, ‘Only one coal mine is now left in Wales, employing just 290 people. Barely credible really when there were 100,000 coal miners in the early 1960s and 250,000 at the peak a century ago’. (Morgan 2013: iv).

Cope et al. (1996) document a range of community responses to the coalfield crisis. In this publication, Francis recognises that the challenges of the crisis could create an environment for new opportunities, ‘Is it not a strange paradox that we appear to learn more from our defeats than our victories? If that is so, then our so-called “defeats” can be transformed into positive experiences if we see them as episodes in a process of collective lifelong learning (Francis in Cope et al. 1996: 2).

It has been observed by Drucker that crisis and dramatic change can be the stimulus for an entrepreneurial response. ‘This defines entrepreneur and entrepreneurship—the entrepreneur always searches for change, responds to it, and exploits it as an opportunity’ (Drucker 1985: 33). This entrepreneurial spirit was demonstrated by women in the mining valleys, who campaigned during the miners’ strike in 1985. According to Francis, ‘The greatest solidarity of all was from the women of the coalfields, not just supporting, but leading the miners alongside us’. (Francis 2009: vii).

Following the miners’ strike, local women in adjacent mining valleys (the Neath and Dulais Valleys), established the Valley’s Initiative for the Employment of Women (VIEW). Some were miners’ wives; others were factory workers, local politicians, teachers and housewives. The women were motivated by the loss of employment in the mining industry and the need to provide opportunities for

women to learn, including new skills which could lead to employment or self-employment.

The VIEW initiative supported the development of two adult learning centres, the Dulais Opportunity for Voluntary Enterprise (DOVE workshop) and the Glynneath Training Centre, both located in mining villages, remote from Swansea and mainstream adult education opportunities. Partnerships were essential to the development, and the provision of courses within these communities was first supported by the Department of Adult Continuing Education at Swansea University, followed by a range of adult education providers. The South Wales Miners' Library at Swansea University supported higher level course development by creating a university branch library at the DOVE workshop in 1989. Similar development of adult learning centres in other valleys, such as the Amman and Rhondda, led to the launch, by Swansea University and partners, of the Community University of the Valleys in 1993.

The vital lesson from these community initiatives was that working in partnership is the best approach to developing sustainable and inclusive learning opportunities. With a process of negotiation used to define the curriculum, 'It sought to provide a unique partnership between the community and the university through which the community itself could grow and develop within a sense of ownership of the educational opportunities. This was a far cry from the traditional pattern of higher education by which individuals sought personal betterment through leaving their communities to access educational opportunities in clearly defined academic institutions'. (James and Pester 1998: 9–11). The principle of working collaboratively with respect for the autonomy and values of other organisations was fundamental to the Community University of the Valleys. 'The programme must not be imposed from above—it needs to be owned, and have the belief of, the people whom it is supposed to serve' (Winckler 2008: 26).

The example of Swansea Bay City Region shows that the development of a Learning City does not necessarily need to be 'top down' as a decision by a local authority or mayor, although this is frequently the approach. The capacity to create a Learning City may evolve as a result of cumulative grass-roots developments over many years.

The Learning City development in Swansea originated in a regional commitment to lifelong learning, demonstrated through years of grass-roots development as seen in the examples above, undertaken by a variety of organisations and individuals. During the 1990s, community centres for education and training were opened in disadvantaged urban communities throughout Swansea, Neath and Port Talbot. At this time, lifelong learning was part-resourced by support from the European Union's Objective One Funding, targeted at disadvantaged regions of Europe which were defined by poor economic performance. This funding enabled many innovative lifelong learning projects to be undertaken in partnership by adult education providers in the region.

An important development through these projects was the provision of facilities and training in information communication technology (ICT). Skills in ICT were viewed as essential for learners, enabling them to undertake research, complete assignments or gain employment. Often, the first point of contact with a learner was his or her enrolment on an ICT course, providing the confidence for progression to

other learning opportunities. As a generation which had not had the opportunity to learn ICT at school, it was easier for adults to admit a need to learn these skills than to admit a need for education in a more general sense. Later projects targeted different communities of disadvantage, sometimes geographical neighbourhoods or locations, or communities of interest such as asylum seekers and refugees, migrants or ethnic minorities, or to support people facing similar individual disadvantage through disability or gender.

A particular focus was on the disadvantaged urban communities, characterised in some cases by third generation unemployment. Developing social capital was related to the provision of pathways to higher education opportunities in these communities, with a range of outcomes which included active volunteering. These projects and activities developed innovative ways of supporting inclusion in life-long learning and contributed to the development of a nascent Learning City Region. Further, the projects worked together strategically to provide infrastructure such as computer laboratories, community engagement workers and curriculum pathways in order to create an environment where adult learners could thrive. Partnerships responded to a recognised regional need to engage people living in disadvantaged communities with learning opportunities, in a way which motivated and raised aspirations.

It was recognised that in order for an institution such as a university or a local authority to engage with a disadvantaged community, members of that community with an understanding of the community's needs should be closely involved. It was critical to negotiate the whole process of identifying learning needs, the engagement and recruitment of learners, and the design, development and provision of training and education. An example was the development of new ICT tutors, when it was decided to recruit and train the most successful learners from community-based ICT courses (James and Preece 2003). The added advantage of locally sourced trainers was that they were familiar with and passionate about the course content and active in their communities, so therefore recruited new learners through their trusted position and by word of mouth recommendation. This also created jobs within communities where new work opportunities were scarce.

A.2. Mapping the identification of key stakeholders and existing strengths.

Longworth defines a Learning Community:

A City, Town or Region which mobilises all its resources in every sector to develop and enrich all its human potential for the fostering of personal growth, the maintenance of social cohesion, and the creation of prosperity.

(Longworth 1999: 1)

A survey commissioned by the UK Department of Education and Employment, conducted by NIACE in 1996, recorded that the City and County of Swansea was working towards a 'City and County of Learning' (NIACE 1998: 41). 'The

initiative in Swansea is moving towards the production of a strategic plan and has developed a shared understanding of the concept as it is to be applied in Swansea' (NIACE 1998: 41–43).

With so many organisations working in the region and a multitude of lifelong learning projects, it became important to plan provision more strategically. Led by local authorities, adult education providers working with community-based learning centres formed ESF supported Adult Community Learning Networks in each county. Eventually, these came together to create the Regional Learning Partnership, which was formed to map provision, reduce duplication and identify gaps. The development of the Regional Learning Partnership was a key stage in the development of the 'Learning City Region'. It enabled partnerships to evolve and created greater success in the development of bids for a coherent programme of European funded projects.

In 2011, Swansea's progress towards developing a Learning City Region was reported within a European Lifelong Learning project. This achievement was recognised by UNESCO, and representatives from Swansea University's Department of Adult Continuing Education were invited to participate in the UNESCO Institute of Lifelong Learning's First International Expert Meeting (in 2011). The meeting was held in the Republic of Korea and several Korean Learning Cities gave presentations, which revealed that they were differentiated by choosing individual themes for their learning, related to their heritage. This meeting was for preparing the First International Conference on Learning Cities, to be held in Beijing in 2012. The meeting also considered the Key Features of a Learning City, and Swansea was invited to be a pilot for the UNESCO initiative, which involved gathering data related to the Key Features of a Learning City. This was an opportunity for Swansea to participate in an influential Global Network which would support local ambition through the development of the Learning City.

Swansea was in a strong position to identify with and sign up to the Beijing Declaration:

The Beijing Declaration on Building Learning Cities defines a Learning City as one which effectively mobilises its resources to:

- promote inclusive learning from basic to higher education;
- re-vitalise learning in families and communities;
- facilitate learning for and in the workplace;
- extend the use of modern learning technologies;
- enhance quality and excellence in learning; and
- nurture a culture of learning throughout life.

In so doing, a Learning City will enable and reinforce individual empowerment and social cohesion, economic and cultural prosperity, and sustainable development (UNESCO Institute for Lifelong Learning 2015b).

As a city region located within a developed economy, it was clear that these criteria were being met by Swansea Bay City Region. Gathering the case study data enabled the identification of examples illustrating each of the above features. The

influence of the European Union's Lifelong Learning Programme is acknowledged for its emphasis on, and support for, the development of the above features in the Swansea Bay City Region.

A.3. Gaining the commitment of local leadership.

It is important to take into account the policy context and political support for the development of a Learning City. Support for the Learning City Initiative was sought and gained from key stakeholders, including the Pro Vice-Chancellor of Swansea University and the Leader of the City and County of Swansea. The Leader is a political position representing the majority political party in local government, similar to the Mayor in many European cities. The Leader of the City and County of Swansea had included the development of a City of Learning within the Labour Party Mandate for Swansea, providing political support for the initiative. Swansea University provided project leadership, support for data analysis and development of a case study.

The invitation of a representative from UNESCO Institute for Lifelong Learning (UIL), responsible for the development of the Global Network for Learning Cities, or from a city which has been awarded the UNESCO Learning City Award, to a city event, is influential in gaining support from key stakeholders and political leaders. Swansea University invited a member of the team in the UNESCO Institute for Lifelong Learning to visit Swansea and meet with key stakeholders. An Entrepreneurial Learning City Region Steering Group was established to provide support for data collection and to prepare the Swansea Learning City Case Study.

Wales has a devolved government within the UK, with wide ranging responsibilities including education and training. The Welsh Government (2009: 2) identified two key themes, 'developing a buoyant economy' and 'supporting social justice' as essential for development in Wales. Learning activities in support of each of these agendas are frequently very different. At one end of the scale, typically, training and vocational skills development is identified as supporting the development of the economy. At the other end of the scale, lifelong learning activities such as adult community learning and working with disadvantaged communities are identified as supporting inclusivity and widening participation, in support of social justice. The challenge for a city or city region which aspires to be a Learning City in Wales is to identify a focus or theme for the development of new or increased learning which satisfies both agendas. This led to the choice of entrepreneurial learning as the theme for Swansea, as shall be further explained in the following sections.

A.4. Forming strategic partnerships.

It became apparent that changes in the regional responsibilities for economic regeneration were imminent. In November 2011, the Welsh Government established an advisory group to report on the potential role of City Regions in the economic development of Wales. 'In Wales, our cities generate only 33% of our income/wealth which is significantly the lowest proportion of all UK nations and

regions' (Welsh Government 2012: 5). The group considered international examples of City Regions as well as the four examples in England (Bristol, Manchester, Liverpool and Birmingham), concluding, 'Many city regions have a policy response based on a particular theme or project focus, which has the added benefit of creating a distinguishing regional feature or unique selling point (USP) which attracts additional investment' (Welsh Government 2012: 20). Successful international City Regions tend to have a core theme/focus: Vancouver (airport); Bilbao (culture); Lille (connectivity); and Rotterdam (logistics).

Statistical and economic evidence was considered by the advisory group, alongside responses from academics, local government, business and citizens. The City Regions Final Report recommended the formation of two City Regions in South Wales. '...a city region approach in Wales could deliver three main economic benefits: larger and more efficient labour markets, so the chances of a good match between employer needs and workers' skills are increased; larger potential markets for goods and services because of the concentration of activity and transport cost savings; and a greater exchange of knowledge, ideas and innovation. Its success is dependent on the presence of a substantial population with relevant skills, efficient communication networks, and political will' (Welsh Government 2012: 6).

The population of Swansea city in 2012 was 230,000, far below the 500,000 city population recommended for the creation of economic impact. Bringing together the four local authority areas of Swansea, Neath Port Talbot, Carmarthenshire and Pembrokeshire increased the population size of the City Region to 687,000.

In the City Regions Final Report, it was recommended '...that the Swansea Bay area be recognised as a City Region on the basis of the evidence of existing traffic flows, the potential for increased connectivity, the tradition of social and economic interdependence, the existing partnership approach and the strength of feeling apparent from responses to our call for evidence' (Welsh Government 2012: 8).

The establishment of the Swansea Bay City Region Board in 2013 provided a focus on economic development, reflected in the development of the Learning City Region Initiative. The 'need' identified in the Swansea Bay City Region was for economic development and job creation. Monitoring poverty and social exclusion in Wales identified that, 'Wales needs job creation to defeat poverty. The extent of inactivity, disability and in-work poverty in Wales reflects weak demand for labour' (Joseph Rowntree Foundation 2013). Swansea Bay City Region Board aims to establish Swansea as a 'City of Innovation', with a strong knowledge economy. The development of entrepreneurial skills, such as creativity, tenacity and problem solving, has accord with this ambition. It is recognised that these skills are in high demand by employers as well as potentially leading to the creation of new companies and employment opportunities. Surveys of employers identified that attitude and soft skills were a major barrier to the employment of school leavers and long-term unemployed people. The employers identified a need for entrepreneurial skills—recognising and acting on opportunities, problem solving, creativity, tenacity and a can-do attitude.

In 2013, key Swansea economic facts were the following:

- About 94% of companies employ less than 10 people;
- There are high numbers in low value-added sectors;
- Public sector employment is high at 10.2%, compared to 8.5% in the UK;
- The region has the lowest gross value added (GVA) per head in the UK at 72.3%;
- Youth unemployment is high at 19.3%, compared to the UK at 18.6%; and
- Economic inactivity is high at 26.3% compared to the UK at 22.2%.

(Swansea Bay City Region: Economic Regeneration Strategy 2013).

It is widely recognised that the most effective way to lift people out of poverty is through growing employment opportunities. The loss of heavy industry and the decline in low-skilled jobs in the South West Wales region creates a further need; to develop skills pathways, to enable people living in disadvantaged communities or with low skills levels to participate in any new employment opportunities. It is, however, recognised that a major challenge is of engagement, related to low aspirations and a lack of motivation.

Within Swansea Bay City Region, there are 421 local communities identified by the Welsh Index of Multiple Deprivation, with 76 of these within the most deprived 20%. According to a Joseph Rowntree Foundation report, ‘The benefits of growth in innovative, knowledge-based sectors will not automatically trickle down to households in poverty. There is no guarantee that all citizens will benefit from growth in their local economy and growth may not reach all parts of a city’ (Lee et al. 2014: Point 3, Summary). Swansea Bay Learning City Region not only needs to improve the economy, but also to find ways to ensure that all citizens can benefit through gaining the skills required to gain employment. This is recognised within the UNESCO Swansea case study,

The challenge for the Swansea Bay City Region is to boost investment and create jobs in the region while developing a model of economic growth that ensures that everyone, including residents in disadvantaged communities, can benefit from enhanced prosperity. If the barriers to participation for the residents of our most deprived areas are not addressed, the creation of a successful ‘knowledge economy’ could increase the gap between rich and poor, with a concurrent risk to social cohesion (James et al. 2015: 150).

The development of entrepreneurial skills can lead to entrepreneurship and the creation of new work opportunities. These entrepreneurial skills are much in demand by employers and are also effective in the engagement of disadvantaged and under-represented learners. Having a theme enables organisations and people to identify areas for change. As a result, the theme of entrepreneurial learning was chosen to be both inclusive and to improve the regional economy. The development of entrepreneurial skills is motivational, engaging and relevant for learners, including those from the most disadvantaged communities.

A.5. Making the decision to begin the journey.

The theme for the Learning City in Swansea Bay City Region was identified as entrepreneurial learning, in order to satisfy both economic and social equity development. The aim has been to develop entrepreneurial learning which develops creativity, innovation and entrepreneurial skills from pre-primary school to university level and throughout lifelong learning. With support from the Welsh Government, a regional network of further and higher education providers worked in partnership to establish opportunities to learn entrepreneurial skills throughout further and higher education. These skills are defined by the National Council for Graduate Entrepreneurship as ‘opportunity seeking, initiative taking, ownership of a development, commitment to see things through, personal locus of control (autonomy), intuitive decision making with limited information, networking capacity, strategic thinking, negotiation capacity, selling/persuasive capacity, achievement orientation and incremental risk taking’ (CIHE, NCGE, NESTA 2008: 31).

Following the decision to develop Swansea as an UNESCO Learning City, a regional Steering Group was formed to support data collection and write a case study. At the same time, the Regional Learning Partnership formed a subgroup to map entrepreneurial learning and entrepreneurship across the region. Embedding entrepreneurial learning in schools and further (FE) and higher education (HE) was the focus of the Learning City Initiative.

Gower College Swansea, a College of Further Education, led the regional initiative to embed enterprise education in schools, with support from further and higher education students. FE College and HE students assisted with enterprise activities in primary schools. A regional partnership was created of enterprise teachers, and joint activities were undertaken such as the first Start-up Weekend in Wales; the region has since held further similar events. Competitions were held at all levels: ‘Mini-Dragons’ in primary schools, ‘Young Business Dragons’ in secondary schools. FE and HE students worked together in teams for the regional ‘Lion’s Lair’ competition, enterprise markets and fairs were held. It was important to hold celebratory events which were attended by leading entrepreneurs and Welsh Assembly Members, to raise the profile of entrepreneurial learning.

Subsequent to the decision to build a Learning City, the Swansea Bay Entrepreneurial Learning City Region Steering Group collated baseline data for UNESCO and designed the Swansea Bay Case Study, using examples gathered from across the region. This was published in *Unlocking the Potential of Urban Communities* (UNESCO 2015c), launched at the 2nd UNESCO International Conference for Building Learning Cities in Mexico City, September 2015. At this conference, UNESCO conferred the first Learning City Awards on twelve Learning Cities world-wide, of which Swansea was the only awarded city in the UK and one of only three awarded cities in Europe. Other cities were Melton (Australia), Sorocaba (Brazil), Beijing (China), Bahir Dar (Ethiopia), Espoo (Finland), Cork (Ireland), Amman (Jordan), Mexico City (Mexico), Ybycuí (Paraguay), Balanga (Philippines) and Namyangju (Republic of Korea).

Using the UNESCO Guidelines for Building a Learning City (UNESCO 2015a), the next section will discuss continuing development in the Swansea Bay City Region.

B. The UNESCO guidelines for building Learning Cities.

The guidelines are based on these aspects:

- B.1. Develop a plan for becoming a Learning City;
- B.2. Create a coordinated structure involving all stakeholders;
- B.3. Initiate the process with celebratory events;
- B.4. Make sure that learning is accessible to all;
- B.5. Establish a monitoring and evaluation process to ensure Learning City progress; and
- B.6. Sustainable funding mechanisms.

B.1. Develop a plan for becoming a Learning City.

The work on gathering data and writing a case study provided the impetus to develop a plan. Gathering data proved challenging because the data were located in a wide variety of sources, some at Welsh Government level, some collected by local government. The Economics Department at Swansea University and the Data Centre of the City and County of Swansea provided assistance. Some data were not collected on a regular basis and were included in regional and county-wide questionnaire studies.

The plan identified these objectives, which can be used to measure results:

Objective 1: To enhance the capacity for innovation through entrepreneurial leadership by private and public sector leaders;

Objective 2: To provide professional development opportunities for educators and trainers so that entrepreneurial learning can be embedded into both formal and informal learning;

Objective 3: To ‘maximize experiential learning opportunities available for young people to explore entrepreneurship’ (Hart 2013: 1) and to embed the development of entrepreneurial skills and attitudes within formal and informal learning provision;

Objective 4: To provide support for new start-up businesses and regional companies with growth potential; and

Objective 5: To develop innovative, robust and transparent ways to measure success that includes factors such as quality of life and sustainability as well as economic factors.

The Swansea Bay Learning City Region plan recognises the importance of participation in the UNESCO Global Network of Learning Cities. It concludes that engagement with the Global Network will enable participants to learn from international best practice, work together to develop monitoring and evaluation mechanisms and disseminate results internationally (UNESCO 2015c).

B.2. Create a coordinated structure involving all stakeholders.

Three distinct but interrelated strands of work are responsible for the delivery of the Swansea Bay Learning City Region. These are the Swansea Bay City Region, the Regional Learning Partnership and the UNESCO Learning City Initiative. All three strands recognise that Swansea Bay City Region needs to develop entrepreneurial capacity.

Swansea Bay City Region Board leads on economic regeneration. The Board identifies the ecosystem requirements for entrepreneurship, research, development and innovation. The Chair of Swansea Bay City Region Board has the vision that:

I feel sure that with initiatives underway, during the next ten years this area of South West Wales will become a more confident, ambitious and well-connected region - recognised internationally as a knowledge and innovation-based society. As the UK pilot Learning City, we are developing a culture of entrepreneurship in our schools, colleges and universities. Learning to be enterprising and innovative is the main driver in our society for future prosperity. (UNESCO 2015c: 147)

Implementation of the Economic Regeneration Strategy developed by Swansea Bay City Region Board will ensure that the investment, infrastructure and knowledge which support innovation and entrepreneurship are in place. One of Swansea Bay City Region's primary aims is to 'Develop a more entrepreneurial culture across the region' (Swansea Bay City Region 2013: 22).

The Regional Learning Partnership (RLP), through implementing the Regional Delivery Plan for Employment and Skills, will 'motivate growth in the economy by transforming the learning experience for individuals and employers to create a sustainable, dynamic, entrepreneurial and innovative culture, responsive to future business opportunities' (Regional Learning Partnership 2015: Foreword). The Regional Learning Partnership established an 'Entrepreneurship Subgroup' that mapped entrepreneurial skills development activity across the region and identified gaps.

The UNESCO Learning City Initiative is the third strand, which records the development of entrepreneurial capacity and entrepreneurial learning opportunities. This initiative is undertaking research to understand and inform the development of an 'entrepreneurial Learning City Region'. The Entrepreneurial Learning City Region Initiative aims to identify how, through the development of entrepreneurial skills, we can reduce the education, skills and economic gaps between our most affluent and most deprived communities.

In order to take the theme forward, the 'Swansea Bay Entrepreneurial Learning City Region Steering Group' was established. Members attend from the four local authorities, the 'Building Enterprise Education in Swansea' network, the 'FE/HE Enterprise Hub' and all education and training providers, including the lifelong learning sector. In addition, the group has representation from the private sector through the Chamber of Commerce and through local interested entrepreneurs. Members of the group contributed to the development of the Swansea Case Study.

B.3. Initiate the process with celebratory events.

An International Symposium on Building Entrepreneurial Learning City Regions, hosted by Swansea University in 2014, brought together a wide range of interested researchers and practitioners, including a representative from UNESCO. This was followed shortly by a conference, Practice into Policy: A Global Summit of Entrepreneurial Educators, hosted by the University of Wales Trinity Saint David. This brought together international experts in entrepreneurial education to consider global perspectives that can impact or have impacted on policy-making. The outcomes informed international best practice in enterprise, entrepreneurship and entrepreneurial teaching, learning and evaluation.

The City and County of Swansea Cabinet Member for Transformation and Performance, Councillor Clive Lloyd, received the UNESCO Learning City Award at the Second International Conference on Learning Cities in Mexico City in 2015. Two representatives from Swansea University attended the First (2013) and Second (2015) UNESCO International Conferences on Learning Cities. The UNESCO Learning City Award was received by the Swansea Bay City Region Board Meeting and by the City and County of Swansea at a Full Meeting of Council in 2015.

B.4. Make sure that learning is accessible to all.

The social enterprises in post-coal-mining villages, mentioned earlier, are still providing adult education and training for learners in their communities. They have evolved and, true to their original entrepreneurial spirit, have developed and offer nurseries, charity shops, business support, tourism ventures, allotments and organic gardens, cafes and support for different community groups.

However, the community social enterprises in the disadvantaged urban communities have not fared so well. Established with support from local authority funding and the European Social Fund, they have struggled to become self-sufficient and sustainable. Recently, they have been badly affected by the loss of funding for adult community learning.

UK funding for adult community learning, often described as lifelong learning, has been severely cut. This is partly as a result of the recession and austerity measures, but lifelong learning has also gone 'out of favour', with concerns that people are participating in leisure activities which may not lead to employment and, therefore, are not a priority for government funding.

This has had three main effects:

Learners in communities of multiple deprivation, frequently disaffected by school experiences, often take a first step on to a learning pathway by engaging with informal adult community learning. Building confidence is integral to adult community learning programmes. James and Preece explain that in the development of programmes for adult learners,

Emphasis has been placed on developing confidence and assertiveness. This was considered to be very important for women seeking a return to work, as it was recognised that time at home with children contributed to a lack of confidence in making job applications. The focus groups and the questionnaires revealed that this was a major problem, and was affecting the social and personal lives of women as well as their ability to gain entry into the employment market (2003: 118).

Recent data from the Higher Education Funding Council for England reveals a dramatic nation-wide decline in part-time higher education (2015: 3). Part-time learners often aim to gain skills for employment or to achieve a return to employment. In either case, the country cannot afford to neglect this sector. In order to assist people out of poverty through gaining employment, the first step on to a skills pathway which can lead to work needs to be accessible.

The second effect is on attitudes to learning. Adults participating in learning programmes report that their participation has a strong role model impact on younger family members, improving their attitude to school work. According to a report by James and Preece on a survey of over 3000 adult learners on an ICT programme in the region, 'A large number of students have identified an impact on family motivation to participate in learning' (2003: 124). It is difficult to measure the impact of an adult learner setting an example for other, younger family members. School and further education learning is accessible to all, but like other cities in the UK and across Europe, there is a problem in Swansea Bay City Region with engagement and attendance by some young people. Young people not in education, employment or training (NEET) have become a target for engagement in Swansea because the percentage of pupils recorded as 'NEET' has been unacceptably high.

The third effect has been on retired and elderly citizens who have lost the social and cultural benefits of joining a group of learners. Loneliness is understood to be the greatest problem for many of the elderly. Recently, 'Local Area Coordinators' with a role of identifying and visiting isolated elderly citizens have been employed by local authorities. It is likely that becoming part of a group that meets frequently, such as an adult education class, enables individuals to develop a social network. The University of the Third Age (U3A), with more than a thousand members in the Swansea region, has successfully established many such groups (see Chap. 20). There are many other organisations in the voluntary sector that seek to bring people together for educational activities. These add a powerful social entrepreneurship component to the city region. However, widening participation for learners from disadvantaged communities is a challenge, as many social groups are led by, and frequently recruit, the more educated and affluent members of society.

B.5. Establish a monitoring and evaluation process to ensure Learning City progress.

In response to the UNESCO initiative, the 'Key Features of a Learning City' data have been gathered for the City Region, providing a baseline for the measurement of change. A second mapping process of all current and planned entrepreneurial

learning has been undertaken by the Regional Learning Partnership, allowing the identification of gaps, the monitoring of changes in provision and an analysis of progress.

Data on the development of entrepreneurial skills, attitudes and outcomes with regard to start-ups are gathered annually by each provider of further and higher education in the UK.

“The annual Higher Education-Business and Community Interaction Survey (HE-BCI) examines the exchange of knowledge between universities and the wider world, and informs the direction of Innovation and Engagement activity that funding bodies and universities carry out” (HEFCW 2016). The 2012/13 survey reported that universities in Wales make up 5% of the UK’s higher education population but generate 9.1% of all UK graduate business start-ups and 11.33% of active firms lasting three years or more.

Amorós and Bosma (2014) report in the Global Entrepreneurship Monitor (GEM) 2013, that 9.5% of Welsh young people was engaged in early stage entrepreneurial activity in 2012. The UK rate was reported as 8.3% in 2012.

In the GEM for 2014, ‘A significantly lower proportion of the non-entrepreneurially active population reported that there were good start-up opportunities in their local area in the next 6 months in Wales (29.5%) and Northern Ireland (25.2%) than in England (37.5%) and Scotland (38.1%)’ (Amorós and Bosma 2015). This indicates that in Wales, attention needs to be given to the ecosystem for early stage start-ups and the promotion of available support.

Progress within Swansea Bay City Region will be reviewed against the five objectives identified in the plan (see section: Develop a plan for a Learning City above). The measurement of success will be more challenging. Research into the assessment of entrepreneurial skills and how entrepreneurial attitudes are developed is being undertaken by University of Wales Trinity Saint David and Swansea University. The final objective and greatest challenge is to find innovative and transparent ways to measure success in balancing the development of greater prosperity and supporting the quality of life.

B.6. Sustainable funding mechanisms.

The Welsh Government provides core funding for education, including entrepreneurial learning, in the region. This covers formal and informal learning, in schools, colleges of further education and higher education. Local authorities are responsible for administering school education and adult community learning.

Swansea Bay City Region is a region in Europe where the GDP is less than the European average and, therefore, qualified for structural fund support. This involved bidding on a competitive basis for funds to build infrastructure and run projects. (Note: following the UK Referendum (June 23rd 2016) on UK Membership of the European Union, this qualification will be subject to significant change.) National Lottery funding provides assistance for community organisations and some formal education providers to run projects that meet the needs of the most disadvantaged people and groups. Entrepreneurs from the region are also

supporting the Learning City Initiative by volunteering to run workshops, act as mentors and provide role models.

Local authorities have received massive budget cuts due to austerity measures following the financial crisis. As a result, there is an emphasis on community or private organisations and partnerships taking responsibility for community services and facilities, including financing activities through income generation. Potentially, these changes could include the management of provision of libraries, museums, leisure and sporting facilities. Social enterprises providing community-based adult education and training, referred to earlier, are showing the way by developing activities which generate income to sustain the community centres.

Attributes of an Entrepreneurial Learning City Region (Longworth, see Chap. 1)

This section will review Swansea Bay City Region's progress by considering Longworth's attributes of an entrepreneurial Learning City Region. It will also include some plans for the future which will impact on jobs, the economy and the prospects for the city region.

C.1. Encourages all its organisations, public and private, to become learning organisations.

Swansea Bay City Region encourages the development of 'learning organisations' by all public organisations and many private organisations. An example is the development of work-based learning, continuing professional development and workforce training programmes. The provision of free and subsidised courses through support from European Structural and Social Funds has enabled employers from small- and medium-sized enterprises (SMEs) to invest in the training of their staff. Co-investment in training programmes by employers will be important as the support from European Funding declines or ceases.

C.2. Links its educational, administrative and wealth-creating organisations to develop in partnership with each other.

The Swansea Bay City Region Board has brought together a wide range of educational, administrative and wealth-creating organisations to work together in partnership, with a focus on economic development. Recently, a 'City Deal' was proposed to the UK Treasury, to develop Swansea Bay City Region as 'The Internet Coast'. According to Sir Terry Matthews, Chair of Swansea Bay City Region,

The proposal is based upon the development of three integrated strands; the internet of energy, the internet of health and wellbeing and the internet of economic acceleration. In essence we aim to innovate, test, trial and commercialise internet based solutions that will transform the future of these sectors in much the same way as the internet has transformed communications and telephony
(Matthews 2016: 3).

The local authorities, universities and colleges of further education provide a wealth of examples of partnership working with industry. Swansea University's new Bay Science and Innovation Campus is designed for 'open innovation' with industry and research co-located, increasing the potential for the commercialisation of intellectual property. The University of Wales Trinity Saint David's proposed Swansea Waterfront Innovation Quarter is designed to promote regional economic regeneration through the provision of relevant education, vocational training and continuing professional development.

C.3. Identifies and develops the skills, attributes and structures that allow people and organisations to adapt to a fast-changing world.

The region needs to create more jobs, and employers need entrepreneurial and leadership skills if their businesses are to grow. Swansea University will raise skills and drive forward productivity and turnover, supporting entrepreneurs through a targeted leadership programme to raise productivity and develop sustainable, profitable enterprises.

The speed of change means that people need opportunities to learn new skills and update existing skills. Employers need to keep their own skills and the skills of employees up to date. The College University Skills Partnership (CUSP) is a partnership between Swansea University and four colleges of further education, designed to respond to employers' skills needs and to create skills pathways. The Wales Institute for Work-based Learning is a centre for the accreditation of prior experience and learning, based at University of Wales Trinity Saint David.

C.4. Looks outward. Joins international networks to open all its citizens and organisations to learn from other countries, peoples, cultures and ideas. Treats the outside world as a huge additional resource.

In February 2016, Swansea was accepted as a member of the UNESCO Global Network of Learning Cities. This network allows us to learn about best practice from other Learning Cities, including Beijing, Mexico City, Cork, Espoo, Glasgow, Larissa, Belfast and Taipei. The Swansea Bay Learning City is linked to PASCAL International Observatory, a global alliance founded in 2002 to extend the path-finding work on learning regions and cities of the Organisation for Economic Cooperation and Development (OECD). It helps decision makers design and implement regional development strategies that balance economic growth, social equity and environmental sustainability. PASCAL has three guiding themes of place, social capital and lifelong learning and has developed active networks. Swansea University co-leads the PASCAL Entrepreneurial Learning Cities Network.

C.5. Releases the power of modern technologies in the service of education, business and industry and communities.

Swansea Bay has a strong track record of producing graduate start-ups in the digital and creative technologies sector. Swansea Bay City Region Board has attracted BT, in partnership with Alcatel Lucent, to establish a G.Fast Broadband Enterprise Test

Bed for the UK in Swansea. The Board has submitted a bid to the UK Treasury for a City Deal which will include the proposed installation of a new transatlantic cable from North America, integration with a commercially led Severnside network and the establishment of a new Cloud Data Centre Enterprise Zone in Swansea Bay (Swansea Bay City Region: A City Deal 2016). Swansea University is building a £35M Computational Foundry and has opened the £17M Data Science Building, aligned to our need to understand and use the information available through big data.

The importance of big data to achieve transformational change by designing an evidence-based course for realising the agenda of the New Millennium Goals is described;

the world must acquire a new ‘data literacy’ in order to be equipped with the tools, methodologies, capacities, and information necessary to shine a light on the challenges of responding to the new agenda. Enhanced national and international statistical capacities, rigorous indicators, reliable and timely data sets, new and non-traditional data sources, and broader and systematic disaggregation to reveal inequities will all be fundamental for implementing it. (United Nations 2014: 38–39)

C.6. Increases entrepreneurial education in schools and further and higher education.

The opportunity to develop entrepreneurial skills is embedded throughout formal education in Swansea Bay City Region. In 2015, Swansea was awarded the UK ‘Enterprising Britain’ Award for Partnership for the development of entrepreneurial education throughout the primary, secondary, further and higher education sectors. The Building Enterprise Education in Swansea (BEES) group supported the partnership approach, with further and higher education students assisting with the enterprise curriculum in primary schools. The Welsh Government’s Youth Entrepreneurship Strategy provides guidance and funding support. The website Big Ideas Wales provides information about support and events. Successful entrepreneurs from the region are selected by the Welsh Government to act as role models, visiting schools, colleges and universities and mentoring students. Enterprise projects are embedded in the Welsh Baccalaureate, and regional competitions at all levels encourage participation. Swansea has held three highly successful annual ‘Start-up Weekends’, where teams create a business over the space of a weekend.

C.7. Ensures its future through long-term strategies to foster and market innovation and creativity in all aspects of city/region development.

Clusters of new enterprise are supported by the universities, the local authorities and by private enterprise. In Swansea University, there are two Institutes of Life Science providing incubation space and a Data Science building. Swansea has a developing digital cluster, as described in the case study by Adam Curtis (Chap. 23) and high performance computing is provided free to new enterprises.

Swansea Bay City Region has applied to the UK Treasury for a City Deal which would support interventions worth in excess of £500M over twenty years. The ambition is to focus on the integrated universal themes and challenges of energy, health and well-being and create economic acceleration by harnessing the transformational power of digital networks and the asset base of the region. The proposal includes the development of ‘Future Energy’ systems building upon an existing strength in the region’s renewable energy sector; the establishment of an international Internet Gateway to accelerate economic growth and the use of Web-based technologies to develop the health and social care sector. Strands of the proposal include skills, the development of regional transport networks and the regeneration of Swansea city centre. Other future plans for the Swansea Bay City Region include the development of a tidal barrage to generate electricity, which is predicted to provide enough energy for 120,000 homes for 120 years.

C.8. Embraces and celebrates the wealth-creating opportunities of diversity.

Wales is a bilingual nation with a full commitment to embracing equality and diversity. Equality duties are set out in the Equality Act 2010 (Statutory Duties) (Wales) Regulations 2011 and came into force in April 2011.

The Act aims to ensure public authorities and those carrying out a public function consider how they can positively contribute to a fairer society in their day-to-day activities through paying due regard to eliminating unlawful discrimination, advancing equality of opportunity and fostering good relations. (Welsh Government 2016).

Diversity has many dimensions; it is recognised that some people experience multiple disadvantages and diverse groups experience different barriers to participation, which the Learning City endeavours to remove. The positive role of diversity in achieving a competitive economy is emphasised by Eraydin, Tasan-kok and Vranken (2010: 521–543). However, removal of barriers is insufficient if attitudes remain unchanged. Despite the provision of grants for employers to make adjustments, many people with disabilities still find it difficult to gain employment. Hence entrepreneurship is an attractive work option for people who may encounter barriers to employment and may provide an alternative route to competing in the job market.

A high proportion of entrepreneurs have learning difficulties such as dyslexia, where attaining traditional qualifications, so essential to gain employment, may have been challenging.

There is a much higher incidence of dyslexia in entrepreneurs than in the normal corporate management population in the US and the UK. The incidence of dyslexia in entrepreneurs is also much higher than the incidence in the population in general. The research findings suggest that dyslexic entrepreneurs may be more comfortable in a start-up or a serial entrepreneurial role so that they are able to do things in their own way. (Logan 2009: 344)

Working for an employer can be difficult to reconcile with the demands of family life, and this may make entrepreneurship, with direct control over hours and place of work, an attractive alternative for those with caring responsibilities. However, women, over-represented as carers, are substantially under-represented as entrepreneurs in the UK.

For ethnic minorities, it has been suggested that entrepreneurship has resulted in social mobility. This view is challenged by Jones and Ram:

Entrepreneurship has long been mooted as a vehicle for social mobility for ethnic minorities across Europe. For some groups, it clearly has constituted a very important ladder of opportunity... However, the 'motor' for much of this apparent entrepreneurial success is often the intensive utilisation (or exploitation) of group specific social capital rather than support from public sector interventions. Furthermore, although some ethnic groups have much higher than average levels of self-employment, this should not be seen as an unqualified indicator of 'upward mobility'. For instance, evidence indicates that many Asian small business owners are stuck in highly competitive and precarious market niches (notably, lower-order retailing); are under capitalised; work long hours, intensively utilising familial and co-ethnic labour and are struggling to survive in hostile inner-city environments.

(Jones and Ram 2015:402)

Giving positive messages can help a Learning City to enhance tolerance of diversity. Swansea became the UK's second official City of Sanctuary in May 2010 and formally adopted its constitution in February 2012. City of Sanctuary is a UK-wide national movement committed to building a culture of hospitality and welcome, especially for refugees seeking sanctuary from war and persecution. The vision of Swansea City of Sanctuary is,

to be one of a network of cities which are welcoming to all, which are proud to offer sanctuary and support to those fleeing violence or persecution, and which celebrate the contribution of asylum seekers and refugees to city life (Swansea City of Sanctuary 2016).

Over 150 supporting organisations promise to welcome and include people seeking sanctuary in their activities. The group works with organisations and individuals to make Swansea a safe, welcoming and hospitable place for those seeking sanctuary.

C.9. Engages people and organisations in implementing the entrepreneurial city's policies by unlocking their talents, ideas, knowledge, experiences, expertise and goodwill.

Uniting the different organisations in Swansea to support the development of Swansea as an UNESCO Learning City has created a focal point for the development of entrepreneurial learning. The leadership of Swansea Bay City Region Board in developing the City Deal and the leadership of the City and County of Swansea Council in developing plans for the regeneration of Swansea City Centre are creating new initiatives that engage people and organisations to work in partnership.

C.10. Communicates the advantages of the entrepreneurial Learning City/region internally to its citizens and organisations and externally to its potential customers and inward investors.

External communication has been supported through joining the UNESCO Global Network of Learning Cities and the PASCAL International Observatory. Representatives of Swansea have presented at conferences in South Korea, Beijing, Mexico City, Cork, Glasgow, Espoo, Larissa, Belfast and Taipei. Visitors to Swansea

who wish to learn about our Learning City have come from as far afield as Japan. Hosting visitors has been very motivational for organisations and individuals.

Conclusion

A Learning City is developed as a response to change, which may be social, cultural, environmental, technological, political or economic in origin. It can be seen that to be effective the Learning City requires strategic direction, leadership and a collaborative approach. The experience of Swansea demonstrates that the identification of a theme for learning enables organisations and individuals to focus on learning within a context and for a shared purpose. It is clear that the Learning City strategy needs to focus on inclusion, to ensure that all citizens can be involved and gain benefit. The impact on future generations and environmental sustainability should be considered in all Learning City developments.

The development of the Learning City is viewed as a process, and this chapter traced the development of Swansea Bay Learning City Region to date. It described the context of the region and the origins of the Learning City within a commitment to lifelong learning. The importance of a theme for a Learning City as a focus for change was illustrated through the selection of entrepreneurial learning as the theme for Swansea Bay City Region. The Learning City is still ‘under development’ and to continue in this trajectory, Swansea has ambitious plans that include the following:

- The City and County of Swansea Council plan to host a Regional UNESCO Learning City Meeting that will create a regional presentation to the 3rd UNESCO International Learning City Conference;
- Swansea is working with Cork, the UNESCO Awarded Learning City in Ireland, to enhance tourism based on heritage and environment and to develop eco-entrepreneurship;
- Swansea Learning City will support developments in Espoo, (Finland), Larissa (Greece) Taipei (Taiwan) and Belfast (N. Ireland) and other cities in their journeys to develop their Learning Cities; and
- Embedding education for sustainable development into entrepreneurial learning within the Learning City will be investigated as a means for local and regional implementation of the Sustainable Development Goals.

To achieve our plans, Swansea will be innovative, entrepreneurial and inclusive.

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Authors Biography

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Jean Preece is an experienced ICT Programme Manager and European Project Manager in the Department for Adult Continuing Education at Swansea University. She has managed the training of over 3000 disadvantaged community learners in ICT and personal development with great success in achieving employment outcomes, including self-employment. Her project 'Swansea Arrivals' supported refugees and asylum seekers to integrate into the community. Jean co-led a successful Grundtvig 3 year project (2003–2006) 'Parenting in a Multicultural European City' with eleven European partners. She has also participated in Transversal, Horizon and Lingua projects, including the XPLOIT Multilateral project which focused on the development of Learning City Regions. Jean's publications focus on the use of ICT training to enhance widening participation in higher education and she is co-editor of this publication.

Prospects

Chapter 25

Prospects for Developing Entrepreneurial Learning Cities

Arne Carlsen

Abstract Arne Carlsen, *Director of the UNESCO Institute for Lifelong Learning*, looks to the challenges of the future. How cities will, in a period of increasing urbanisation, play a critical role in meeting the global challenges as outlined in the United Nations 2030 Sustainable Development Goals.

With more than 80% of the world's goods and services now produced in urban areas (World Cities Report 2016), it is not an exaggeration to assert that the economic and social futures of countries, regions and the world will be made in cities. Cities are places where economies and cultures as well as political and ecological systems converge. They are places where new economic ideas crystallise, where heterogeneous groupings of people learn to coexist as neighbours and where democratic experiments emerge to make way for previously excluded social groups to be included. In short, cities are platforms for global and local changes in the twenty-first century.

However, unsustainable imbalances between demography, ecology, the economy, society and institutions are making the future of too many cities unpromising. Rapid demographic and spatial growth, coupled with the expansion of economic activities, and the environmental footprint of cities have triggered dynamics which public institutions are unable to manage effectively. Municipal governments are under increasing pressure to find solutions to such challenges.

The 2030 Agenda for Sustainable Development, adopted at the 2015 United Nations Sustainable Development Summit as an action plan for people, the planet and prosperity, emphasises the critical role that cities will play in tackling global challenges. The transformative power of cities is recognised in Sustainable Development Goal (SDG) 11, which aims to 'make cities and human settlements inclusive, safe, resilient and sustainable' (UN 2015). But as the role of cities extends to all 17 SDGs, local governments will complement the entire SDG

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framework. The 2030 Agenda emphasises that the SDGs are integrated and indivisible. Platforms therefore do not exist as independent entities, but rather as ‘nodes’ within the wider, complex web of interrelationships which compose a national ‘2030 Agenda system’.

Cities will become drivers of innovative sustainable development at the local level. To achieve this, it is imperative that cities develop adequate responses to the learning needs of the world’s fast-growing urban communities. This will entail implementing policies and plans that enable citizens to acquire the skills and competences they need to contribute to economic, social, cultural and environmental development.

Rapid urbanisation is a defining feature of the twenty-first century, driven by internal migration and population growth. How urbanisation is managed by both city and national policymakers and the types of livelihoods people can access in the city are crucial to achieving the Sustainable Development Goals.

SDG 8 seeks to promote decent work. More specifically, Target 8.3 seeks to ‘promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalisation and growth of micro-, small- and medium-sized enterprises, including through access to financial services’ (UN 2015). In this sense, policies which support job creation and entrepreneurial skills are crucial for guaranteeing decent work and better conditions for the urban poor.

A city which supports entrepreneurial skills makes a secure investment in citizens’ empowerment, long-term well-being and prosperity. The 3rd Global Report on Adult Learning and Education (UIL 2016a) has shown that adult learning and education (ALE) can help people and societies adapt to these changes. A vast body of research shows that ALE brings positive labour market outcomes for individuals, their employers, their societies and their economies. Education boosts skills, and more skilled people are more employable, successful and flexible in the labour market. They also earn higher wages. For organisations and economies, these individual benefits translate into higher levels of productivity, entrepreneurship, tax revenues and overall economic growth (UIL 2016b, p. 12).

The 25 chapters of this book aim to clarify and promote the concept of an entrepreneurial learning city in almost any context. They seek to address, from very different angles, the importance of fostering entrepreneurial skills and attitudes in formal and informal learning environments. The chapters bring together experiences from different cities in the world with special interests in developing and sustaining their economies and cultures. They explore perspectives on how to build a sustainable economic, social and cultural environment by attracting entrepreneurs and encouraging citizens to be entrepreneurial. As Peter Kearns mentions in Chap. 22, it is important to build entrepreneurial cities in which ‘innovation and entrepreneurship are normal, steady and continuous’ (Drucker 1985).

Reflecting on the varied experiences described in this book, some conclusions can be drawn:

1. Lifelong learning is a fundamental condition for entrepreneurial development and all processes of transition in cities

The 2030 Agenda for Sustainable Development represents a significant step forward in recognising education and lifelong learning as main drivers of health, economic growth, employment, sustainable consumption and production, and environmental protection. Lifelong learning is at the very centre of SDG 4, which aims to ‘ensure inclusive and equitable quality education and promote lifelong learning opportunities for all’ (UN 2015). As commented by the Director-General of UNESCO, Ms Irina Bokova, if we are to eradicate poverty and hunger, improve health, protect our planet and build more inclusive, resilient and peaceful societies, then every individual must be empowered with access to quality lifelong learning, with special attention to opportunities for girls and women. We must work together across all development areas to make lifelong learning a universal right (UNESCO 2014, back cover).

To make real changes happen, we must start with people. Lifelong learning is a strong tool for empowering people, unlocking their potential and invigorating their creativity. These are the key essences of an entrepreneurship spirit. Providing people with a broad array of learning opportunities will equip them with the skills and values they need to be entrepreneurial, thereby cultivating feelings of self-esteem and dignity and enabling them to participate fully in society.

2. Developing entrepreneurial learning cities requires inter-sectoral coordination and multi-stakeholder cooperation

An entrepreneurial learning city is represented typically by a culture characterised by motivation, collaboration, innovation, integration, sustainability, etc. To cultivate such a culture, entrepreneurial leadership and entrepreneurial learning opportunities must be in place in a variety of settings for people of all ages. This in turn demands crosscutting and inclusive action. Efforts from national and local governments, the private sector, universities, civil society and citizens in general must be comprehensive and coordinated. As discussed in Chap. 7, the most effective entrepreneurship development programmes are part of a holistic and coherent policy framework which takes into account the complementary roles of the government, private sector and donor community. Bringing these diverse groups together can be a difficult task, particularly when they have been working in isolation for a long time. Nevertheless, local governments are well situated to help guide public understanding of the complex challenges laid out in the journey towards an entrepreneurial sustainable society. By working in concert with various actors, local leaders can implement effective public policies; promote the financing and delivery of sustainable infrastructure, goods and services; support inclusiveness; and enhance sound multi-level governance. These partners typically leverage their respective core knowledge, skills, resources and assets to create solutions

which are more innovative, more transformational, more sustainable, more effective and more efficient than partners could achieve on their own. The most effective entrepreneurship development programmes will have a better chance of success if they are rooted in a holistic and coherent policy framework which supports inter-sectoral coordination and multi-stakeholder cooperation. It is also always important to be outward-looking, learning and sharing with international partners who are committed to the same development agenda. In this regard, UNESCO will continue expanding the UNESCO Global Network of Learning Cities (GNLC) and synchronise its actions with cities and partners to share best practices and promote the creation of inclusive, sustainable, creative and entrepreneurial societies.

3. Effective monitoring and evaluation will sustain the process of developing entrepreneurial learning cities

To sustain the process of developing entrepreneurial learning cities, establishing a sound monitoring and evaluation mechanism is required. This entails transforming political and theoretical discourses into concrete strategies and approaches. Beyond this, establishing a good monitoring and evaluation mechanism will help to clarify the roles and responsibilities of different stakeholders, measure achievements and progress over time, improve the quality of provision and evaluate the benefits of strategies and the efficiency of investment. Ultimately, monitoring and evaluation will provide evidence for better policymaking and programme implementation. Developing indicators may be a very complicated task for many municipalities. However, the Key Features of Learning Cities, developed by the UNESCO Institute for Lifelong Learning (UIL) and adopted at the first International Conference on Learning Cities (ICLC) in Beijing in 2013, can serve as a good reference point. The Coordination Team of the UNESCO GNLC at UIL will continue its efforts in supporting cities in establishing and strengthening monitoring and evaluation mechanisms. The critical issue is to contextualise international tools for local usage.

Conclusion

Every change starts with people. In cities, regions and countries, positive changes can be brought about by developing creativity, innovation and entrepreneurialism from pre-primary school to post-university level and throughout the life course. Given their relatively compact nature, high population densities and tight network of facilities, cities have tremendous potential to motivate and enable such changes to happen. We have good reason to believe that developing entrepreneurial learning cities will foster a more sustainable future for all human beings.

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