INTERCULTURAL RECIPROCAL LEARNING IN CHINESE AND WESTERN EDUCATION

Teacher Education in Professional Learning Communities

Lessons from the Reciprocal Learning Project

XUEFENG HUANG

Intercultural Reciprocal Learning in Chinese and Western Education

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This book series grows out of the current global interest and turmoil over comparative education and its role in international competition. The specific series grows out of two ongoing educational programs which are integrated in the partnership, the University of Windsor-Southwest University Teacher Education Reciprocal Learning Program and the Shanghai–Toronto–Beijing Sister School Network. These programs provide a comprehensive educational approach ranging from preschool to teacher education programs. This framework provides a structure for a set of ongoing Canada-China research teams in school curriculum and teacher education areas. The overall aim of the Partnership program, and therefore of the proposed book series, is to draw on school and university educational programs to create a comprehensive cross-cultural knowledge base and understanding of school education, teacher education and the cultural contexts for education in China and the West.

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Series Editors' Introduction

The Series and East-West Contrasting Educational Narratives

This book series focuses on Chinese and Western education for the purpose of mutual understanding and reciprocal learning between the East and the West. The East has been a puzzle for the West, romanticized or demonized depending on the times. East–West relations have a long history of inquiry, and action has often been framed in competitive, ideological, and colonialist terms. In 1926 Dewey complained that "As far as we have gone at all, we have gone in loco parentis, with advice, with instruction, with example and precept. Like a good parent we would have brought up China in the way in which she should go." (p. 188). This "paternal" attitude, as Dewey called it, has not always been so benign. Economic, cultural and intellectual matters have often been in the forefront since the Opium Wars of the 19th Century. Intellectually the East–West dynamic is equally dramatic as found in works by authors such as Said (1978), Tu (1993), Hall and Ames (1999), Hayhoe and Pan (2001) and many others. These writers are part of a rich conceptual knowledge across cultures literature on the historical, philosophical, cultural and educational differences of the East and West.

Education is a vital topic of international discussion and essential component part of our global consciousness. Global discussions of economics, national and regional competition, and national and regional futures often turn to education. Meanwhile local educational discussions take

place in social environments discourse of international awareness. 'How are our international neighbours doing?' 'How do they teach values?' 'We have to catch up.' These matters are vitally important. But they are not new. Higher education in universities and other forms of post-secondary education has occupied most of the attention. What is new, and what, in our view, is likely to have far-reaching impact, is the focus on school education and early childhood education as well as pre-service teacher education. For several reasons, not the least of which is national competition, the focus on school education has been driven by comparative achievement studies. When Shanghai school students topped the chart in the Program for International Student Assessment (PISA) studies the information was broadcast worldwide and generated ferocious discussion. One of the positive outcomes of this discussion is comparative research interest, the process of comparing educational similarities and differences in school practices, official policies, and social cultural influences. This comparative interest is all to the good and should help frame potential positive comparative futures. But comparative research on similarity and difference is not enough. We believe we need to reach beyond the study of similarities and differences and to explore life filled school practices of people in different cultures coming together and learning from one another. In this postmodern world of instant worldwide communication we need to go beyond comparative premises. Ideas, thoughts, images, research, knowledge, plans and policies are in constant interaction. This book series hopes to move our international educational research onto this collaborative and interactive educational landscape of schools, parents, communities, policy and international trends and forces.

Series Objectives and Contribution to Knowledge

The book series grew out of our seven-year Canada-China partnership study on reciprocal educational learning between Canada and China (Xu & Connelly, 2013–2020). The partnership developed from the current global interest and turmoil over comparative education and its role in international competition. The specific series grows out of two ongoing educational programs which are integrated in the partnership, the *University of Windsor-Southwest University Teacher Education Reciprocal Learning Program* and the *Shanghai–Toronto–Beijing Sister School Network*. These programs provide a comprehensive educational approach

ranging from preschool to teacher education programs. This framework provides a structure for a set of ongoing Canada-China research teams in school curriculum and teacher education areas. The overall aim of the *Partnership* program, and therefore of the proposed book series, is to draw on school and university educational programs to create a comprehensive cross-cultural knowledge base and understanding of school education, teacher education and the cultural contexts for education in China and the West.

The first few books in the series will be direct outgrowths of our partnership study. But because of current global conditions, there is a great deal of important related work underway throughout the world. We encourage submissions to the series and expect the series to become a home for collaborative reciprocal learning educational work between the East and the West. The starting point in our Canada-China Reciprocal Learning Partnership's is the idea of a global community in which ideas, things, and people flow between countries and cultures (Xu & Connelly, 2013). There is intense public discussion in Canada over international relations with China. The publication of international student achievement scores that rank China at the top has resulted in growing scholarly and public discussion on the differences in our educational systems. The discussion tends to focus on economic and trade relations while educational reciprocity and reciprocal learning are often absent from educational discourse. Given that the Chinese are Canada's and Ontario's largest immigrant group and that Chinese students have statistically shown academic excellence, it is critical to explore what we can learn from Chinese philosophies of education and its educational system, and what Canada can offer China in return.

The Partnership's overall goal is to compare and contrast Canadian and Chinese education in such a way that the cultural narratives of each provide frameworks for understanding and appreciating educational similarities and differences. We expect other work generated outside our partnership Grant to have different starting points and socially relevant arguments. But we do expect all series works to share the *twin goals of mutual understanding and reciprocal learning.*

Built on these twin goals the purpose of the book series is to create and assemble the definitive collection of educational writings on the similarities, differences and reciprocal learnings between education in the East and the West. Drawing on the work of partnership oriented researchers throughout the world, the series is designed to:

- build educational knowledge and understanding from a cross-cultural perspective;
- support new approaches to research on curriculum, teaching and learning in schools and teacher education programs in response to change brought on by heightened global awareness;
- provide a compelling theoretical frame for conceptualizing the philosophical and narrative historical trajectories of these two compelling worldviews on education, society and culture;
- Provide state of the art reviews of the comparative Chinese and English language literature on school curriculum and teacher education;
- Model, sustainable, school to school structures and methods of communication and educational sharing between Canada, other English speaking countries and China;
- Model, sustainable, structures and methods of initial teacher training in cross-cultural understanding;
- Contribute to a documented knowledge base of similarities, differences, comparisons and reciprocal learnings in elementary and secondary school teaching and learning curricula.

Michael Connelly
Shijing Xu

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Foreword

It is an honor to be invited to write a second foreword for this volume following that of Profs. Michael Connelly and Shijing Xu, who are widely known for their work in narrative method and are the designers of the remarkable project in Reciprocal Learning that is the subject of this book. As a scholar of comparative education who has focused on the study of China's higher education, there have been many enlightening moments for me as I have participated in this project in an advisory capacity and attended annual meetings in Shanghai, Chongqing, Windsor, and Toronto! I am thus delighted to see this book coming out of the project and want to comment on the important ways in which it contributes to the field of comparative education.

First, the core concept of reciprocity challenges the longstanding patterns of core and periphery, whereby so-called developing countries were seen as learning and reforming under the impetus of support from more advanced countries and their aid programs. What is unique about this project is the recognition that Canadian teachers in elementary and secondary schools in Toronto have as much to learn from their Chinese colleagues teaching in elementary and secondary schools in Shanghai as they have to offer to them. Given that Shanghai is an extremely cosmopolitan city with extensive international connections, the teachers in its schools are shown to be even more globally connected than the Toronto teachers. The fine details in Xuefeng's narrative account of the mutual learning that took place as teachers in the paired schools created joint activities that involved students in creative ways gives the reader a vivid

picture of the process of cross-cultural learning at the level of the classroom. This brings a richness and depth of understanding that is often missing in comparative research that focuses on differences in policy, school system and curriculum, but rarely engages with the teachers and students who are the actors on the ground.

The second point that I found striking in reading through this text is the complementarity of the approaches to education in the two very different contexts of Canada and China. While teachers in a Canadian context have considerable freedom in designing their curricula and classroom activities, teachers in China are more bound to prescribed curricular content, and more involved in shared lesson planning processes that are part of a collective approach. Given the somewhat more hierarchical character of Chinese society, as a Confucian heritage culture, school principals are also more directive as well as more engaged in their relationships with their teachers. Offsetting the student-centered creativity and orientation to action in North American progressivism is an incredible capacity for penetrating observation and deep understanding that is a rich part of the Chinese learning tradition (Lee, 1996; Hayhoe & Li, 2017). The ways in which these distinctive heritages are expressed in the collaborative activities between the paired schools, principals and teachers on both sides is a fascinating story which runs through all of the chapters in this book.

A third dimension is the new understanding of spatiality that emerges in a situation where actual travel and visits across the ocean are rare, and most engagement takes place in the virtual space where videoconferencing or communication avenues such as China's social media mobile application WeChat connects principals, teachers, and students in time zones that are typically 12–13 h apart. This kind of interaction gives flesh to an emerging literature in comparative education by scholars, such as Larsen and Beech (2014) on the ways in which the field is moving beyond traditional geographic concepts of space and boundaries toward nuanced understandings of educational interaction in the freewheeling digital and cyber worlds that our young generations inhabit so comfortably.

Finally, let me say how much I appreciate the frankness and honesty with which Xuefeng shares the many obstacles that have arisen in the project, from the initial efforts to establish the four sets of paired elementary and secondary schools in Shanghai and Toronto, through the

description of the many initiatives that failed to take shape in the ways that were hoped for and then to the balanced analysis of how far the project did or did not impact the teachers involved, and for what reasons. The final chapter provides an extremely valuable summation of the lessons learned so far and many helpful suggestions for future partnerships and international collaboration among teachers. For a long time, internationalization was considered to be something that happened largely in higher education circles, but it has been amazing to see whole schooling systems now opening themselves up to international collaboration. Toronto schools were fortunate to be able to connect with a particularly dynamic set of partners in Shanghai, where there has been a determined effort to internationalize schools over the past two decades.

Toronto, Canada

Prof. Ruth Hayhoe
University of Toronto

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Preface

The Reciprocal Learning Project

The work reported herein is one part of a large SSHRC-funded partnership research project entitled *Reciprocal Learning in Teacher Education and School Education Between Canada and China (hereafter referred to as the RL project)*. The longitudinal research project (2013–2020) is co-directed by Dr. Shijing Xu in the University of Windsor and Dr. Michael Connelly in the University of Toronto. The underpinning ideas of the RL project—bridging Western and Eastern education and reciprocal learning—has been developed and practiced in the past by the two principal investigators through multiple research and developmental initiatives. It has been shown or argued that reciprocal learning between Chinese and Canadian educators in terms of educational values and teacher education is possible and promising. One main goal of the RL project is to build cross-cultural knowledge and understanding among educational stakeholders in the two countries in order to bring about social and educational benefits within the global environment. To this end, the RL project promotes cross-cultural collaborations and hence investigates these collaborations in the areas of teacher education and school education between the two countries. The partners of the RL project include two Canadian universities, two Canadian school boards, four Chinese universities including the East China Normal University (ECNU) in Shanghai, and many Chinese schools. The leading institute of the RL project is

the University of Windsor (UW). The other Canadian university is the University of Toronto (UT), with which I was affiliated when I worked on the RL project to collect the information for the book.

There are two main components of the RL project. One is a student teacher exchange program jointly operated by the UW and one Chinese partner university. The second element is to initiate and expand a Canada-China sister school network during the period of time between 2013 and 2020. The purpose of building the cross-national school network is to foster educators' mutual understanding in order to nurture better teacher professional learning and student learning in each place. At the early stage of the RL project, schools from Shanghai and Ontario started building partnerships first; later, the network expanded and continues to expand to other cities where the partner universities are located. In particular, a sub-network involving more than a dozen schools has been established between Windsor, Canada and Chongqing, China. Another sub-network on a smaller scale has been formed between Toronto, Canada, and Anshan and Changchun in China. This emerging school network and the associated educators' communities between the two countries provide "laboratories" for educational research, as described figuratively by Dr. Connelly. In these "laboratories," researchers can investigate how knowledge and understanding in terms of education are shared and built among participants from the two countries and cultures.

The book focuses on one section of the growing Canada-China school network, which exists between Ontario and Shanghai. With the support from the ECNU and the UT, four schools in Shanghai were connected with four schools in Ontario to form four school partnerships. All eight schools are public funded. Among them, two pairs are elementary school partnerships while the other two are secondary school pairs. Once an intention of partnership between two schools was confirmed, researchers from the two universities would arrange and facilitate initial conversations between the schools. The principals, as well as vice principals in some cases, would first meet through videoconferences to exchange basic information about their schools and discuss possible directions about the partnership. Subsequently, some interested teachers on each side would be introduced to each other by their principals. The focus of the partnership would then shift to teacher-initiated exchanges and collaborative activities between the schools or classrooms and provided with researchers' ongoing facilitation.

The Researcher

Looking back, I often asked myself why I was drawn to this unique cross-cultural educational endeavour in the first place and why I continue to advocate the idea of reciprocal learning after my work in the project. I realized that my life and professional experiences played a role in the process and they shaped my views and beliefs about what I saw and what I did in the RL project. Therefore, I think learning about my experiences will be helpful for readers to understand my interpretation of teacher reciprocal learning between Ontario and Shanghai.

I grew up in China in the 1980s when the country started to adopt reforms and an opening-up policy to pursue modernization, and began to eagerly learn from developed countries about almost everything except for their political systems. After a humble early childhood in a poor suburban county of Shanghai, I then witnessed the tremendous economic growth of the city and the whole country during the past 30 years. The living standard of my family, like all the other people in Shanghai, was improved dramatically over this period of time. Perhaps, in my opinion, the success of China to date can mostly be attributed to the practice of "adopting foreign things to serve China" (洋为中用), which has reflected a very popular view on how China should learn from those economically and technologically advanced nations since the beginning of the 20th century. Living in this era and with this pervasive mentality, I personally identify with the need of learning from others in order to induce positive changes for the domestic society. I also believe that this applies to other countries as well. Indeed, in recent years, more and more people within China and around the world began to realize that China can contribute to the world and that other countries can learn from China's astonishing trajectory of development. Certainly, as a Chinese, I am proud of what my country has achieved in the past decades and hope its history, culture, and traditions can contribute to the course of human development at large.

I started my teaching career in a local middle school in Shanghai after I graduated from the Shanghai Normal University. While teaching, my interest in learning about western developed countries urged me to keep learning English and to pay attention to the world outside China. A few years later, I found a more desirable teaching position in a Chinese-English bilingual school, one of those established to meet the Shanghai

society's burgeoning demand for western style education. When the school offered the first International Baccalaureate (IB) Diploma Programme to Chinese nationalities in Shanghai, I secured a position in the IB division that required me to teach Mathematics in English using a more westernized approach. From then on, my career and professional learning experience fundamentally changed, as I entered a new international setting where local Chinese teachers and foreign teachers work and learn together. I embraced the learning opportunity in the IB school and thrived as a professional, so much so that I became the director of the IB division. As an administrator and teacher of the international school, I had many opportunities of learning from others through visiting schools overseas, exchanging ideas with IB colleagues around the world, and hosting visitors from many countries who were equally fascinated by our school and the Chinese culture. In retrospect, it is this work experience that formed my belief that educators from different countries and cultures can work together and learn from each other to better create learning environments for students and to help students gain higher achievement.

These experiences of working in an international school in Shanghai and living in the transforming Chinese society explain why I was so attracted by the idea of reciprocal learning through cross-cultural collaboration. I see myself as a professional in education dwelling in an in-between space, which connects my Chinese experience and perspective with knowledge and practice from all over the world. Naturally, I believe that it must be beneficial to connect schools between the two countries and to provide teachers on both sides with these kinds of cross-boundary professional learning opportunities. This belief gave me endless enthusiasm and energy when I had an opportunity to take part in the work of creating a school network to facilitate mutual learning between China, which is my home country, and Canada, which is the place where I studied and am working as an educator and researcher at present.

In addition, I found that the idea of reciprocal learning also resonates with one traditional Chinese tenet of teaching that I uphold—"When you teach others you teach yourself at the same time" ("教学相长"). That is to say, as teachers participate in cross-cultural collaboration and share their knowledge and skills with others, they will learn at the same time from each other. Interestingly, this old Chinese saying also echoes social learning theories that postulate that people learn as they participate in social practices. Teacher collaboration is surely one type of social

practice. Moreover, the teacher collaboration in the RL project takes place in an even larger cross-cultural community. Indeed, the school network and particularly the educators' communities created by the RL project constitute a learning space between the two different educational entities. This space facilitates educators' reciprocal learning through social interactions. Believing in social learning and cross-cultural teacher professional learning, I feel compelled to demonstrate the potential of the fledgling Canada-China school network. By writing this book, I hope to draw more attention and interest to the research and practice of cross-cultural reciprocal learning.

Toronto, Canada Xuefeng Huang

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Many professors, colleagues, and friends at the Ontario Institutes of Studies in Education (OISE) of the University of Toronto provided me with tremendous support and care when I worked and studied with them. Without them, I could not even imagine I would have fulfilled this project. Especially, I owe my deepest gratitude to Dr. Stephen Anderson, who is my academic supervisor at OISE. I also want to express my warmest gratitude to Dr. Ruth Hayhoe, who was not only on my doctoral thesis committee but also gave me advice when I worked on this book and other publications.

I am thankful to Dr. Julia Pan who used to be my colleague in the Reciprocal Learning project and later became my mentor and good friend. Many thanks to my colleague Yishin Khoo who shared much of her experience and resources to support my study. Dr. Ju Huang, who worked on the same project in the University of Windsor, offered me her warmest friendship and shared with me many insights from that part of the project.

Special thanks to my Canadian and Chinese participants. Without their great cooperation, this work would not be possible. I deeply appreciated their consistent commitment to the Reciprocal Learning Project and my work.

Contents

Abbreviations

BC	Basic Curriculum (Shanghai)
CP	Chinese Principal (Shanghai)
CT	Chinese Teacher (Shanghai)
CVP	Chinese Vice Principal (Shanghai)
EB	Education Bureau (Shanghai)
EC	Extended Curriculum (Shanghai)
ECNU	East China Normal University
EP	Canadian Principal (Ontario)
EQAO	Education Quality and Accountability Office (Ontario)
ET	Canadian Teacher (Ontario)
IC	Inquiry Curriculum (Shanghai)
INPLC	Internationally Networked Professional Learning Community
MEC	Municipal Education Commission (Shanghai)
MOE	Ministry of Education (Ontario)
NPLC	Networked Professional Learning Community
PLC	Professional Learning Community
PPK	Personal Practical Knowledge
RL	Reciprocal Learning
SB	School Board (Ontario)
UT	The University of Toronto
UW	The University of Windsor

CHAPTER 1

Introduction

Today, the world is characterized by economic and cultural globalization, advanced digital technology, and the convenience of international travel, conditions that enable the global communication of policies and practices that can transform people's social lives. Globalization has already become a reality within the larger historical trajectory of human development despite of its contentious impact on the world, including education. While educational policymakers are able to exchange ideas globally, at the micro level the characteristics of teaching and learning themselves are also changing, and teachers face new challenges for learning and development. For example, a teacher can easily find resources by searching on the Internet. He or she might even be able to help students connect with other students in a classroom in a foreign country for learning purposes. Research has also shown that education in many places in the world is no longer an entity confined within the sociocultural and political situations of separate nation states (Kenway & Bullen, 2005; Lingard & Rawolle, 2011; Moutsios, 2010; Steiner-Khamsi, 2004, 2012; Tarc, 2012). Particularly, the idea of learning across borders at either educational policy or practice level has been discussed for a long time in the comparative education literature (Biggs & Watkins, 2001; Hayhoe, 2008; King, 1973; Stevenson & Stigler 1992). Arguably, for teachers, the views and practices of other education systems and cultures can be useful learning sources to renew their own thinking, knowledge, and skills in the goal of improving education. In this globalized

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and interconnected world, there is no reason to confine the practice and research of teacher education and teacher professional learning to the boundaries of nation states.

This book reports a unique endeavor of Canadian and Chinese researchers and educators to build a cross-cultural school network in a hope of facilitating dialogue about school education and teacher education between the two countries. It focuses on a group of classroom teachers who were involved in a new cross-cultural school network between one province in Canada and one provincial municipality in China. These teachers from the two socially, culturally, and educationally distinct places spoke to each other, observed each other's practice, and learned from each other. One side of this school network is located in the western developed world in the province of Ontario in Canada, the other side is located in the municipality of Shanghai in China, which is in the eastern developing world but which has undergone enormous economic growth since the 1990s. Presumably, due to obvious geopolitical, cultural, and economic differences between the two places, their respective approaches to education can differ in many aspects, such as political environments, social norms, traditions, and values. On the side, education in both contexts is successful and reputable around the world as demonstrated, in part, by their excellent results in international tests. For instance, Shanghai took the first place in both 2009 and 2012 PISA (Program for International Student Assessment) tests, while Ontario has always been one of the top performers—on the PISA ranking chart. Citing their educational policies and outstanding achievement in education, the Organization for Economic Co-operation and Development (OECD) describes both Ontario and Shanghai as "successful reformers" (OECD, 2011). These two places continue to reform their education and endeavor to become future world leaders in terms of education (Fullan, 2013; Shanghai MEC, 2010). Given the disparities and commonalities on either side of the fledgling school network, there is great potential for educators in the two high profile education systems to learn from each other about policies, traditions, and practices through dialogue and collaboration.

1.1 Purpose of the Book

This book reports the early development of international teacher communities as a part of an emerging school network between China and Canada that evolves in the environment of the RL partnership project.

Although the research on professional learning communities (PLC) is not new, the knowledge about creating and sustaining teacher PLCs is limited and it is even more so in international settings (Grossman, And, & Woolworth, 2001; Stoll, Robertson, Butler-Kisber, Sklar, & Whittingham, 2007). This knowledge is obviously needed when schools and teachers around the world now have more opportunities and channels through which to connect. This book contributes to this area of knowledge by telling a story of the early development of internationally networked PLCs (INPLCs) in the context of Chinese and Canadian education. At the same time, this book also shows the effect of professional learning in intercultural teacher communities and shows the potential of the growing international school network. Lessons on difficulties and setbacks associated with the processes of building the school network and facilitating teacher learning are also revealed in a hope of future improvement for the school network in question.

This book is about the practice and conditions of in-service teacher education in a cross-cultural setting, as the teachers involved in the Canada-China school network are all practicing classroom teachers in public schools. Little research has been conducted in this new area. By contrast, much more has been done in relation to pre-service teachers' learning and growth in international settings. For instance, teachers' global competence as a requirement for preparing competent youth in this global age has been promoted as part of pre-service teacher education programs (Devlin-Foltz, 2010; Goodwin, 2010; Longview Foundation, 2008; Mansilla & Jackson, 2011; West, 2012). Internationalized teacher education has been providing student teachers with a range of intercultural experiences such as overseas teaching practica (Alfaro & Quezada, 2010; Cruickshank & Westbrook, 2013; Langford, 2013; Martin & Griffiths, 2012). In-service teachers, however, seem to be neglected in this area of learning and development research, although global competence and intercultural knowledge and skills are equally important to those who are already working in classrooms. Moreover, studies on pre-service teachers' intercultural learning were mainly conducted from the perspective of developed western countries, particularly the USA. Therefore, there is a need to learn from educators in other countries and cultures. In the context of Chinese and Canadian education, this work provides evidence of successfully connecting in-service teacher learning with teacher collaboration in professional communities in the international school network. Potential improvement in teaching and student learning as a result of this is also discussed.

This book also makes an effort to bring a comparative lens to the professional learning community research. A comparative lens seems especially relevant as the teacher communities under investigation occur internationally. The educators participating in the Canada-China school network come from two different countries and cultures. While they have much to learn from the differences and similarities between the two countries, researchers also have much to learn from the reactions and reflections of educators in one context when they were exposed to the education in the other context. A comparative analysis of Canadian and Chinese teachers' experiences and learning gains in these professional communities will provide insights into differences and similarities in teacher education in relation to different sociocultural and institutional situations. These insights can provide knowledge about how to better facilitate teacher learning in international professional communities. Moreover, the comparative analysis occurs as a result of Canadian and Chinese teachers' collaboration and conversation. In this way, this comparative study is unique, as it differs from many other comparative studies that only compare separate places and hence learn from results of the comparison. This unique feature of the study permits an investigation into how educators from the two countries experienced and perceived differently or similarly when they interacted in the same learning space between the two places. This comparative approach to teacher education is useful when international PLCs are of interest. Lastly, it is my hope that the results of this book can be applied to or tested by later school network or school partnership development in the RL project and in other international efforts. Ideally, the story told in this book will stimulate similar educational initiatives in different international settings and boost scholarly interest in relation to international school or teacher networks, in general, and cross-cultural professional learning, in particular.

1.2 Conceptual Framework and Theoretical Lens

1.2.1 From PLC to INPLC

The concept of a professional learning community (PLC) originally refers to an approach to school reform that is characterized by "shared mission, vision and values; collective inquiry; collaborative teams; an orientation toward action and a willingness to experiment; commitment

to continuous improvement; and a focus on results" (DuFour & Eaker, 1998, p. 45). Over the past three decades, the PLC as a means of school improvement through teacher learning and development has become a ubiquitous practice at all levels in many school systems. Theoretically, teacher learning in PLCs can be linked to the constructivist view of learning and social learning theories that emphasize learning through participation in practice in social settings (Jones, Gardner, Robertson, & Robert, 2013; Mireles, 2012). It is also informed by the research and theories of communities of practice (Lave, 1996; Lave & Wenger, 1991; Wenger, 1998). The social learning of professionals can be theorized as participation in communities of practice. According to Wenger (1998), learning and knowing as social participation consists of four components: community, practice, meaning, and identity. Specifically, members of professional communities learn practices through sharing artifacts of their work and through negotiating the meaning of their work. At the same time, they reify their learning and knowledge by creating new cultural artifacts that, in turn, enable the members of professional communities to perform better actions and further negotiate meaning. Learning in professional communities is also a process of negotiation of identity intertwined with the negotiation of knowledge and meaning, since participation and practice in professional communities is a complex process that combines emotions, behaviors, relationships, and identity transformation of members (Wenger, 1998). Obviously, these insights on professionals' social learning can be applied to the investigation into teacher PLCs.

The forms of PLC and the scope of its application have changed over the past decades. It seems that the concept and practice of PLC was first introduced and promoted in the USA in the form of whole-school PLCs or subject departments (McLaughlin & Talbert, 1993). Later, PLC became an internationally shared concept and common practice for school improvement, in general, and for teacher in-service professional learning, in particular. Now the practice of and research on PLC can be found in many other places around the world, for example, in China (Sargent & Hannum, 2009; Wong, 2010). With the growing popularity of PLCs in schools, the form of PLC has evolved too. PLCs are no longer confined to the boundaries of a single school (Cranston, 2009; Lee, Zhang, & Yin, 2011; McNicholl, Childs, & Burn, 2013) but also found in cross-school settings (Hargreaves et al., 2013; Jackson & Temperley, 2007; Moore & Kelly, 2009; Veugelers, 2005). They can

appear as a subject department, a whole school, a regional professional organization, or even a national or international network, as long as they facilitate school improvement or teacher development. Given these changes, researchers have now come to understand a teacher PLC as a group of teachers who work together in various settings for the purpose of improving teaching and student learning, sharing, and examining their practice and knowledge in an ongoing, organized, and collaborative way (King & Newmann, 2001; Mitchell & Sackney, 2001; Sargent & Hannum, 2009; Stoll, Bolam, McMahon, Wallace, & Thomas, 2006; Toole & Louis, 2002).

Networked professional learning community, as a special type of PLC, is also studied by researchers. A networked learning community in school education can be defined as "groups of schools working together in intentional ways to enhance the quality of professional learning and to strengthen capacity for continuous improvement in the service of enhanced student learning" (Katz, Earl, & Jaafar, 2009, p. 9). Obviously, as a subset of PLC, networked PLCs of teachers share the same goal as that of school-based PLCs. Both aim for teacher and student learning and school improvement. Networked PLCs can also be regarded as natural extensions of school-based PLCs. Bolam, McMahon, Stoll, Thomas, and Wallace (2005) point out that openness, networks, and partnerships are important characteristics of an effective PLC, and therefore they argue that schools need external support, networking, and partnerships in order to develop, sustain, and extend school-based PLCs. Today, teachers and schools in most places around the world are more likely to connect with others far away from home given the convenience of communication and travel. Therefore, learning in networked professional learning communities has become more relevant to schools and educators than ever. It can be argued that in this globalized world, it is neither possible nor wise for a school to operate alone without looking at other schools and external resources in the wider education system and in the interconnected and more accessible world.

A more recent development of networked PLCs shows that they can also connect schools beyond national borders to form internationally networked professional learning communities (INPLCs). In the past decade or so, some fruitful efforts have been made to bring school leaders' and teachers' professional learning into the international arena. For example, Stoll et al. (2007) report the development and practice of international networks of school leaders and examine

the impact of internationally networked learning on schools and the education system. Three international networks were promoted by an English Local Authority (school district). School leaders from England, Australia, New Zealand, and Canada participated in international placements by visiting each other for learning purposes. Their study shows that international leadership learning experience helps school leaders to be aware of the global educational development and to be open-minded about how to improve teaching and learning at home. Moreover, Stoll et al. (2007) study provides evidence that school leaders' learning experience not only deepens their individual learning and enhances the work of school-based PLCs, but also spreads to influence the work at the school district level. Focusing on teachers, Veugelers (2005) draws on the work of International Networks for Democratic Education (INDE), and other relevant research conducted in the Netherlands European experiences, to show that teacher learning becomes horizontal and mutual in international networks and that these networks help teachers become members of a larger community of practice with common educational concerns.

Perhaps, the largest number of studies related to INPLC were conducted in the UK. A series of studies on the process of international school partnerships and their influence on participating schools, leaders, teachers, and students were documented. This series of studies is especially relevant to the work underlying this book, as the practice of international school partnerships is close to, if not the same as, the cross-cultural school network in the context of the RL project. From 2007 to 2010, the global children's charity Plan International launched a School Linking Programme to support the development of partnerships between schools in the UK, Africa, and China (the Chinese information is not available). Based on both survey data and multiple case studies, the first-year report of the study associated with the Programme found that there are perceived benefits of the Programme on both teacher development and student learning (Edge et al., 2008). As far as teachers are concerned, the report shows that they developed a more positive attitude regarding global issues and gained access to a wider range of teaching strategies. In turn, these changes gave rise to a higher level of teacher expertise in the school. Another similar study confirms the impact of international school partnerships on teachers in multiple areas, including knowledge about other education systems, pedagogic changes as a result of mutual learning and reflecting on practice, skills related

to school work, global awareness, and cross-cultural knowledge (Edge, Frayman, & Lawrie, 2009). A later study conducted by Edge, Higham, and Frayman (2010) further asserts that connecting classrooms through international school partnerships can create an array of opportunities for teachers' professional learning and growth. Collaborative activities such as teachers' in-person exchanges, sharing of teaching strategies, observation of teaching, and joint special theme days or events related to the partnership, are all useful venues for teachers to learn from each other (Edge et al., 2009).

None of these reviewed studies on international school networks or international school partnerships use the perspective of the teacher professional learning community to examine teachers' learning and changes in these communities. From my point of view, however, these teacher communities and their work and professional learning can be further developed and explored using PLC research and theories. Clearly, these schools in the UK and Africa formed groups of schools that worked together for the purpose of boosting the quality of teacher professional learning and student learning. The activities that teachers did in these international communities are no different, in principle than those activities in networked PLCs within a country. The only difference is the changed context of sharing and collaboration, which involves more than one education system and culture. Therefore, it is fair to say that these international school networks created internationally networked professional learning communities (INPLCs) for teachers.

Other than these aforementioned studies that are related to INPLC, I could not locate others that describe the experiences of an international teacher or school networks and address the influence on or benefit for teachers. There is surely an urgent need to build more knowledge about teacher learning in INPLCs. The paucity of evidence in this regard is also noted when Edge and Khamsi (2012) wrote about the influence of international school partnerships on students' global education. Despite the scarcity of research, however, there is no doubt that INPLCs can produce positive effects and hence hold great potential as to student learning, teacher development, and school improvement. I believe that we will be seeing more and more of these kinds of international initiatives. As I argue earlier, this is an era when the practice of and research into teacher professional learning carries into the international space beyond and between the boundaries of nation-states.

1.2.2 Evidence of Learning in PLCs

PLC has been discussed in the educational literature for about three decades, networked PLC in the forms of school networks or teacher networks has existed for about two decades, while INPLCs have appeared for one decade or so. It has been shown that, PLCs, be it networked or school-based, share many common characteristics (Bolam et al., 2005; Clausen, Aquino & Wideman, 2009) and both assemble teachers' knowledge and skills in order to promote learning and practice (Hargreaves, 2003; Toole & Louis, 2002). In addition, networked PLCs seem to have one unique property, that is, the great potential of sharing knowledge and innovation across systems and in an even larger scope for the purpose of improving teacher practice and student learning (Bolam et al., 2005; Earl, Katz, Elgie, Jaafar, & Foster, 2006; Katz & Earl, 2010; Katz et al., 2008). Specifically, it has been shown that school networks can help teachers to understand and implement educational policies (Veugelers & Zijlstra, 1995), increase participants' content and pedagogical knowledge but also enable them to learn in new ways (Morris, Chrispeels & Burke, 2003), bring about teachers' innovations and changes for better student achievement (Earl et al., 2006; Katz et al., 2009), and foster the development of school-based PLCs (Earl et al., 2006; Katz et al., 2009) by linking school-based PLCs at different developmental levels and creating new PLCs at the network level that enhance knowledge sharing and creation (Katz et al., 2008).

The existing evidence of learning in networked PLCs seems promising; however, it is still limited, especially regarding INPLCs. Even if we confine the discussion to networked PLCs within nations, the promise of learning does not seem to be easy to achieve and the evidence regarding the influence of INPLCs is hard to prove. For instance, Little (2005) contends that the effect of the participation in networks on school improvement and education reforms remains unclear, although, to some extent, research shows that school networks may improve teacher practice and school performance, given accessible external resources. Chapman and Hadfield (2010) reach a similar conclusion that networks do impact schools, teachers, and hence, students, through collaborative activities, however, the causality between these activities and their impact is hard to establish due to the complexity of networks. Mireles's (2012) survey study on teachers' experience in a networked PLC in the USA even indicates that identified learning activities in school networks do not

correlate to the change of teaching practice, although the study suggests that innovative teachers do value collaboration and external expertise. Wideman, Owston, and Sinitskaya's (2007) view seems to be more optimistic on this issue and to have greater foresight. They contend that the minimal impact on teachers' practice is usual and acceptable because building a learning community that can transform practice takes time. In summary, it is fair to say that school networks and networked PLCs of teachers hold the potential to enhance teacher learning and practice and, in turn, improve school work and student learning; however, achieving and verifying this promising goal is not an easy task for schools and for researchers.

Informed by the literature on teacher learning and development, the work reported in this book focuses on four areas to identify evidence of teacher learning in the context of INPLCs: teacher knowledge, teacher practice, motivation to participate in cross-cultural learning opportunities, and cosmopolitan professional identity. In the Canada-China school network, all the collaborations and learning activities begin with dialogues between the two sides of the school network in order to spontaneously and reflectively relate to teacher knowledge, such as scientific, technical, and personal practical knowledge. While acknowledging possible sharing of conceptual and technical knowledge by teachers in the two countries when they interact, I pay more attention to a more personalized approach to teacher knowledge that underlies the RL project. Connelly and Clandinin define that personal practical knowledge (PPK) as "for any one teacher, a particular way of reconstructing the past and the intentions of the future to deal with the exigencies of a present situation" (1988, p. 25). Due to the particular way of building the Canada-China school network, PPK is highly applicable since it is both sharable and changeable (Connelly & Clandinin, 1988). In the reciprocal learning space, the ensuing actions of educators, after their initial exchanges and their encounters with the environment within the school and the INPLCs, might result in reflecting on and learning new knowledge, modification of professional identity, change of motivation, and, perhaps, change in practice. It is anticipated that talks will be followed by actions either in one school in one country or jointly in more than one school in both countries. The knowledge shared and created, the teacher identity shaped by interactions, and teachers' motivation are, thereby, reflected and consolidated in real actions and educational practices that are influenced by the activities in the reciprocal learning space. In the particular

context of the Canada-China school network, educators' professional identities might be reshaped toward a cosmopolitan identity that enables them to access knowledge and skills and, at the same time, make a contribution in a wider global educational arena.

1.2.3 How to Build INPLCs That Work

In addition to evidence of teacher learning in professional communities, the problem of how to build and develop INPLCs is also important. Knowledge about the organization of school-based PLCs can complement the understanding of how to develop school networks since PLCs, be it within schools or cross-schools, share many fundamental characteristics such as the facilitation of teacher learning and the purpose of school improvement. Some common practices with respect to the organization of school-based PLCs are discussed by researchers: providing structural resources such as time and space for learning; offering supportive leadership, coordination, and other human resources; creating a range of professional learning opportunities for teachers; and interacting with external resources and support, including networks and partnerships (Bolam et al., 2005; Louis, Marks, & Kruse, 1996; Morrissey, 2000; Printy, 2008; Rosenholtz, 1989). Another organizational factor highlighted by researchers is the role of community facilitators which is important to PLCs as they can not only maintain a healthy learning culture in the communities (McLaughlin & Talbert, 2006) but also determine the focus of teachers' learning and actions (Morrissey, 2000). In addition, sociocultural factors are also found to be important to the creation and operation of PLCs, including individual teachers' orientations to learning and change (Bolam et al., 2005; Opfer & Pedder, 2011), team culture and group dynamics (Grossman et al., 2001; Mitchell & Sackney, 2001; Morrissey, 2000; Opfer, Pedder, & Lavicza, 2011), school history, size, grade levels, location, and student demographics (Bolam et al., 2005; Rosenholtz, 1989), and external factors such as regional professional learning infrastructure, policy influences, and local community (Bolam et al., 2005). These organizational and sociocultural factors of school-based PLCs are helpful in considering how to build networked PLCs.

The research that specifically looks into conditions for building and sustaining networked PLCs is scant. There are even less knowledge and evidence related to the early development of networked PLCs. Most

studies on school-based and networked teacher communities investigate existing communities instead of the process of their creation (Grossman et al., 2001) although the existing knowledge provides some insights into how networked PLCs develop and operate. There is a pressing need for more studies on the processes, conditions, and difficulties in creating networked PLCs, particularly those in international settings. A survey of available evidence and a consultation with some school-based PLC studies suggest that the following conditions in schools and in networks be considered when developing and operating school networks: formal and informal leadership; purposes of learning; sociocultural factors within and around participating schools; teachers' characteristics and motivations; organizational features of communities; a healthy learning culture within professional communities; and school administration support (see Bolam et al., 2005; Day, Hadfield, & Kellow, 2002; Katz & Earl, 2010; Louis et al., 1996; Mak & Pun, 2015; McLaughlin & Talbert, 2006; Morris et al., 2003; Morrissey, 2000; Opfer et al., 2011; Printy, 2008; Rosenholtz, 1989). In addition, the literature also reveals that the process of developing a PLC is often very time-consuming and full of conflicts and misunderstanding, and that building and sustaining PLCs is a difficult task that requires sustainable commitment from all parties and sometimes even challenges the ways of thinking about teaching, learning, and leading (Darling-Hammond & Richardson, 2009; Feger & Arruda, 2008; Mak & Pun, 2015; Mitchell & Sackney, 2001; Stoll et al., 2006).

There is only a limited number of studies that investigate INPLCs. All the available studies touched on the conditions and difficulties of building and sustaining international cross-cultural professional communities. Edge et al. (2009) summarize various challenges in developing successful and sustainable international school partnerships: difficulties in communication with the partner school; lack of funding to support in-person exchanges and teacher release time; the demands of commitment and time input; the need for strong and sustainably supportive leadership; language difference; and issues resulting from physical distance between partners. It is also suggested that the long journey of building international school networks should begin with difficult and crucially valuable early developmental activities including pairing partners, initial exchanges (Edge et al., 2009), and early collaborative activities for the purpose of building a common educational philosophy and developing structures and leadership (Veugelers, 2005). In the same vein, Stoll et al. (2007) also stress the difficulties of developing and sustaining international

PLCs for school leaders. However, their study also identifies a successful example of an international learning community between England and Canada. This successful INPLC for school leaders features a clear focus, defined learning modes, an international team of facilitators, as well as a series of learning activities, including visits, email exchanges, videoconferences, written reflections, meetings, and a closing symposium. Thus, despite obvious difficulties and demanding conditions, it is still possible to build INPLCs of educators given some appropriate organizational conditions are put in place. For instance, Stoll et al. (2007) particularly point out two important factors: one, the design of the learning mode and theme, such as two-way dialogue, school visits, focused group meeting, and leadership coaching; and two, the role of change agents, such as idea champions, external experts, external facilitators, or external critical friends.

Edge et al. (2008) highlight the importance of building communication infrastructure in order to facilitate and sustain school partnerships. They suggest the need to consider the following five aspects of communication between school partners: frequency of communication; the need of mediation for communication; alternative methods of communication; resourcing for communication; and opportunities for face-to-face communication and visits. Based on similar studies, Edge et al. (2009) continue to suggest other factors conducive to building international school partnerships, including personal connections, whole-school involvement in the decision-making regarding partnership formation, clear purpose, supportive leadership, and the assistance of supportive external organizations. Interestingly, they find that differences and similarities between schools do not seem to impact partnership formation and development. In terms of factors contributing to the sustainability of school partnerships, Edge et al. (2009) recommend paying attention to the following aspects: financial support; nonfinancial support from school districts; staff training on partnership development; strong and supportive leadership; strong staff support; students and parents support; strong connection to the school goal and priorities; persistence in pursuing partnership objectives; and a variety of communication methods. Perhaps not all of these conditions for building and sustaining international school partnerships apply to the INPLCs in the Canada-China sister school network, as the context of the teacher communities in this study is obviously different. Nonetheless, the existing knowledge on building and sustaining networked PLCs and INPLCs gathered from

these reviewed studies provides a starting point and directions with which I can systematically investigate how the Canada-China school network emerged and evolved.

1.2.4 INPLC as Reciprocal Learning Space

INPLCs in the Canada-China school network constitute a reciprocal learning space between the school education of the two countries. This statement can be explained from two theoretical and methodological aspects. First, reciprocity is the guiding concept of the RL project and is the key idea built into the development of the Canada-China sister school network in question. Xu and Connelly (2015, 2017) conceptualize the idea of reciprocal learning as having two essential elements: one is cross-cultural collaboration and the other is the learning for mutual benefits. The two directors of the RL project believe that this type of reciprocal learning can be achieved between schools, and more generally speaking, between education in Canada and China as respective educators collaborate. Reciprocal learning needs to go beyond the simple comparison between countries in terms of practice, values, culture, achievements, and pedagogy; it should be thought of and practiced as a type of learning in a collaborative work situation (Xu & Connelly, 2015, 2017). In the context of the RL project, the goal and practice of reciprocal learning focus on a different angle than the prevalent comparative education research which usually operates at a higher academic and policy level. Reciprocal learning, in this case, means not only a collaborative process that involves practitioners on both sides, but also the expected two-way learning outcomes for these participating educators. Despite different cultures, histories, and experiences, the two participating sides are expected to express and reshape their knowledge and practice through the process of interaction and two-way learning.

The idea of reciprocal learning between education systems as conceptualized by Xu and Connelly is consistent with the emphasis on mutual respect and mutual learning in the teacher PLC literature. Learning that takes place in teachers' PLCs is meant to be reciprocal. Hargreaves (2003) states that reciprocal learning in teacher communities implies openness and shared work and that it is built upon a sense of professional trust, namely, trusting other professionals who may not be familiar. He further explains that professional trust is essential for teachers to

teach in the rapidly changing knowledge society so that they are willing to experiment and adopt new ideas that are learned from different and distant others. Little (2005) also emphasizes that learning relationships in school networks rely on the foundation of reciprocity, meaning that "participants both give and take" (p. 279). In international school networks with common educational concerns, Veugelers (2005) found that teacher learning is more horizontal and mutual. Studies on school partnerships among the UK, Africa, and Asia also address the importance of two-way learning and provide positive evidence of mutuality in the collaborations of educators from the two sides (Edge et al., 2009). Indeed, respectful culture, trustful relationship, and mutual learning are important foundations to develop and sustain teacher learning in networked PLCs. This can be applied to cross-cultural, cross-system PLCs too. All in all, reciprocity in INPLCs is not just theoretical; rather, it holds the possibility of evoking real collaborative actions and learning between teachers, schools, and education systems.

Second, according to spatial theories employed in educational research, INPLCs in the Canada-China school network can be viewed as a topological space for reciprocal learning between two geographical places. Spatiality of globalization has influenced current educational research including sociology of education (Robertson, 2010) and educational policy (e.g., Carney, 2009; Gulson, 2007). It is believed that theorization of spatiality can help better understand the complexity of globalization and practices in this networked world (Amin, 2002). The main rationale for the application of spatiality of globalization to the comparative and international education literature is that educational policies and practices in geographically distant places around the world are not only influenced by factors within national borders, they are also facilitated and sometimes pushed by networks and forces across nation states. These international networks, network actors, and their links and interactions constitute topological spaces, as opposed to geographical places (Lewis, Sellar, & Lingard, 2016; Amin, 2002). The employment of a spatial lens highlights relationships between individuals, groups, and organizations that cannot be measured by their physical distances. Thus, the spatial lens can better reflect and help the understanding of complex educational policy and practice changes in this more and more interconnected world; and it can help break through the traditional approach of using separate nation-states as units of analysis in the comparative and international education literature.

Scholars in comparative and international education research have paid attention to topological spaces such as international "policyscapes" (Carney, 2009), policymaker networks (Larsen & Beech, 2014), policy "heterarchies" (Lewis et al., 2016; Ball & Junemann, 2012), and "global policy field" (Lingard & Rawolle, 2011). This new comparative research trend heeds the relational property of space, shifting the focus of analysis from traditional geographic entities to the connections and interactions between schools and educators from different education systems and sociocultural realities (Carney, 2009; Larsen & Beech, 2014). Researchers can investigate similarities, differences, mutual benefits, as well as contradictions and inconsistencies associated with these connections and interactions between the involved education systems, schools, or educators (Carney, 2009). This approach to comparative and international research differs from the traditional type that mainly focuses on how and what one country learns from the other(s) without addressing the process and impact of interactions between the education systems of two or more countries (Lewis et al., 2016). It enables an inquiry into learning opportunities in relational and generative spaces that were not reachable before; it also enables an investigation into actors' actions and changes that are influenced by factors at a distance.

In the context of the RL project, Connelly and Xu (2015) also argue that reciprocal learning between the two countries and education systems should go beyond mere comparison of aspects of education since, in the project, participating educators from different cultures and experiences "come together over common issues and learnings and search for ways to move forward." From a teacher community point of view, these participating educators, as well as their schools, formed INPLCs with the facilitation and mediation provided by the project. It is these INPLCs which together constitute the reciprocal learning space between the two countries and education systems. More specifically, my attention is drawn to teachers' collaborative activities in the reciprocal learning space. Unlike those higher-level policy borrowing and lending international networks, the space in this study enables classroom teachers to be connected through collaborative activities that are close to their practice. What flows in the space is practitioners' knowledge while educators participate in dialogues, exchanges of teaching materials, and joint educational activities. Moreover, educators' reflections shared with the researcher also link back to these activities occurring in the common, connected reciprocal learning space between the two distant places.

Therefore, methodologically speaking, these collaborative activities constitute the actual space since they protrude from geographically remote places while still linking to the local places. It is these accounts of activities, connections, and interactions associated with these activities, and teachers' actions and reflections prompted by the reciprocal learning space, that enable the researcher to investigate and compare.

This study adopts this new way of comparative education research characterized by both spatiality and reciprocity. While existing research associated with spatiality examines connections and interactions of people and organizations mainly concerning the government or policy level, this study employed this new lens of space to understand practitioners' connections and interactions in the reciprocal learning space between two countries. This combination of spatiality and reciprocity guided the data collection, data analysis, and, finally, the way of reporting the results of the study. Consistent with the methodological considerations, the data were collected in the space as collaborative activities happened between the two sides. Also, interview data from both sides were collected in order to capture participants' experiences and views about what happened in the space. The data analysis of the study also reflects the relational property of space. The information collected from the same school partners, same collaborative activities, and interacting teachers in the two places was grouped and juxtaposed in the process of analysis. This kind of comparison not only reveals the interactions between teachers but also highlights differences and similarities. The results of the analysis are presented in a way that juxtaposes different or similar experiences and reactions from the two sides. In the process, reciprocity of learning is paid close attention to the fundamental belief that mutual learning can occur when educators from different systems and cultures collaborate.

In summary, the existence and development of INPLCs as a reciprocal learning space between Chinese and Canadian schools and educators provide an ideal research venue in which the researcher can explore the relatively new phenomenon of teacher cross-cultural reciprocal professional learning. This exploration is informed by a new lens of comparative education research featuring the thinking of relational and generative characteristics of space in the globalized world. The reciprocal learning space between schools in Ontario (Canada) and Shanghai (China) not only facilitates teachers' collaboration and learning but also enables research. From the RL project point of view, the concept of learning is quite inclusive. Reciprocal learning facilitated by the project can

be in-service teachers' and principals' professional learning; it can also extend to students' mutual learning. It expects the two systems to learn from each other in a general sense. No matter whose and what forms of reciprocal learning are under investigation, the assumption is that the learning should have mutual effects and should be associated with ongoing collaboration between participants in the two countries. For this particular book, the focus is teachers' mutual professional learning through their engagement in international collaborations in the Canada-China sister school network.

1.3 How Is It Researched

The study underlying the book is both exploratory and comparative. It is exploratory in that it investigated the relative new phenomenon of international educators' learning communities. Little literature and few theories are available to inform the study about the process, content, and impact of internationally networked professional learning communities (INPLCs). Thus, I positioned myself as an explorer in a nearly unknown territory and continuously gathered information in the field over a relatively long period of time (approximately two years). In so doing, my enhanced understanding of the topic eventually facilitated the analysis and interpretation of the collected data. The study was also informed by comparative education methods. Especially, it is informed by spatial theories and comparative education research applying spatiality considerations against the backdrop of globalization. I have elaborated this in the conceptual and theoretical section above. In line with this exploratory and comparative research design, a series of qualitative data, including interviews with teachers and principals in both countries and records of interactions between the two groups of educators were collected and analyzed. Between the two methodological considerations, however, the main concern of this study is to explore how these Canada-China teacher professional communities work. The comparison between participants' experiences and views enabled by the reciprocal learning space seems integral to the cross-national, cross-cultural research setting. The processes of data collection and analysis that reflect the two methodological considerations will be explained in the following.

This book intends to show the processes, content, and effects of teacher learning in international professional communities between Chinese and Canadian schools. It also discusses organizational conditions that support

and sustain this reciprocal learning space in its development. To support these inquiries, two stages of data collection were conducted. The first part of the data was collected for the research needs of the large RL project and subsequently used to write this book. Over the first two project years, I and other researchers of the RL project collected qualitative data that documented the process of developing each school partnership and collaborative activities between schools and teachers. I and another researcher took the main responsibility of tracking and documenting the development of each school partnership. I followed all the communication and activities between the two secondary school pairs in the first two years and onwards while my colleague followed the two elementary school pairs in the same manner. The main responsibilities of researchers of the RL project in this stage were to support and maintain communication and collaboration between each school pair and to coordinate and facilitate videoconferences between educators. As teachers and principals from the two sides regularly participated in Skype meetings, collaborative teaching and learning activities, email correspondences, and exchanges of teaching and learning material, researchers documented all the processes, collected all the artifacts, including items, such as meeting minutes and exchanged materials, and reported all to the project directors.

Both Canadian and Chinese schools and educators' data were included in this research with the intention to capture reciprocity and to compare. Eight schools in the two countries formed four pairs of sister schools between Ontario, Canada, and Shanghai, China. Four public schools in Ontario were involved in the RL project and the associated Canada-China sister school network in the first two years, with two being elementary schools and the other two secondary schools. While the four Canadian schools belong to one large Ontario public school board, the locations and student demographics are quite different. The secondary school in School Pair 1 is located in an affluent community where the residents are mostly Caucasian descendants; the secondary school in School Pair 2 lies in a culturally diverse community with most of its students from Asia, Africa, and the Middle East. Many of these students' families are poor. In terms of student achievement, the secondary school in Pair 1 seems much stronger than the one in Pair 2 according to recent EQAO results (the EQAO, Education Quality Assurance Organization, is an independent testing agency monitoring Ontario's students' achievement). In School Pair 3, the Canadian elementary school is located adjacent to the China Town in the downtown of the

city and understandably a high proportion of its students are Chinese descendants. This community is worn down and economically in poor condition. By contrast, the elementary school in Pair 4 lies in a newly developed suburban area where many large homes were built. The majority of residents in this community are Chinese immigrants, some of them recent immigrants. Academically, according to recent EQAO results, the elementary school in Pair 4 is a well-performing school and much stronger than the one in Pair 3.

On the Chinese side, there are also four partnering schools involved, including two secondary and two elementary schools. All of them are public schools with three of them under the jurisdiction of one education bureau and the other secondary school under another education bureau, which can be regarded as on an equivalent level as the school boards in Ontario. The Chinese secondary school in Pair 1 is an ordinary community high school, as opposed to the category of Experimental Model High Schools, to which the secondary school in Pair 2 proudly belongs. The secondary school in Pair 1 is located in a nonaffluent urban area and most of its students are recruited from this community. Academically, the school is in the lowest tier of all Shanghai high schools and many students in the school struggle to get into universities. By contrast, the secondary school in Pair 2 is ranked first in the suburban district in the south of Shanghai. As one of only two Experimental Model High Schools in the district, it enjoys the privilege of recruiting students from across the city although most of its students still come from within the district. The student achievement of this school is outstanding compared to many other Shanghai secondary schools. In Pair 3, the Chinese elementary school is located in a satellite town in Shanghai, which used to be a heavy industrial center of the city in the last century but now has lost its status due to the restructuring of Shanghai's economy. Most people who are living in the community around the school either have not been able to find better opportunities or are migrants from other underdeveloped parts of China. By contrast, the community where the Chinese elementary school in Pair 4 lies is a new, affluent residential area with high and increasing real estate prices. Most parents who send their children to this school are well-educated and well-off financially.

In these four sister school pairs, Ontario and Shanghai teachers and principals have been engaged in collaborative activities since late 2013 and continued their collaboration in these INPLCs as of the time when I collected the data for this book. Two teacher communities (Pair 1

and Pair 2) consist of teachers from secondary schools in the two places while the other two teacher communities (Pair 3 and Pair 4) are formed by elementary school teacher participants. Alongside other researchers of the RL project, I facilitated teachers' communication and activities in these INPLCs. The principals of each school in the partnerships are also involved in one way or another. Several of these principals have directly engaged in collaborative activities as educators themselves while others take a supportive role in the background. Thirty-nine active participants in total, including both teachers and principals from the two countries, have been involved in these INPLCs since September 2013 or subsequently, depending on the progress of each partnership. Those who were briefly involved (e.g., taking part in only one videoconference) or who were not active participants at the time of data collection were not included in this study. In School Pair 1, there are three teachers and two principals; in Pair 2, there are thirteen teachers participating in different subject areas alongside one Canadian principal, one Chinese principal, and two Chinese vice principals; in Pair 3, there are seven teachers and two principals; and in Pair 4, there are six teachers and two principals. Since the total number of participants is not large, all active teacher and principal participants in these INPLCs between Ontario and Shanghai schools are included in the analysis. Among the thirty-nine participants, there are eighteen Shanghai teachers (CT), four Shanghai Principals (CP), three Shanghai Vice Principals (CVP), ten Ontario teachers (ET), and four Ontario Principals (EP).

The data also include meeting records related to these INPLCs. There are two types of meetings: Project Meetings and Sister School Meetings. Project Meetings were among the research team and participants from schools in one country. This type of meetings mainly served the purposes of partnership planning and delivering information from one school to the other. Some important correspondence prior to or after these Project Meetings were also documented. Sister School Meetings refer to the videoconferences or, in some cases, phone conferences between schools during which participants in the two countries talked to each other directly. During Sister School Meetings teachers and principals exchanged information about their schools and education and sometimes planned and summarized ongoing collaborative activities. All the Project and Sister School Meetings were audiotaped, transcribed, and translated when necessary into English by researchers of the RL project. Researchers also wrote observational and reflective field notes regarding these meetings, as well as collaborative activities.

These multiple techniques of data collection helped this researcher to gather as much information as possible in order to better understand the processes, activities, and content in the reciprocal learning space. For instance, these field notes greatly enhanced my understanding of participants, participating schools, and the development of the school partnerships and collaborative activities, although this part of the information was used as supplementary data for this book and were consulted only when needed. Moreover, this book only refers to a segment of the data of the RL project during the first two project years (from September 2013 to October 2015) whereas the RL project is planned to last until 2020. Also, the Canada-China school network takes place in other cities in the two countries, data from which are not reported in this book.

The second stage of data collection, which was particularly designed for this research, involved interviews with all the thirty-nine active teacher and principal participants in the two countries. I used standardized open-ended interviews in order to effectively explore in-depth information; and an interview protocol that I prepared in advance was used across all participants for the purpose of consistency. The interview questions were designed by referring to a broader interview guideline of the RL project and informed by an interview protocol that was used by the two principal investigators of the RL project. The interview protocol for participating principals is a slightly modified version of that for teachers due to principals' different leadership roles in the process of relationship building and teacher learning. The interviews focus on questions such as what educators perceive themselves and their partners from a different country can learn from each other, what impact they perceive from the experience on their knowledge and practice, and what factors support or inhibit the development of and their learning in international teacher communities.

The process of interviewing all participants in the Canada-China sister school partnership started on May 22, 2015 and was completed on October 15, 2015. All the Shanghai interviews were conducted in May and June, 2015 while all the Ontario interviews were conducted between the end of August and October, 2015. All the Shanghai interviews were conducted at the schools where the participants were working at that time. The locations of interviews were either offices or conference rooms in those schools. Interview rooms were usually chosen by the teachers or the principals. Most of the Ontario interviews were also conducted at participants' schools, either in offices, classrooms, or conference rooms in these schools. Three Ontario interviews were conducted in locations

outside the schools due to participants' special requests. The majority of the interviews were individual interviews; however, a few of them were group interviews of two teachers because of participants' special requests. This situation occurred because these pairs of teachers usually participated in all the sister school activities together and they wished to share their experience together as well. Most interviews lasted about 40 minutes in length. All the interviews with Chinese teachers were conducted in Mandarin Chinese while all the interviews with Canadian participants were done in English. All the interviews were audiotaped and were transcribed verbatim and translated into English in the case of the Chinese interviews.

The analysis of the data was conducted by the researcher, and I employed a general inductive approach that seeks to summarize the raw data collected from the participant and identify concepts and themes through interpretations made from the data. The main data analysis focused on teachers' and principals' interview data since the interview transcripts are the primary data of the study. The other sources of data, including some Project Meetings, Project Communication, and Sister School Meetings were consulted only when I needed supplementary information. I created one Word document for each participant's interview transcript and a separate document for each meeting record. The data analysis was assisted by a computer program Atlas.ti 7, which helped me to organize these data documents and subsequently assisted me to manage codes, themes, and the relationships among them. The analysis process started with an initial code list which was informed by the literature and by some initial insights that were gleaned in the process of data collection. The coding and subsequent analysis processes sought to identify commonalities, differences, and relationships with regard to what happened in these INPLCs and what teachers' reactions and experiences were. Ultimately, the findings of this study led to a model for the teachers' reciprocal learning space using the Canada-China sister school network as a case in point.

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CHAPTER 2

Constructing the Reciprocal Learning Space in Between

Ontario and Shanghai are ten thousand kilometers away, one is in North America and the other is in East Asia. Presumably, there are many differences between the two places and the two education systems. There also might be similarities in education since knowledge and practice travel from place to place in this interconnected world. Moreover, both Shanghai and Ontario education are highly recognized around the world. These differences and similarities not only influence how teachers in the two places received and reacted to the INPLCs between the two places, but also provide a basis to compare teachers' experiences. Therefore, to understand how two groups of educators from the two distinct places interact and learn in the reciprocal learning space in between, it is necessary to know the two places and learn about their people, history, culture, and education. Furthermore, since these Ontario and Shanghai teachers also engaged in collaborative professional activities that tied in with their current school work, it is important to juxtapose the reality of teacher professional learning in the two education systems against the background of education internationalization. This comparison will be helpful to understand these teachers' different or common perceptions of the international collaborative learning opportunity.

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2.1 The Place of Shanghai and Its Education

The English word Shanghai represents the Chinese word "上海," which means "upon the sea" in Chinese. Shanghai is also called "Hu" ("沪") as the abbreviation or sometimes "Shen" ("申") as its nickname. The origin of the name Shanghai has different versions. The most recognized one says that the name Shanghai came from a book in the Yuan Dynasty (1271–1386), which describes the feature of the area as being "located upon the sea" ("其地居海上之洋") (Wang, 2015). The literary meaning of the name Shanghai vividly reflects its geographic location. Shanghai is located at the east coastal line of China, bordering two provinces, Jiangsu and Zhejiang, to the north, south, and west. The east boundary of Shanghai is washed by the East China Sea, the west part of the Pacific Ocean closest to China's east coast. The south side of Shanghai faces Hangzhou Bay. To the north, the mouth of the Yangtze River borders the large city; it is the longest river in China and pours into the East China Sea. Its geographic location has given Shanghai a northern subtropical, maritime, monsoon climate. It has four distinct seasons with abundant rainfall throughout the year and an average temperature of 17.6 °C (Shanghai Basic Facts, 2014).

The area of Shanghai is 6340.5 square kilometers. The Shanghai municipality now governs 16 districts (Shanghai Basic Facts, 2014), which are spread across the main land area of Shanghai and three islands at the mouth of the Yangzi River, and eight relatively smaller ones concentrated in the downtown area of the municipality. These downtown districts are more developed than the other eight in terms of economy and education because the other eight districts used to be rural area counties and most of them were converted into urban districts during the last two decades of the twentieth century, while one of them, the Chongming County, was just converted to be a district in July 2016. Not surprisingly, Shanghai is known for rich water resources. Its water area amounts to 11% of the city's total territory. The largest river winding through the city is called the Huangpu River. Originating from the Taihu Lake in the neighboring Zhejiang province, the 113-kilometer-long river enters the city from the southwest side, passes right across the downtown area, and then flows into the Yangtze River in the north of the city. All four Shanghai research schools in this study are located in two of the eight former rural districts. One of them is located by the

Huangpu River and, therefore, the school features Water Education because of its proximity to the Huangpu River.

Shanghai was once known as the "Paris of the East" and was called "the most cosmopolitan city in the world" in the 1930s (Anonymous Authors, 1934). Before the Opium War (1839–1842), Shanghai had already grown into a regional urban center thanks to its central location along China's eastern coastal line and its favorable location in the Yangtze River Delta. Shanghai was an excellent sea and river port for trade between China and foreign countries. However, it was only during and after the Opium War that Shanghai gradually became an international metropolis. Shanghai saw its first westerner move in and live in the city after the unequal Nanking Treaty was signed between the UK and the Qing Dynasty (1644–1912) as a result of the Opium War (Wasserstrom, 2009). Shanghai was forced to become a treaty port, along with four other Chinese cities, open to foreign trade and settlement.

During the treaty-port century of Shanghai (1843–1943), the city was turned into a "paradise for adventures" for foreigners and local capitalists (Wasserstrom, 2009). Over that period, local Shanghainese experienced dramatic social, economic, and political transformations of the city. They saw a great number of British, French, and American merchants and their families settle in the city, underwent Japanese occupation, and subsequently were governed by the Nationalist Party led by Chiang Kai-shek. Shanghai was taken by the Communist Party led by Mao Zedong in 1949. The People's Liberation Army came to take over the city and Chen Yi, a General of the People's Liberation Army, became the first Mayor of Shanghai. Since then, especially after China reopened its doors to the world after the Cultural Revolution, Shanghai started a new transformation under the governance of the Communist Party.

Shanghai now plays a very important role in China's economy, which is now the second largest economy in the world. With only 0.06% of the nation's land area, in 2013, Shanghai contributed 3.8% of China's Gross Domestic Product (GDP) (Shanghai Statistical Yearbook, 2014). The city's GDP per capita reached US$14,547, which was equivalent to the level of a medium-developed country in the world (Shanghai Basic Facts, 2014). Actually, it had surpassed Hong Kong and became the richest city in China as early as in 2009 (Bloomberg News, 2014). However, the overall GDP per capita of China is only US$7589 (Statista, 2015), which is almost half that of Shanghai. Therefore, Shanghai cannot be regarded

as a typical representative of the whole China in terms of economy, and probably not in terms of education either.

Shanghai's economic development has shifted to the tertiary industry like many developed countries. In 2013, the proportion of tertiary industry in Shanghai's economic structure reached 62.2%. Generally speaking, the larger the proportion that the tertiary industry or service sector takes up in an economy, the more developed it is. Shanghai also strives to become an international financial center. While the city attracts a great number of domestic and foreign enterprises to set up businesses in this fast-growing economy, in the financial sector alone, Shanghai had a total of 1240 financial institutes, including more than 400 foreign investment financial institutions, by the end of 2013 (Shanghai Basic Facts, 2014). Contemporary Shanghai is thus believed to be the dragon head of China's rise. And probably Shanghai is the most cosmopolitan place in China because of its legacy from the last century. Presumably, foreign ideas and practices have rushed into the city alongside international trade that has been the major developmental impetus of the city since the treaty-port century. Given its rapid ongoing transformations with the goal of becoming a cultural and economic center of China, it will likely become a cosmopolitan city in the world again.

Shanghai is the second largest city by population in China according to the 2010 Population Census of the People's Republic of China (National Bureau of Statistics of People's Republic of China, 2010). The resident population of Shanghai is over 24.15 million (Shanghai Statistical Yearbook, 2014), including 14.25 million permanent residents and 9.90 million residents from other parts of the country (Shanghai Basic Facts, 2014). Throughout China, there are 56 ethnic groups. Among the permanent residents in Shanghai, 98.8% are of the Han Chinese ethnicity, while only 1.2% belong to minority groups (Tang, 2011). Shanghai is also an international metropolis where many expatriates work and live. There are over 176,363 foreigners living in Shanghai, including 7832 Canadian citizens (Shanghai Statistical Yearbook, 2014).

Due to its special historical development trajectory in China and in the world, the culture of Shanghai has absorbed many Chinese local cultures and, at the same time, has been influenced by western cultures. Shanghai is known for its "海派文化" ("Hai Pai Wen Hua"), which means "Shanghai Style Culture." The main feature of the Shanghai Style Culture is believed to be "accepting hundreds of rivers as the ocean; inclusiveness and assimilation," which is "海纳百川; 兼容并蓄" ("Hai Na

Bai Chuan; Jian Rong Bing Xu") in Chinese. With this feature, Shanghai culture not only is rooted in traditional Chinese culture and the essence of local culture but also has absorbed a variety of elements from foreign cultures, especially western cultures, due to Shanghai's unique historical legacy in the past century. As Shanghai assimilates various local and international cultural influences, the culture also shapes Shanghai people's thinking and ways of doing things. Definitely, the people of Shanghai, the Shanghainese, are not unfamiliar with the mentality of learning from others and from the outside world. It is they who have created and continue creating an open-minded, inclusive, diverse, creative, and cosmopolitan city.

Unlike many other cities in China, Shanghai is a provincial municipality directly under the Chinese Central Government. There are only three other municipalities directly under the Central Government: Beijing, Tianjin, and Chongqing. Under the direct administration of the Ministry of Education of the People's Republic of China, Shanghai enjoys a certain degree of autonomy in terms of experimenting with and implementing new educational policies (Tan, 2013; Marton, 2006). For example, Shanghai is the first city that implemented the nine-year compulsory school education policy in 1978. Shanghai also enjoys a college entrance examination relatively independent of the national examination, the Gao Kao, and it also led the most recent Gao Kao reform alongside Zhejiang province in 2014 (The State Council of China, 2014).

Shanghai is always an advanced sector in China's education system (Fu, 2007), owing to the relatively higher degree of freedom in administering its education, compared to many other places in China, and its special status in the country's social, cultural, and economic development. In 2013, 99.9% of school age children attended the nine-year compulsory education (Shanghai Basic Facts, 2014). According to the 2010 Population Census, about 22% of the city's permanent residents received education at the college level and above. Worldwide, Shanghai also acquired its reputation for student achievement due to its participation in the 2009 and 2012 PISA tests. Shanghai won first place among all the participating countries and regions across all the three tested areas: mathematics, science, and reading (OECD, 2010, 2013). This phenomenal educational achievement sparked a wave of learning from Shanghai by other education systems around the world (Friedman, 2013; Howse, 2014; Jackson, 2014; Tan, 2013; Tucker, 2011).

The current Shanghai education system is governed by a comprehensive administrative authority, Shanghai Municipal Education Commission (MEC). The MEC was established during 1994 to 1995 by merging two bureaus which administrated school education and higher education, respectively (Lee & Hook, 1998). The administration of Shanghai education has two levels—the MEC at the municipal level and education bureaus at district or county level. There are 16 education bureaus across Shanghai. The two levels of educational administration oversee both publicly and privately funded school education in Shanghai. While the MEC formulates policies, supervises and evaluates school reform and development across the municipality, these education bureaus are given the authority to administrate K-12 schools in respective jurisdictions and to design and implement district-level initiatives in schools (Shen, 2007).

The structure of Shanghai school education consists of primary education (from Grade 1 to 5), junior secondary education (from Grade 6 to 9), and senior secondary education (from Grade 10 to 12). Primary and junior secondary education are compulsory for school age children. Children can go to public schools close to their home without taking tests. However, students must take the high school entrance exam, or "Zhong Kao," to be enrolled into senior secondary schools, and senior secondary school students must take Shanghai "Gao Kao" to be recruited by higher education institutes. Given the pressure from these examinations, as well as other sociocultural factors, such as cultural expectation about teaching, and the tradition of Chinese teaching (Deng & Zhao, 2014), Shanghai teachers are found to teach in a unique "student-centered and teacher-dominated" approach, which encourages student participation while still transmitting basic knowledge and skills and stressing "classroom discipline, exam techniques, and the assignment of homework" (Tan, 2013, p. 215).

In 2014, there were 757 primary schools and 768 secondary schools in Shanghai with 802.9 thousand children in primary schools, 426.8 thousand students in junior secondary schools, and 157.4 thousand students in senior secondary education. Among all the secondary schools, 55 of them are called "Experimental Model High Schools," following a policy that was introduced in 2004 (Shanghai MEC, 2004a, 2013a). These special high schools are expected to be leading players during the development of Shanghai basic education (Shanghai MEC, 2004a). Unsurprisingly, those who study in Experimental Model High Schools are more likely to enter prestigious universities. In 2015, about 88%

of senior secondary school graduates in Shanghai went to universities (Shanghai MEC, 2015a), compared to the national rate of approximately 75% (Xinhua Net, 2015). Despite the high college enrollment rate, however, Shanghai Gao Kao is still very competitive and high-stakes (Deng & Zhao, 2014). For Shanghai secondary school graduates, probably it will still be true that it is "the one exam that determines your life" until the new 2014 Gao Kao Policy takes real effect in the future (Yao, 2014). One of two participating Shanghai high schools in this study is an Experimental Model High School, which enjoys the privilege of municipality-wide student recruitment and more educational resources, while the other is an ordinary community high school.

Shanghai has been carrying out basic education reforms for more than 20 years (Wang, 2011). From 1988, the Shanghai government launched two waves of curriculum reforms that significantly impacted and are still impacting teaching and learning in schools (OECD, 2011). The current curriculum is the culmination of the second wave curriculum reform that was started in 1998. In 2004, Shanghai promulgated its current curricular blueprint for primary and secondary education. In the spirit of the Guideline of Basic Education Reform of China (Chinese Ministry of Education, 2001), the main purpose of the new Shanghai curriculum is to transform students from passive knowledge receivers to active participants in learning in order for students to cultivate creativity and independent thinking, improve practical skills, and develop comprehensively (Shanghai MEC, 2004b). The new curriculum promotes a student-centered teaching approach in which students are supposed to select their courses and learning through an effective combination of receiving knowledge through experience, inquiry, and exploration (Shanghai MEC, 2004b).

The goal of the current curriculum reform is consistent with the goal of Quality Education (Suzhi Jiaoyu) formulated in China in the late 1990s, which reflected the idea of a student-centered, more holistic approach to education (Dello-Iacovo, 2009). This goal is supported by the change in the new curriculum structure. The new structure contains three components. The first is called the Basic Curriculum. It is mandated by the government, targets all students, and is implemented through compulsory courses. The second is called the Extended Curriculum, which aims to develop students' differentiated learning and developing needs. The Extended Curriculum is implemented by a combination of elective academic courses and compulsory social practicums.

The third component is the Inquiry Curriculum, which aims to help students learn to learn and to learn autonomously through independent inquiry and exploration on topics linked to their experience, with support and guidance from teachers (Shanghai MEC, 2004b). Like the courses of the Extended Curriculum, the courses for the Inquiry Curriculum can also be designed within the school-provided basic guidelines from the Shanghai MEC. Students must have a certain amount of learning experience in relation to the Extended Curriculum and the Inquiry Curriculum.

It may be too early to judge how effective these curriculum reforms are. Several studies suggest that although the ideas of Quality Education are inspiring, examination-oriented teaching and rote learning may still dominate classrooms and teachers' professional autonomy may be jeopardized by sociocultural factors that impact education but are uncontrollable by these reforms (Dello-Iacovo, 2009; Deng & Zhao, 2014). The Shanghai government and the MEC also have given serious thought to this matter. At the outset of one key education policy document, the MEC summarized the point that Shanghai primary and secondary students are still overloaded with the burden of learning and assignments and that Shanghai school education still focuses too much on teaching for good marks rather than for students' growth (Shanghai MEC, 2010).

Therefore, Shanghai never slows its efforts in education reform for school education improvement. Hopefully, the most recent new policy on Gao Kao, after it is fully implemented, will eventually realize the ideal of "education for every child's lifelong development" (Shanghai MEC, 2010). In September 2014, Shanghai, alongside Zhejiang province, started a new Gao Kao experiment in China. The Shanghai new Gao Kao allows students to choose test subjects within a wider range of subjects alongside the three main subjects—Chinese, Mathematics, and English—that are compulsory. Moreover, students can take examinations for these selected subjects and English more than once. In addition, the new policy allows autonomous student recruitment by higher education institutes and the inclusion of internal assessment by secondary schools, to be incorporated into the college admission criteria (Shanghai MEC, 2014a). The fundamental goal of the new Gao Kao is to promote Quality Education by changing the situation that Gao Kao is the only criteria of college admission (Yan, 2014).

It is believed that the success of Shanghai education is largely owed to its teacher development strategies (OECD, 2011; Tan, 2013), although

it might be difficult to test this claim empirically. However, it is true that Shanghai was the first place in China that required continuous teacher learning and development (Fu, 2007). There are 42.5 thousand teachers working in primary schools in Shanghai while 63.1 thousand teachers work in secondary schools. According to the teacher and student numbers reported in the MEC 2014 annual report, the approximate teacher to student ratio in Shanghai elementary schools (Grade 1 to Grade 5) is about 1:18.8 and that of secondary schools (Grade 6 to Grade 12) is about 1:9.4. Teachers who teach in Shanghai schools obtain Teacher Certificates issued by the Shanghai MEC after applicants meet a range of qualifications including a university degree and the ability to speak Mandarin (Shanghai MEC, 2004c). In order to meet the needs for education and curriculum reform, Shanghai has been emphasizing experienced and new teachers' in-service learning and development since 1989 when Shanghai published the first provincial level regulation in this regard in China (Fu, 2007). The 1989 regulation stipulates four categories of teacher professional development: teacher in-service training, novice teacher training, formal educational degree, and learning related to a second educational degree (Shanghai Education Bureau, 1989).

Currently, Shanghai government and the MEC have very specific teacher learning and development requirements. Every in-service teacher should complete at least 360 hours of learning within 5 years; secondary school senior-grade teachers have to complete a minimum of 540 hours, while novice teachers during probation need to complete at least 120 hours of probation training. According to a national regulation about the registration of teacher qualification, teachers in China must complete the required hours of training before they are permitted to renew their teacher licenses every five years (Chinese Ministry of Education, 2013). Homeroom teachers (Ban Zhu Ren) need to take at least 30 hours of special training in addition to their subject-specific learning. All these teacher development opportunities are combined in municipal-level training (10–20%), district-level training (30–40%), and school-level training (50%) (Shanghai MEC, 2011). As such, given these systematic policies on teacher development, Shanghai teachers seem to be constantly participating in professional learning throughout their career.

At the school level, three main mechanisms help every teacher learn and improve their teaching skills: mentoring, teaching research groups (Jiao Yan Zu), and lesson preparation groups (Bei Ke Zu). Research

finds that these professional learning platforms in Shanghai schools are built into the school structure and rooted in Chinese culture (Paine & Ma, 1993; Tan, 2013). In particular, teaching research groups and lesson preparation groups provide the primary avenues for new teachers to learn how to teach and for experienced teachers to continuously hone their teaching skills. The teaching research groups in China were originally modeled on the approach of school-based teacher development of the former Soviet Union in the early 1950s. Since then, the teaching research group and other corresponding activities, such as lesson study, have become standard practices for in-service teachers in China (Tsui & Wong, 2009). Using the language from the western literature, these teaching research groups where teachers collaborate and learn can be called in-school professional learning communities (PLCs). This kind of PLC is a common practice in all parts of China now (Sargent, 2015; Sargent & Hannum, 2009; Zhang & Pang, 2016).

There are two main factors that ensure that these in-school PLCs work effectively for both teacher learning and student achievement (Tan, 2013). First, the teaching research group is built into the school structure in China (Paine & Ma, 1993). Teachers in Shanghai have relatively fewer teaching hours, compared with many other systems around the world; teaching research group activities are built into the regular school timetable; teacher collaborative activities are considered for teacher appraisal; and teaching-research group leaders are paid extra for their leadership (Tan, 2013). Second, the sociocultural factor of collectivism means Chinese teachers have no problem with sharing resources with or opening classroom doors to colleagues (Paine & Ma, 1993). Collaborations within teaching research groups are reported by Shanghai teachers to be respectful, trustful, and mutually beneficial (Tan, 2013). Given these experiences of in-school PLCs, it is not difficult for Shanghai teachers to imagine international collaboration when they are given opportunities to be connected with educators around the world.

As Shanghai continues reforming its education, internationalization has become one important component and goal of its educational development, including the development of K-12 school education. The main rationale for education internationalization, as stated in *The Shanghai Medium and Long-Term Educational Reform and Development Guideline* (2010–2020), is that Shanghai is becoming an international metropolis featuring an international financial center and an international shipping center. Therefore, students in Shanghai must develop "global awareness

and international communication skills" and the abilities of international collaboration and competition. At the same time, Shanghai education as a whole, including both school education and higher education, needs to enhance its "international attractiveness, influence, and competitiveness." To this end, Shanghai schools are encouraged to "investigate international understanding, education, and associated activities"; in particular, secondary schools are encouraged to "expand the scope and channels of international exchanges for students." Also, Shanghai's MEC will experiment with recruiting international students to local schools and experiment with international curricula at the secondary school level (Shanghai MEC, 2010).

Since the Shanghai government and the MEC are disposed to internationalize their education, schools and the education bureaus at the district level are actively involved in international exchanges and collaborations. For example, the district where three of the schools participating in the study are located has been involved in a variety of initiatives for education internationalization. The Web site of the education bureau of the district shows that schools in the district have been involved in various international activities, such as forming sister school partnerships, visiting schools overseas, and receiving visitors from foreign schools. Moreover, in 2014, the district established a new joint international high school as the result of cooperation between one Shanghai public high school and one American private high school; it is the first of this kind in Shanghai (Shanghai MEC, 2014b). In order to improve language skills, teaching skills, and international communication skills of teachers, the district sent teacher delegations, especially English teachers and bilingual teachers, to study overseas for four to six weeks (Minhang Education Bureau, 2004). It is notable that most of these international connections and collaborations of the district were made with western developed countries, especially those in Europe and North America.

Certainly, in Shanghai, these kinds of exchanges and collaborations with foreign education systems happen not only at the district level but also at the municipal level. For example, the 2014 Annual Education Report (Shanghai MEC, 2014b) shows that in this year, Shanghai exchanged 130 primary school Math teachers with England, signed a new educational cooperation agreement with the Rhone-Alpes region in France, continued the cooperation with Espoo in Finland, and organized a youth camp involving 121 students and teachers from 17 international sister cities of Shanghai. Since 2012, Shanghai MEC has been sending

public school teachers overseas to participate in the relatively long-term study (over six months) (Shanghai MEC, 2012a). The Shanghai government provides funding (100 thousand RMB for each person) to those selected teachers. During their study, either as visiting scholars or as students in a degree program, these teachers still keep their teaching position and basic salary at home. Over the past four years, all the destinations of these teacher training candidates are in western developed countries either in North America or in Europe (Shanghai MEC, 2012b, 2013b, 2014c, 2015b). Moreover, the teachers who visited and studied abroad would be asked to share their learning experiences and achievement among other teachers. In summary, given the policy intention of education internationalization and all these associated opportunities of sharing and collaborating with foreign education systems and schools, Shanghai schools and teachers are familiar with the idea and practice of learning from educators in other countries and being learned from, in turn, especially by those in the western developed world.

2.2 The Place of Ontario and Its Education

Ontario is Canada's second largest province. It is named after Lake Ontario, and the word "Ontario" is believed to come from an Aboriginal (Iroquois) word for beautiful water (Government of Ontario, 2015). Ontario covers more than one million square kilometers of land and freshwater (Ontario Ministry of Finance, 2015). To the east, Ontario is bounded by the largest Canadian province, Quebec, while another province, Manitoba, borders its western side. On the map, we can see Ontario is flanked by Hudson Bay to the north and the St. Lawrence River and the Great Lakes, including Lake Ontario, to the south. The St. Lawrence River and the Great Lakes also constitute the border between Ontario and the USA. In addition to abundant water resources, about 66% of Ontario's land is covered by a variety of forests (Immigration Ontario, 2015a). The Provincial Government of Ontario governs 444 cities and towns including the capital city of Canada, Ottawa, and the Greater Toronto Area, which is the most populated region in the country (Immigration Ontario, 2015b; Statistics Canada, 2014a).

Enjoying favorable geographic features, the climate of Ontario is quite hospitable with moderate temperatures in winter and summer and well-distributed precipitation year-round (Environment Canada, 2013). However, in some years and in some regions of Ontario, winter can be

very cold. Northern Ontario, predictably, is much colder than the southern part of the province, whose climate is greatly influenced by the surrounding Great Lakes (Environment Canada, 2013). Southern Ontario is believed to be one of the most suitable places for human settlement in Canada. All the four Canadian research schools of this study are located in an urban area in southern Ontario.

Before Europeans came, the land where the present Ontario lies was the home of aboriginals who are believed to have come from Asia and have lived on this continent for more than 12,000 years (Whitcomb, 2007). Since the 1600s, British and French immigrants gradually turned this land into a European colony (Government of Ontario, 2015). The British colony where Ontario presently is located was known as Upper Canada following the enactment of a British Constitutional Act in 1791 when many British colonists and Iroquois from America relocated to this area as a result of the American War of Independence (1775–1783) (Government of Ontario, 2015; Public Archives, 1914). Another effect of the American War of Independence is that the border between Ontario and the USA was fixed at the St. Lawrence River and the Great Lakes. In 1867, Upper Canada was given a new name, "Ontario," and became one of Canada's provinces (Government of Ontario, 2015). By then, the population in Ontario had increased greatly from what it was before 1812 and it was already the home of a variety of ethnicities including Aboriginals, British, French, Germans, Scots, Irish, as a result of favorable immigration policies (Government of Ontario, 2015; Whitcomb, 2007).

At the beginning of the twentieth century, Ontario experienced a great economic boom along with the USA and Europe. The demand for exports created opportunities for Ontario; and capital investment flooded into Ontario to boost industries, such as mines, energy, and construction. With the economic boom, more immigrants from England and the European continent arrived in Ontario (Whitcomb, 2007). Ontario's involvement in the World War I (1914–1919) disrupted somewhat, if not significantly, its trend of economic and population growth. However, the Great Recession of the 1930s had a devastating effect. Four years after the outbreak of the Recession in 1929 in the USA, the overall industrial production of Ontario fell more than 50%. After World War II (1939–1945), Ontario picked up the trajectory of economic growth again and after the 1950s, ordinary people living in this province started enjoying the benefits of economic growth, such as

cars and convenient highways (Baskerville, 2002). It is believed that the 1950s was the most important time in Ontario's history from an economic perspective (Whitcomb, 2007) and this era led to the 1960s when Welfare State policies in this province, along with the whole of Canada, were formed (Baskerville, 2002). Also in the 1960s, Ontario accepted a lot of immigrants from Asia, including Chinese, South Asians, as well as Filipinos, and Caribbean Blacks (Whitcomb, 2007). Since then, the province, especially the city of Toronto, has become one of the most multicultural places in the world.

The geographic features of Ontario create abundant natural resources and these resources produce the base of Ontario's economy including mining, energy, agriculture, and forestry. While natural resources still play a key role in Northern Ontario, Southern Ontario has become a manufacturing center and the home of many service industries including business, information and technology, and finance (Immigration Ontario, 2015c). Located within the North American Free Trade area, Ontario contributes about 37% of the national GDP of Canada (Government of Ontario, 2015), and constitutes the largest economy of all the provinces and territories in the country (Statistics Canada, 2013). The GDP per capita of Ontario is approximately US$52,705, while that of the whole of Canada is US$41,069 (Ontario Ministry of Finance, 2015; Statistics Canada, 2014b). Canada as a whole is one of the so-called Group of Seven (G7) countries that represent about half of the global wealth (Laub & McBride, 2015).

Canada is a country of immigrants. It has received more than 230,000 immigrants annually from countries all over the world since 2004; China has been one of the leading sources for a decade (Government of Canada, 2013). Of the total Canadian population, about one-fifth are first-generation immigrants and about 3.5% are recent immigrants who arrived in Canada after 2006 (Statistics Canada, 2014c). Since the 1960s, Ontario has become one of the most multicultural places in the world (Whitcomb, 2007). Multiculturalism is believed to be "a Canadian reality." The federal government of Canada announced its multicultural policy as early as 1971 (Friesen, 1985, p. 2) which states that Canada has two official languages but no particular official cultures and that the Government of Canada supports all cultures in Canadian society (Canada, House of Commons, pp. 8580–8581, cited in Friesen, 1985). The existence of various ethnicities and cultures in the society and the official recognition and support of multiculturalism have profound

implications for education, for example, the formation of multicultural education programs (Friesen, 1985).

Currently, Ontario is the most populous province in Canada and this will be still the case in the next few decades (Statistics Canada, 2015). The population of Ontario is over 13.5 million with more than 85% of it living in cities along the Great Lakes. Aboriginal peoples make up about 2% of the population in Ontario (Government of Ontario, 2015). Immigration has been the main source of population growth throughout its history. Ontario now receives over 50% of new immigrants to Canada (Statistics Canada, 2014c); and the Greater Toronto Area takes in approximately 80% of Ontario's immigrants (Immigration Ontario, 2015a). Although English and French are the two official languages of Canada, Ontario has more than 100 languages and dialects. All four Canadian schools researched in this study are located in one school district in the Greater Toronto Area, an area which has very diverse demographics in terms of mother tongues (Statistics Canada, 2011, 2012). Furthermore, over 20% of the population in this area is made up of Chinese people who are primarily from mainland China, Hong Kong, or Vietnam (Statistics Canada, 2010).

The Ontario Ministry of Education (MOE) is the provincial authority administering publicly funded elementary and secondary school education. There is no national level educational governing body in Canada. The Ontario MOE, like other provincial educational authorities, takes full responsibility for education. The MOE sets the provincial curriculum, determines educational policies, and provides funding to public schools (OECD, 2011). Below the MOE, public schools are directly administered by 72 school boards, including 31 English Public School Boards, 29 English Catholic School Boards, 4 French Public School Boards, and 8 French Catholic School Boards. As of 2014, there were 3980 elementary and 917 secondary schools in Ontario. The grades in Ontario elementary schools go from Grade 1 to Grade 8, while the grades from Grade 9 to Grade 12 constitute the secondary school level (Ontario MOE, 2014). The four Canadian research schools of this study belong to one English Public School Board. In 2014, the number of elementary school students in Ontario was about 1359.4 thousand (Kindergarten to Grade 8) while that of secondary schools was 663.9 thousand (Grade 9 to Grade 12) (Ontario MOE, 2014).

Ontario has been identified as a strong, successful education reformer by the OECD (2011). In terms of student achievement in Mathematics,

Reading, and Science, Ontario along with the whole Canada, is one of the top performers among the countries participating in the PISA tests (CMEC, 2013; OECD, 2011). It is believed that Canadians' valuing of education, the fact that Canada is a welfare state featuring social services such as universal health care and free public education, and the promotion of educational policies such as provincial standards for teacher selection, are contributors to Canada's education success (OECD, 2011). The OECD attributes the strong performance of Ontario education to a set of effective reforms initiated by the former McGuinty Liberal government in the first decade of the twenty-first century. High teacher quality and enhanced teachers' professional accountability are two important outcomes of these reforms that are believed sustain Ontario's high education achievement (OECD, 2011). Moreover, as a multicultural country and province, Canada and Ontario did extremely well on the education of immigrant children, as measured by the PISA tests of 2009. The OECD (2011) summarizes this by saying that Canada's selective immigration policy, Canadian multiculturalism philosophy, and some explicit policies at the provincial level are contributing factors to this success. Indeed, Ontario's commitment to education for all students is ensured by an educational policy on teachers' instruction and students' assessment—Learning for all: A Guide to Effective Assessment and Instruction for All Students, Kindergarten to Grade 12 (Ontario MOE, 2013a).

After the Liberal party won the provincial election in 2003, the Ontario government launched a wave of education reforms that would significantly impact Ontario education in a positive way over the following decade (Gallagher, Cameron, Kokis, Oliphant, & McCartney, 2012; Ungerleider, 2008). Essentially, these reforms had three main goals: (1) improving literacy and numeracy outcomes in elementary schools; (2) increasing students' graduation rate in secondary schools, and (3) building public confidence in the publicly funded school system (Gallagher et al., 2012). This reform was accompanied by a new provincial school curriculum which was drafted at the end of the 1990s by a previous Conservative government responding to global change (O'Sullivan, 1999) and was planned to be fully implemented in 2003 (Ryan & Joong, 2013). This common curriculum for publicly funded schools in the province not only contains specific learning expectations for each subject and grade but also stipulates provincial standards for students' performance (Ryan & Joong, 2013). Moreover, the Ontario

government created an independent agency, the Education Quality and Accountability Office (EQAO), to measure Ontario students' achievement in Reading, Writing and Math in Grades 3, 6, and 9, as well as for Literacy in Grade 10. These EQAO assessments are expected to align with and reflect the Ontario curriculum and the common provincial standard (EQAO, 2015). Prior to the EQAO, the province had no standardized provincial testing program (following the phasing out of the Grade 13 and, subsequently, the OAC standardized examinations in 2003). Thus, access to higher education is not constrained by the requirement of a common secondary school exit exam or a university/college entrance exam.

The changes resulting from these Ontario curriculum reforms go beyond the content of teaching; they also impact teaching strategies, student assessment, and teachers' and students' perception of successful schooling (Ryan & Joong, 2013). For example, the current Math curriculum was revised after the 2003 provincial election in order to specifically respond to the results of the PISA Math test in 2003 (CMEC, 2013). This Math curriculum adopted the idea of "mathematical literacy" (Ontario MOE, 2004), which emphasized students' "capacity to identify and understand the role that Mathematics plays in the world," mathematical judgment, and engagement in Math learning (OECD, 1999, p. 41). As a result, the Ontario Math curriculum promotes problem solving as a key teaching strategy and student-centered, inquiry-based learning as a primary student learning strategy (Ontario MOE, 2004, 2006). Unfortunately, these teaching and learning strategies, as well as the Math curriculum, became an issue for many parents and educators when the PISA 2012 results showed that Ontario students' Math achievement was declining (Huang, 2014). Regardless of the public debate on the effectiveness of the curriculum and these new teaching and learning approaches, problem-solving and inquiry-based learning had taken root in Ontario classrooms; and these strategies are still promoted and required to be implemented by teachers in all subjects and grades (Ontario MOE, 2013a).

One of the key ideas behind these curriculum and education reforms in Ontario is building teachers' capacity at both individual and collective levels (Fullan, 2010a, 2010b). At the beginning of these reforms, Ontario created the Literacy and Numeracy Secretariat (LNS) to support teacher capacity-building initiatives in order to improve student learning and achievement in all grade levels across the system (Gallagher et al.,

2012). To this end, the province also provides continuous professional learning opportunities and resources including personnel who assist teacher growth and student learning, and resources, such as professional learning institutes, webinars, and instructional guides (Gallagher et al., 2012). It is believed that this "professionally driven" education reform and change is one key to the success of Ontario education (OECD, 2011).

In 2014, there were about 74,961 full-time elementary and 40,194 full-time secondary teachers in Ontario. Thus, the teacher to student ratio in Ontario elementary schools (Kindergarten to Grade 8) is about 1:18.1 and that of secondary schools (Grade 9 to Grade 12) is 1:16.0 approximately, according to the available student and teacher numbers (Ontario MOE, 2014). To teach in Ontario, a person must be certified by the Ontario College of Teachers (OCT) after he or she has completed a postsecondary degree and a four-semester teacher education program. With the OCT qualification, a new teacher is required to pass a one-year school-based New Teacher Induction Program that is supervised by the school principal. The new teacher must demonstrate sufficient knowledge on student learning, curriculum, and teaching, to be permitted to continue teaching (Ontario MOE, 2010a). Every experienced teacher in Ontario is required to make and fulfill an annual professional learning plan in collaboration with and evaluated by his or her principal (Ontario MOE, 2010b). For these in-service teachers, professional learning opportunities include formal training for necessary knowledge and skills, job-embedded staff development, and an array of professional development activities, such as taking Additional Qualification Courses, conducting teacher research or lesson- and self-study (Ontario MOE, 2007b).

The idea and practices of professional learning communities (PLCs) are definitely familiar to Ontario schools and teachers. The Ontario MOE defines the PLC as "a model for Ontario schools" and stresses that school-based PLCs should contain six key components: ensuring learning for all students, relationship among colleagues, teachers' collaborative inquiry, focusing on students' learning results, supportive school leadership, and alignment with a common focus of the school (Ontario MOE, 2007a, p. 1). To sustain an effective school-based PLC, the MOE urges teachers to "focus on learning as much as teaching, on working collaboratively to improve learning, and on holding themselves accountable for the kinds of results that fuel continued improvements" (Ontario MOE, 2011, p. 55, cited by MOE, 2013b). At the school

level, the practice of PLCs is promoted as an important way to support teachers' continuous learning and development (Ontario MOE, 2010b). Also, each year a few designated Professional Activity or Professional Development days are devoted to in-school professional learning. The practice of PLCs goes beyond the school level in Ontario. For example, Fullan (2010a) describes the "Schools on the Move" initiative in Ontario, in which over one hundred schools made their experiences and resources available to other schools in the system to learn from. Moreover, the MOE provides some sample practices of professional learning communities across school boards and regions in the most recent assessment and instruction guide (Ontario MOE, 2013a).

Internationalization is also a priority of Ontario education. The province has an overall strategic plan to internationalize its education, including both school education and postsecondary education, while the Ministry of Education focuses on the implementation of *Ontario's strategy for K–12 international education* (Ontario MOE, 2015). The rationale behind the strategy emphasizes three aspects: international education to enhance students' academic performance, intercultural understanding, and overall development in the interconnected world; international education to bring social, cultural, and economic benefits to the province; and international education in Ontario to be consistent with Canada's federal strategy in this regard as well as existing international partnerships. There are five components in the strategy: (1) cultivating students' global awareness, knowledge, and perspectives by working with school boards as well as schools; (2) boosting international student recruitment in the competitive global market; (3) educators' sharing and learning through exchange programs and partnerships; (4) internationalizing the curriculum and students' learning curriculum; and (5) offering Ontario Secondary School Diploma programs overseas.

In addition to the explicit student focus of Ontario's international education strategy, the MOE also believes that educators from different countries and cultures can learn from each other about best practices and pedagogies and that this learning can make a positive impact in the schools where they work. It proposes that educators' learning, sharing, and positive impact can be achieved by hosting international educational delegations, by visiting or working abroad, and by international academic partnerships, projects, and research initiatives (Ontario MOE, 2015). Moreover, the MOE attempts to provide teachers with more international work and exchange experiences and to develop Additional

Qualification Courses related to international education for teachers (Ontario MOE, 2015).

However, there is little evidence to show that Ontario teachers are actually involved in professional learning that is related to educational internationalization. As far as teachers are concerned, the policy does not seem to have taken effect yet. Following the call for educational internationalization, Ontario school boards have developed specific plans and actions in this regard. Yet teacher involvement is not an obvious priority. For instance, one study describes how one school board supported educators to visit other countries to learn about others' experiences and build relationships over a few years, but these were mostly board leaders and school administrators (Huang & Reed, 2014). The number of teachers who have participated in these overseas learning opportunities is minimal. Another school board stated that education internationalization and global education are its priorities and in 2013, this board promulgated its strategic plan that laid out several focal areas of development in terms of education internationalization (Toronto District School Board, 2013). Their list of focuses revealed that, in addition to providing more intercultural experiences for local students, the Board was more interested in recruiting more international students for its economic benefit. This kind of financial motive with respect to international education seems to also be reflected at the provincial level and at the federal level. For the Canadian federal government, educational internationalization is a "driver of the Canadian economy," and can bring in financial benefits through recruiting international students to study at Canadian educational institutes (Ministry of International Trade, 2012).

2.3 A Reciprocal Learning Space in the Making

Ontario and Shanghai are different in many ways including the demographics of the people, cultural development, historical changes, social transformations, among other aspects. On the other hand, the two places also seem to share some common features. For example, in terms of culture, despite the differences due to ethnic composition and historical development, it seems that both places embrace the spirit of multiculturalism, although in different ways. Shanghai is like a melting pot that continuously absorbs different elements of local, national, and international cultures in a way that gives rise a unified culture of Shanghai. Ontario, at least the city of Toronto where I temporarily live at present, is more

like a mosaic in which pockets of cultures visibly exist in a symbiotic manner. Shanghai people are not unfamiliar with North American culture and English as a second language owing to their long-time exposure to the world culture. Similarly, Ontario people must have experienced Mandarin, and probably Shanghai dialect as well, and Chinese culture, which can be found in various locations, such as China towns and restaurant districts in the city of Toronto. Economically, both Shanghai and Ontario have acquired enviable statuses nationally, regionally, and internationally. They provide more job opportunities, have a higher living standard, and attract nationals and foreigners to visit, work, and live there. With respect to history, culture, and economic development, Shanghai and Ontario are both important places in the world, making contributions not only to their mother nations but also to the world community and humankind as a whole.

In terms of education, the two places seem to have notable similarities, although many obvious differences are evident as well, such as different structures of their education systems and distinct values of education that are linked to culture and tradition. Both places launched substantive educational reforms at the time of the transition of the twentieth to the twenty-first centuries. These curriculum reforms are still relevant to today's school education, teachers' teaching, and students' learning in both places. Shanghai adopted education reforms in a more progressive manner due to the dramatic social and economic development in the city as well as in China over the past three decades. Both Shanghai and Ontario have gained honorable reputations with respect to educational achievement in their public education systems; both place great emphasis on teacher development and learning since these are regarded a driver for educational reform and improvement. The concept of professional learning communities, which is one of the key ideas underpinning this book, seems to be an important ingredient in the practice of teacher education in both school systems. In that sense, it can be surmised that, as a natural extension to their existing practice, teachers in both jurisdictions can easily engage in learning opportunities in professional learning communities developed between Shanghai and Ontario schools.

Internationalization is a priority for the education in both places. They both have developed strategies and carried out actions to promote the idea and ensure its implementation in the systems. However, the strategies and actions in the two places have different focuses. Shanghai seems to be making more of an investment in this regard than Ontario.

In particular, Shanghai school teachers seem to have more opportunities to be involved in and benefit from initiatives of educational internationalization promoted by the government. It seems that learning opportunities related to educational internationalization have become an element of Shanghai teachers' professional learning schema. For Ontario teachers, however, the idea of educational internationalization and associated learning opportunities does not seem to be too relevant to their professional activities except for seeing growing numbers of international students in their classrooms.

The differences and commonalities of Shanghai and Ontario and of education in the two jurisdictions form the context of the reciprocal learning space between the two places. These differences and commonalities generate tensions and opportunities of learning in the sister school network that connects Shanghai and Ontario teachers. What can and can not be exchanged and created in the reciprocal learning space by these teachers has a bearing on how they work in their schools and what they experience in their own societal and educational environment. It is this understanding of the context and these tensions and opportunities that helped the researcher make sense of the reactions and experiences of the participating teachers from the two places when they engaged in collaborative activities in the emerging Canada-China sister school network. Earlier in this book, I have argued that teacher collaboration constitutes the main activity in the reciprocal learning space between the two educational jurisdictions. In other words, collaborative activities in these teacher INPLCs form the space in between, as it is through collaboration that teachers draw links between the two distant local realities. While "reciprocal learning space" is abstract and conceptual, collaborative activities of teachers are tangible, operational, and, therefore, more researchable, and so, to delineate and examine the reciprocal learning space, I chose to focus on teachers' collaborative activities that took place in the Canada-China sister school network.

Over the first two project years, there were thirteen main collaborative activities in total that occurred in the four pairs of sister schools. In each pair, there were two to six activities that involved teachers, principals, and students in most cases. A common theme or focus would be discussed and agreed on by the two schools. Subsequently, the teachers in the two schools would work on the focus activity for a relatively long time. In School Pair 1, the two secondary schools jointly planned a student exchange program over one year, starting from March, 2014

(Sister School Meeting minutes, March 15, 2014) by directly involving both principals and three Canadian teachers. The two principals led most of the conversations during the meetings while teachers offered suggestions, provided materials as needed for the program planning, and recruited students at the end. This student exchange program was not launched successfully due to the insufficient number of students volunteering on either side of the pair. During the process, however, the two schools exchanged a lot of information including the school organization, curriculum, and the exchange program designs. Following these fruitless efforts, one Canadian computer science teacher who participated in the student exchange program planning initiated a joint comparative study partnering with one computer science teacher in the Chinese sister school. They planned to investigate and compare the two schools' use of technology in teaching and learning. Unfortunately, this project turned out to be short-lived because the Chinese teacher lost interest after a few discussions about the study design. Students would have been a part of the joint study if it had been conducted. The partnership of School Pair 1 was also ended by October 2015 in part because the Chinese principal and teacher lost interest in continuing the partnership after the two failed attempts.

School Pair 2, the other secondary school pair, embarked on more activities and involved more teachers than Pair 1 and took a very different approach than Pair 1 in terms of the content of the partnership. Starting in April 2014, Pair 2 at first mainly focused on the curricular teaching and learning. The involved subject areas included Psychology, Physics, History, and Mathematics, with eight Chinese teachers and five Canadian teachers participating in these subject activities. The teachers of these subject areas shared their curricula, teaching materials and methods, student assessment methods, and, in some cases, classroom teaching video clips. It was only in the second year of their partnership that the two schools came up with an extracurricular project involving an environmental student group in each school. Students were involved in all of these activities in one way or another, such as providing student work, participating in classroom teaching and learning for video tapings, or directly involved in videoconferences under teachers' supervision. Unlike the principals' direct involvement in the Pair 1, the two principals of Pair 2 took an auxiliary position. They only attended major planning meetings at the beginning or at turning points of the partnership. For the Chinese school, the principal appointed one vice principal to be

fully responsible for the coordination of the project while another vice principal was also involved at sometimes. Although all the six activities were expected to be long-term collaborations, four of them stopped due to different reasons such as participating teachers' leave from the school or teachers' loss of interest. Only two of them will potentially continue; however, they were temporarily interrupted by a teacher strike in Ontario secondary schools starting in November 2015. The two principals expressed their willingness to continue the two activities once the teacher strike was over (Sister School Meeting minutes, November 30, 2015).

There are two elementary sister school pairs. Pair 3 is the longest partnership, compared to the other three pairs, having started exchanges in October 2013 (Sister School meeting minutes, October 10, 2013). However, it took the principals and teachers in the two schools a fairly long time to figure out a common interest on which to collaborate. In fact, principals and teachers merely exchanged general information about the schools and some ideas about collaboration in the first project year; concrete collaborative activities only occurred in the second project year. From September 2014, thanks to one Canadian teacher's initiative, two actual collaborations linking teaching and learning in the two schools started to take shape (Sister School meeting minutes, September 17, 2014). Tied into her classroom teaching, the Canadian teacher first adopted and adapted one Tangram syllabus that was shared by two Math teachers in the sister school. Later, she borrowed the idea and practice of water science education shared by one Science teacher in the Chinese sister school. She then designed and implemented a full unit of curriculum on water education with her Canadian class. The Canadian teacher was the only teacher who participated in these activities whereas five Chinese teachers were involved at different times including one on-site teacher coordinator. It was only at the end of the second project year that another Canadian teacher, who is not included in this study due to her limited participation, started getting involved in the sister school partnership. The two principals, as well as the two vice principals of the two schools, took only auxiliary positions. The Chinese principal appointed a curriculum leader as the on-site coordinator to be responsible for the sister school project. Students in both schools were involved. For the Canadian classroom, students were direct participants in their teacher's teaching and then they shared their learning process and outcomes with the sister school. The Chinese students participated indirectly through their teachers' sharing classroom teaching and learning. The sharing

of Math teaching and the Canadian teachers' enthusiasm in borrowing from Chinese Math teaching was not sustained. After one trial, the collaboration between the two sides on Mathematics stopped. However, the collaboration on water science has been sustained. Followed by an inspiring videoconference in May 2015 involving teachers, students, and principals in both schools (Sister School meeting minutes, May 27, 2015), the Canadian teacher and two Science teachers in the sister school continue their collaboration in the 2015–16 school year (Sister School meeting minutes, September 2, 2015).

Another pair of elementary schools, Pair 4, was the last to formally start their partnership in May 2014 (Sister School Meeting minutes, May 8, 2014). From June 2014, the two parties decided to organize students' pen-pal activity and to exchange students' artworks. With the supervision of their teachers, students participated in a videoconference where they talked to their pen pals directly and then exchanged letters. This pen-pal activity culminated in a movie commentary project in which students in both schools watched the same movie followed by a commentary writing activity. Some selected students' writings were shared with the sister school. The other simultaneous activity was sharing students' artworks. Artworks have been exchanged in two rounds by the end of the second project year. The artworks were displayed by participating teachers on one designated billboard in each school. The researcher helped the two schools deliver these artworks back and forth and witnessed the displayed works in the school buildings. There were two Canadian classroom teachers involved in these activities. In the Chinese school, four Chinese teachers participated, among whom two were classroom teachers of the sister class while the other two were curriculum leaders were appointed to coordinate school-level activities related to the project. Unlike the Canadian school, which confined the activity within two classes, the Chinese school actually selected students from other classes and grades to participate in these activities. Therefore, one of the two curriculum leaders took an on-site coordinator's role while the other leader helped share the school-wide students' events with the sister school. The Chinese principal was also directly involved in meetings and in some coordination work whereas the Canadian principal mainly took an auxiliary role giving her two teachers' autonomy to carry on the project. Starting from November 2015, the pen-pal activity between the two schools, which was interrupted by the teachers' strike in Ontario elementary schools during June 2015–October 2015 (Project

Communication record, September 5, 2015), evolved to become a student ambassador project in the hope of engaging more students across grades and classes in the schools. Students' artwork continues to be exchanged in the 2015–2016 school year.

The focus activities between school partnerships described above were punctuated by videoconferences between the schools as needed. The sister school meetings during which participating teachers can directly speak to each other constitute another form of reciprocal learning activity. There were 33 videoconferences between these school pairs with each pair having five to ten meetings depending on the pace and needs of the collaboration. Through these videoconferences, teachers on both sides exchanged school information, shared practices, discussed possible collaboration areas or topics, and reported follow-ups of joint activities. In addition to teachers and principals, students from both schools were sometimes directly involved in Skype meetings. Students shared their campus lives with each other. In the two elementary school pairs, students from the two countries used Skype conferences as a part of their collaborative learning. All the conferences were coordinated and facilitated by research assistants from the RL project. Some conferences were facilitated by research assistants in one country only, while others relied on the collaboration between research assistants in the two countries. The main communication tool was Skype while QQ, which is a Chinese-based tool, was also used in some circumstances as needed.

When a new partnership started, principals of the partner schools usually met first before they involved interested teachers. With interpretation by the research assistants, the conferences in each pair started with sharing general information about the school and the main features of the education system in each country. The main purpose of these initial meetings was to identify common interests between schools. Subsequently, principals would invite teachers to the conferences so that teachers could share their experiences and discuss specific collaborative activities. As the partnerships evolved, the participants and forms of conferences varied depending on the decided content of collaboration. In School Pair 1, the two principals always participated when this pair was jointly planning a school-level student exchange program. The Chinese principal of this pair rarely invited his teachers in the meetings. After the student exchange program failed, two teachers, one teacher from each of the two schools, continued to meet to discuss a joint study without their principals' presence. In Pair 2, the two secondary school principals

handed over the meetings to teachers soon after their initial meetings. The subsequent meetings were then organized by subject areas according to the subjects taught by participating teachers. Basically, teachers took the leadership in each thematic activity and corresponding meetings while the principals played a supportive role in the background. Only a vice principal of the Chinese school was always involved because she was the on-site coordinator for the project assigned by her principal. When needed, the two principals met again in order to discuss issues and future plans of the partnership.

Unlike the two secondary school pairs, which either focused on one particular school-level activity or dissolved into several subject activities, the two elementary school pairs mainly took an approach that connected classroom teachers after principals' initial exchanges and planning sessions. This different approach came about naturally because of one commonality of elementary schools in the two systems, namely that in Canadian schools one elementary school teacher teaches almost all subjects of his or her class while in Chinese schools, a homeroom teacher (Ban Zhu Ren) also takes full responsibility for the students in the class. However, homeroom teachers in Chinese elementary schools are usually specialist teachers who do not teach all subjects like their Canadian counterparts do. Despite different responsibilities between Chinese homeroom teachers and Canadian classroom teachers, they both spend a substantial amount of time with their classes each day. Given this commonality, therefore, most meetings between these elementary school teachers were about the progress and planning of ongoing sister class activities linked to the teaching and learning in each other's classrooms. Students were brought into the meetings occasionally; they were either directly involved in collaborative activities or shared their school experiences with students and teachers in the sister school. The principals participated as needed when activities were in process. In the case of Pair 3, one Canadian teacher and her several partners in the Chinese sister school basically took over the meetings as they planned and implemented activities. The two principals participated sporadically without real input. In Pair 4, the two principals followed through their limited number of sister school videoconferences and ongoing sister class activities.

Supplemental to these collaborative teaching and learning activities and corresponding videoconferences, the teachers, and principals in the two places also exchanged correspondence, documents, and students' works electronically or physically with research assistants' assistance.

Exchanged documents and materials include school brochures and videos, school gifts, video clips of special events of the schools, curriculum documents and materials, syllabi, teaching plans, video clips, and other items that were associated with ongoing focus activities. Student work included students' compositions, pen-pal letters, and artwork. Many of the student works and other materials were delivered by research assistants when we had opportunities to visit these schools in Shanghai and in Ontario. These videoconferences, along with exchanged emails, letters, documents, and materials, played a much greater role than mere communication. They form the collaborative activities that complement the focus activities between sister schools. These exchanges helped participating teachers to observe and gain first-hand experience of the education in the other country, they enhanced mutual understanding and learning through exchanged artifacts and ensuing conversations during videoconferences, and, therefore, bound educators in two different countries together as effective professional learning communities.

One notable issue associated with these collaborations and exchanges in the rudimentary Canada-China school network is that, as of the end of the second project year, few cross-partnership connections had occurred. Ideally, there could have been not only collaboration and communication between the two sides within a sister school partnership but also sharing and learning between partnerships. However, almost all the collaborative activities and exchanges took place between these aforementioned school partnerships, although they were facilitated by the same group of researchers who worked across partnerships. There were other favorable conditions that could have facilitated cross-partnership learning. For example, in the Shanghai side, the elementary schools belong to the same longitudinal research project directed the East China Normal University, which is also one partner Chinese university of the RL project and could have facilitated learning between these Shanghai schools. The principals and other participants of the two Shanghai secondary schools were aware of each other and the researchers also informed them of the progress in the other school partnership. In the Ontario side, all four participating schools belong to the same school board and each principal was aware of how the others were doing on the RL project. Although these conditions in each education system and in the network are favorable for cross-partnership sharing and collaboration, little effort had been made either by the RL project or by the schools to create more networked connections. It has become clear

that if the reciprocal learning space between the two education systems is to take full effect as hoped, it needs to grow in a way that makes more connections at the network level and that includes more schools in more educational jurisdictions in the two countries.

There was one opportunity that would have strengthened the connections among these mostly separate school partnerships in this study. This opportunity occurred when the second annual general meeting of the RL project was held in Shanghai in 2015. All the participating schools in this study were invited to the event to share their learning beyond the partnership, with the whole network. Unfortunately, the participants of the four Ontario schools could not make the trip due to funding and timing issues that the RL project was not able to solve even though the school board was also involved. Only one Shanghai elementary school shared their reciprocal learning experience with the general audience at the annual general meeting; two other Shanghai schools just attended; the fourth did not even bother to be present. In a sense, these eight schools from Shanghai and Ontario had not grown into a real network. Over the first two years, the Canada-China school network basically operated at the school partnership level, which can be regarded as units of the anticipated network. Therefore, the knowledge that I drew from the experiences of these Shanghai and Ontario schools is limited due to the premature stage of the school network. Nonetheless, these participating teachers' international professional learning experiences are still extremely valuable to be shared with other researchers and practitioners, as they show the potential of teacher education in international professional learning communities.

Before I report the lessons learned in these early stages of the reciprocal learning project, it is worth noting that the RL project made an effort to strengthen and expand the Canada-China sister school network developed after this study was completed. A handful of elementary and secondary schools in Windsor, Canada formed partnerships with schools in Chongqing, China in 2015. Another school in Ontario was connected with one school in Changchun, China. In 2016, a group of Canadian principals were brought to Chongqing, China to meet their partnering principals and teachers during the third annual general meeting of the project. Some Shanghai participants also attended the annual meeting to share learning experiences. This networking opportunity really boosted learning across partnerships and strengthened the sister school network. These kinds of networking activities were organized and facilitated again

at the fourth annual general meeting in Toronto, Canada in 2017 where some Canadian and Chinese participants met again to share and to discuss next steps of their partnerships. It was also an opportunity for them to be updated on the overall development of the school network and achievements of the RL project thus far.

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CHAPTER 3

What Teachers Can Learn

3.1 Knowledge

The features associated with the knowledge society and globalization not only demand but also facilitate teachers sharing professional knowledge in schools and school networks in the expectation of improving domestic teaching and learning. Teacher knowledge is no longer confined to within schools and the boundaries of countries. In this knowledge creation and sharing process, networking nationally and internationally is a means to disseminating teachers' knowledge and practice. The research has shown that creating and sharing teacher knowledge beyond schools can be realized by building and supporting school networks (Katz, Earl, & Jaafar, 2009) or teacher networks (Lieberman & Wood, 2003). To some extent, the literature related to INPLCs has confirmed that teacher knowledge can be shared through network interactions and that knowledge creation and sharing in networks can potentially enable teachers to change their perceptions and practice (Edge, Frayman, & Lawrie, 2009; Veugelers, 2005). Hopefully, this process can bring out innovations that are close to teachers' practice such that they learn to do things in a different and better way (Hargreaves, 2003).

There are different thoughts on what teachers should know and actually do know in order to teach. Some focus on teachers' practical knowledge that is embedded in their experience while others focus on the conceptual and technical aspects of teacher knowledge that can

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presumably be shared by all teachers. One example of the objective approach to teacher knowledge is Shulman's (1986) conceptualization of pedagogical content knowledge. Shulman argues that in order to teach effectively, teachers need content knowledge related to the specific subject taught, curricular knowledge, and also pedagogical content knowledge. Content knowledge refers to the amount and structure of subject matter knowledge; curricular knowledge refers to the knowledge about the curriculum within which the teachers teach. Shulman differentiates pedagogical content knowledge from general pedagogical knowledge that all subjects share. Pedagogical content knowledge connects subject matter knowledge but "goes beyond knowledge of subject matter [and represents] the dimension of subject matter knowledge for teaching" (Shulman, 1986, p. 9). The current study acknowledges possible sharing of conceptual and technical knowledge by teachers in the two countries when they interact. As well, this study leans towards the more personalized approach to teacher knowledge that underlies the RL project.

Connelly and Clandinin (1984, 1988) contend that what teachers know in order to teach actually goes beyond objective, conceptual, and scientific knowledge because teaching is a knowing action that is "both the expression and origin of the personal knowledge of the actor" (Connelly & Clandinin, 1984, p. 135). They conceptualize what teachers know as Personal Practical Knowledge (PPK) whose content is based on the convictions arising from the particular teacher's experience—intimate, social and traditional—and it is emotional, moral, and aesthetic. They define PPK as "for any one teacher, a particular way of reconstructing the past and the intentions of the future to deal with the exigencies of a present situation" (Connelly & Clandinin, 1988, p. 25). They emphasize that teachers' PPK is actually expressed in educational actions and therefore can be only found in teachers' practice. Moreover, these personal convictions and meanings may change as the person's experience and circumstance change over time. To further conceptualize PPK that is contextualized in teachers' lives and professional experience both in and outside schools, Clandinin and Connelly (1995) introduce a metaphor of professional knowledge landscapes that can help to capture the complex "intellectual, personal, and physical environment" where teachers work and develop their PPK (Connelly, Clandinin, & He, 1997).

The concept of PPK can help to understand teacher knowledge that originates in a teacher's past experience and is reflected in his or her current and future practice. For Connelly and Clandinin, the best way

to depict a teacher's PPK located on his or her professional knowledge landscape is the narrative of the teacher's experience and practice. Within the narrative, they try to capture a range of telling parts that presumably form a "narrative unity," which they explain as "a thread or theme that runs through the narrative of experience" (Connelly & Clandinin, 1988, p. 75). These parts of the whole narrative include images, personal philosophy, rules, practical principles, rhythms, and metaphors that teachers may have drawn on when facing different situations (Connelly & Clandinin, 1988). Methodologically, Connelly and Clandinin (1988) discuss four techniques that can help teachers themselves reflect on PPK and thus help researchers to capture teachers' PPK. The four techniques are storytelling, letter writing, teacher interviews, and participant observation. In the past two decades or so, Connelly, Clandinin, and their associates and followers, have been validating these techniques by exploring parts or whole pictures of teachers' PPK. For example, Clandinin (1985) studied teachers' classroom images; Clandinin and Connelly (1986) and Clandinin (1989) specifically looked at rhythms in teaching; Connelly et al. (1997) investigated a Chinese teacher's aspects of PPK on her professional knowledge landscape; while Tsang (2004) looked into the development of pre-service teachers' rules or maxims for practice.

Although most of the research related to PPK is done within one classroom setting or one school, the concept does hold the potential to expand beyond a single school. Applying the concept in cross-cultural settings, it has been shown that PPK, such as images and metaphors, can be meaningfully created and shared despite educators' personal, social, and cultural differences (Xu & Stevens, 2005). Moreover, the four methods—storytelling, letter writing, teacher interviews, and participant observation (Connelly & Clandinin, 1988)—also suggest that teachers can actually express and share their PPK with researchers and other teachers. Therefore, there is a potential to see the developing and sharing of PPK among teachers in different cultures and education systems when they have opportunities to talk with each other and observe each other's practice. The knowledge embedded in teachers' personal and professional experience has attracted attention in the networked PLC literature (Katz et al., 2008; Lieberman & Miller, 1999; Lieberman & Wood, 2003) in addition to the conceptual and scientific teacher knowledge which can be applied to the whole education system and probably any education systems around the world. I believe that, as far as this study is concerned, in the essentially teacher-led INPLCs created in the context

of the RL project, conceptual, scientific, and PPK can all be expressed, exchanged, and reshaped through collaborative activities such conversation, observation, and joint work.

3.1.1 First Contact with the Other's Education

The Canada-China sister school network opens a window for Chinese and Canadian teachers to view each other's education. Almost all the participating Ontario teachers had little or no knowledge about Chinese education before they started in the Canada-China sister school partnership. It seems that the only source for them to learn about Chinese education was those Chinese students coming to their schools and classrooms. Even the Internet was not a useful tool for Canadian teachers to learn about Chinese education in part because of language barriers and the government's censorship of Google in China. However, Canadian teachers are aware that their Chinese students' accounts of Chinese education might not be reliable. For example, one Math teacher reflected in her interview:

> …just from my students. So, it was just a student perspective…I went on internet to look at different curricula and what's happening there. I wasn't able to find anything about curriculum in China by doing Google. Probably they are not on Google, right? (ET 5[1], Pair 2, Interview)

Shanghai educators do have a lot of opportunities to learn about western education. Nevertheless, almost all Shanghai teachers and principals reported they either knew nothing or little about Canadian education prior to their involvement in the RL project. When Shanghai teachers and principals refer to all education outside mainland China, most of them use an inclusive term "Guo Wai Jiao Yu" ("foreign education"), rather than "western education" or the education of a specific country. Actually, they mentioned a long list of education systems that they have come across in one way or another, including the education of the United States of America, England, Australia, Germany, Korea, Singapore, and even Hong Kong. Chinese educators seem to

[1]Among the thirty-nine participants across these school partnerships, there are eighteen Shanghai teachers (CT), four Shanghai Principals (CP), three Shanghai Vice Principals (CVP), ten Ontario teachers (ET), and four Ontario Principals (EP).

be interested in them all regardless of any possible differences among these "foreign" education systems. To improve their educational practice, Shanghai educators are keen to learn and adopt anything available and useful to them from the education systems in these economically developed countries or regions. In particular, among the list of "foreign education" systems, participants often referred or alluded to American education when they talked about western education. Shanghai teachers view Canadian education as one case that belongs to the broad category of western education. The RL project just offered them the first "window" to Canadian education that "leads to the opportunity of observing western education and culture in general" (CT 14, Pair 3, Interview). In contrast to the frequently mentioned American education, quite a few Shanghai teachers confessed that they "had never paid attention to Canadian education before" (CT 17, Pair 4, Interview).

> I had little knowledge about Canadian education, but I have learned something about American education. It is because American education appears to be promoted in the (Chinese) media often…Little resource about Canadian education was available really. (CT 10, Pair 3, Interview)

Indeed, the newly created sister school network and the teacher INPLCs within the network helped educators in the two countries observe each other's education for the very first time. When teachers engaged in focus activities, talked over Skype, observed each other's teaching through video clips, and exchanged curricular materials, syllabi, and teaching plans, they had opportunities to learn each about other's education system, school environment, classroom settings, and authentic teaching and learning experiences. Given these collaborative activities in the INPLCs, participating teachers can share and reflect on their current knowledge and practice and, in turn, learn new knowledge and practice.

I organized what teachers reported in the interviews about their first impression of others' education into four broad types of teacher knowledge. Primarily, teachers in the two places shared knowledge about features of the others' education system, gained knowledge about ways of teaching, and reflected on PPK (Connelly & Clandinin, 1988) when provided with new information. In the cases of Pair 2 and Pair 3, some teachers borrowed and experimented with featured learning programs from the sister schools, for example, a Tangram course and a Water Science curriculum from one Shanghai elementary school

and an AP Math course from one Ontario high school. However, this kind of curricular knowledge sharing and borrowing is only relevant to several teachers in Pair 2 and Pair 3 owing to their particular collaborations; therefore, I will focus on reporting shared and acquired knowledge about education systems, pedagogical knowledge, and PPK, that apply to all participating teachers.

Since the RL project offered the first "window" to the other's education system, what was learned through the experience seemed to create a new image of Chinese or Canadian education for each individual teacher. Teachers in the two places were impressed by many aspects of the other's education system. For instance, Canadian teachers were surprised by curricular resources in one Shanghai school, a newer and nicer facility of another school, or the situation that Chinese high teachers "always have to have standardized tests in mind." Chinese teachers were impressed by Canadian classroom teachers' autonomy, rich educational resources, "sophisticated student assessments," and equal student-teacher relationship in Canadian education. Quite a few Chinese teachers were similarly attracted by the all-subject teacher or generalist approach in Canadian elementary schools. For example, one Shanghai English teacher said:

> This is the very first time for me to authentically contact with foreign education. It is very different. I found that [in their system] one teacher looks after one class. I am curious to learn more about how it works. In our case, a teacher usually teaches a subject. (CT 17, Pair 4, Interview)

While some new observations of each other's schools and education created a new image, other observed features confirmed previous "hearsay" or imagining of the other's education system. Shanghai teachers were also interested to learn how teachers teach and are evaluated in Canadian schools, how Canadian students learn and do assignments, and how students are assessed, to name a few topics. After their participation in the sister school partnerships, quite a few Chinese participants believed that what they observed just confirmed their previous knowledge of western education since they "have many channels to learn" about it, although what they learned before might not necessarily be Canadian education. Similarly, Canadian teachers observed some main features of Shanghai education, such as "a lot more standardized testing," "the rigor," the hierarchy of teachers, the high secondary school graduation rate, and hardworking teachers and students. These observations also seemed

to verify some Canadian teachers' previous knowledge or imagining of Chinese education. For example, one Canadian Math teacher reflected:

> It gave me the first glimpse because I had zero understanding before. Now I have some understanding. But I understand that I am just at the beginning…I think that system is extremely competitive; here it is competitive, but it is not to the same extent. (ET 5, Pair 2, Interview)

Other than the general factual knowledge about the other's education system, teachers also shared and learned pedagogical knowledge through their collaboration in teaching and learning. Shanghai teachers seemed to have more learning and reflections in terms of pedagogy than their Ontario partners did. When Canadian participants mentioned pedagogies in their interviews, they often reported that they would like to export the Canadian way of teaching rather than learn from the Chinese way of teaching. Canadian participants were more motivated by expected student benefit rather than by their own professional learning through the school partnerships. Based on the interview data, it seems that Canadian ways of teaching are also of interest and appreciated by the Shanghai participating teachers. Quite a few Shanghai teachers observed the differences between the Canadian teachers' teaching, which is characterized by student-centered inquiry and problem solving, and their own teaching, which more or less still features teacher-centered knowledge delivery. One Chinese elementary Math teacher vividly described her Canadian partner's teaching using the problem-solving approach and compared it with her own teaching which is more of a content-centered approach:

> ET 8 and I shared how to teach division at one time. In terms of 2-digit division, I observed that ET 8 and I focused on very different things in teaching. When I taught, I would implement a strict teaching plan. For instance, when teaching 2-digit divisor in Grade 3, I would follow the steps of 2-digit number dividing 2-digit number, 3-digit dividing 2-digit, and 4-digit dividing 2-digit. For ET 8, she integrated her teaching in the process of students' solving real life problems. She paid little attention to knowledge points and learning knowledge points didn't seem [to be] the teaching goal. These real life problems were created in relation to those students in her class. Among these real life problems, there could be integer dividing integer or decimal number dividing integer… (CT 10, Pair 3, Interview)

This type of reflection occurred with other Shanghai teachers too. One secondary History teacher compared the ways of teaching the same History topic between her and her Canadian partner. She realized that the "fundamental difference" is the student inquiry-based learning as opposed to the teacher-centered knowledge delivery approach because "we teachers search for the literature whereas their students do [it by themselves]" (CT 9, Pair 2, Interview). Another Chinese elementary English teacher reflected on her own teaching by comparing it with what she observed in the sister school classrooms in Ontario:

> I think their classes are more open. Their kids have more time to express themselves and teachers are willing to listen to them…In our system…it is difficult to give students as much time as they give students to talk freely. For me, I often just focus on [teaching] correct answers. It is still about content knowledge delivery. (CT 17, Pair 4, Interview)

It seems that the participating Shanghai teachers perceive the observed Canadian pedagogies as a better way to teach than their own teaching practices. They believe that "our system lacks it"; therefore, they would like to adopt these practices. At the same time, they know that "we can't do it here" because of the different circumstances in Chinese education. These Shanghai teachers acutely recognized that sharing and learning through cross-system conversation and observation is one thing, but to make corresponding changes in their own practice is another matter, in the future, requiring input beyond the classroom, which may or may not happen.

3.1.2 Reflection on Personal Practical Knowledge

According to Connelly and Clandinin (1988), teachers' PPK, although personal, is not necessarily private; it can be expressed and shared with other teachers and researchers. Therefore, it can be postulated that Ontario and Shanghai teachers can share, reflect on, and consequently reshape their PPK in the INPLCs facilitated by the Canada-China sister school network. The evidence from teacher interviews validated this postulation. During the interviews, the participants reflected on their personal knowledge after they talked about their first impressions of each other's education. The teachers' reflections revealed how they internally processed the newly acquired knowledge from the other and linked it

to their own knowledge and practice. When teachers talked about their experiences of participation and learning they invoked and reflected on their PPK through images, metaphors, and principles of practice (Connelly & Clandinin, 1988).

Firstly, many teachers used images to compare the education in the two countries. A few Chinese teachers observed the close relationship between Canadian students and teachers; this observation created an image of the "happy" school life of Canadian students. In Pair 3, CT 10 observed that Canadian students "can talk freely and openly" in their teachers' presence while CT 11 said that she found Canadian students have a better personal relationship with their teacher whereas Chinese students experience a "very serious" teacher–student relationship with their Ban Zhu Ren. This kind of "happy" image was also observed by the on-site coordinator in another Shanghai school.

> I remember one student came to speak with the principal when we were having a Skype meeting [in the principal's office]. The student talked to the principal and the principal awarded the student with a candy after their talk. The student left the office very satisfactorily and excitedly. I am impressed because I observed closeness between the principal and students; the student seemed very relaxed to talk to the principal and the principal looks like just one of them. (CT 15, Pair 4, Interview)

For most Canadian teachers, their first real encounter with Chinese education seemed just to confirm some previous images such as rote learning, more drills, competitiveness, and teaching more pure Mathematics. Nonetheless, there are also reports from several teachers who were really impressed by the new image of Chinese education that they learned through the sister school network. Shanghai education and schools are definitely changing although they are not as "relaxed" and "happy" as Ontario schools are in the eyes of Shanghai teachers. Through video clips from the sister school and Chinese partners' descriptions, ET 10 in Pair 4 was "struck" by the realization that "there aren't a lot of differences" between her school and the sister school because she observed that "we are teaching our kids skills…not just learning skills but social skills that are going to support them as they continue on in their life. They love their children just as much as we love our children…" (Interview). For the Canadian teacher in Pair 3, the information she received from the sister school completely changed her image of Chinese education.

> My head is now filled with very different images of the Chinese education system based on the pictures that you [have] been bringing back and the interactions [with the sister school]. Their science rooms, their communal reading nooks in the hallways, books, even the outdoor spaces are just not that idea of the institutional image that I had. (ET 8, Interview)

Secondly, quite a few Shanghai teacher participants reflected on their practical principles following their new observations of Canadian education. Since the two elementary school pairs had been exchanging students' work and photos, the way in which Canadian schools treated students' privacy and rights impressed Chinese teachers greatly. A few Chinese participants talked about this matter and said they definitely learned something from the experience. The following comment is representative.

> [We also learned] the consideration of respecting students' privacy when transmitting photos. We didn't seem to pay attention to this matter before. We didn't need to request consent from parents in our context. Now we realized we need raise our awareness of students' human rights and legal rights. (CT 14, Interview)

Several Chinese teachers expressed their belief that Canadian ways of teaching might work against their practical principles fitting in the Chinese context. For example, comparing to student-centered teaching in the sister school, two secondary school teachers reported an unwritten rule that Shanghai teachers have to follow in order to prepare students for Gao Kao.

> We think more about other educational needs for students in Grade 10 and 11 whereas we have to shift to Gao Kao preparation in Grade 12… [Only in Grades 10 and 11] to make our class teaching more interactive and interesting, we use methods other than chalk-and-talk…like student inquiry on some certain topics. (CT 9, Pair 2, Interview)

The practical principles that Shanghai teachers invoked can be understood against the current situation and environment of Chinese education. Many standard-based tests and examinations and big class size are still prominent features of Shanghai school education. One secondary school teacher, CT 5, expresses his belief that good Mathematics teaching should balance delivering content knowledge and cultivating ways of

mathematical thinking. However, he is restricted by the "baton" of Gao Kao, although he observed from his Canadian partner's teaching that this balance can be achieved through daily teaching. Elementary teacher CT 10 reflected that her authoritative way of teaching is "good from the perspective of efficiency," although she sees it is not helpful to cultivate creativity. Similarly, another Math teacher thinks that her students "could be in chaos" if she borrowed the student-centered inquiry-based way of teaching from her Canadian partner teacher.

> [The] notes of [her] teaching are helpful. They offered us an opportunity to observe each other's regular class teaching…[but] I felt that I wouldn't be able to control the class if I used her way of teaching…If my students were taught in that way, the class could be in chaos. (CT 11, Pair 2, Interview)

Thirdly, teachers also used metaphors in their reflections on the differences between Chinese and Canadian education. One Canadian teacher imagines the difference between Chinese and Canadian education is like two positions along the trajectory of a pendulum moving from "very strict" to "children talking and interactive" (ET 9, Pair 4, Interview). One elementary Chinese Science teacher compared his teaching in his Science class and in an Inquiry Curriculum (IC) course with his all-subject Canadian teacher partner's classroom teaching. He felt that his own teaching is like "sprinkling pepper seasoning" because of the limited teaching hours per week, whereas his partner can "focus on her 20 something students" since she is always "with the students in the classroom for a long time" (CT 13, Pair 3, Interview). CT 10 in Pair 3 also reflected on her own knowledge-delivery approach to teaching compared to her Canadian partner's inquiry-based teaching. She thought her own teaching is like "battling in corps" in which "certain knowledge points must be taught and learnt" at certain time, whereas her Canadian partner's teaching is a "guerrilla warfare" because "they are not in a hurry" and "they would come back to a certain point that had been discussed" even a few days later (Interview). These interesting metaphors helped teachers make sense of the ways of teaching on the other side compared to their own practice. These comparisons and realizations became part of teachers' PPK. Also, those images of the other's education and reflections on practical principles, given the new observations from the sister school network, reshaped participating teachers' PPK.

3.1.3 Shanghai Teachers' Dissonances in Personal Practical Knowledge

Compared to Ontario participants, it seems that Shanghai teachers more likely experienced challenges and dissonances in their practical principles and existing knowledge in the face of new information from Canadian sister schools. In interviews, the Chinese teachers talked about perceived challenges and dissonances more than their Canadian partners did. Based on the interview data, only few Canadian participating teachers mentioned minor dissonances with the current Canadian education when they talked about their observation of Chinese education. Moreover, these small dissonances as a result of their new observation did not seem to challenge these Canadian teachers' current practice. For instance, elementary teacher ET 9 commented that Canadian education "did a great job of helping children feel good about doing badly" and "doesn't do a great job of teaching skills and knowledge" (Interview). Similarly, secondary teacher ET 2 reflected that "we need to put more into our curriculum. The kids need to learn more. I think that by seeing what's happening in China, we can become aware of how little our students know compared to the Chinese kids" (Interview). Despite these minor concerns, the Canadian teachers did not express any intention to change.

Conversely, for many participating Shanghai teachers, the newly learned or verified knowledge of Canadian education or western education created real challenges related to their current knowledge, practices, and beliefs. These observed pedagogical disparities or other differences between the two education systems prompted some Shanghai teachers to critically reflect on their own practice in the hope of change.

> Now our kids are very tired and out teachers are tired too. We see they [sister school students] are happy and relaxed in classrooms. We need to reflect on this difference. We can't just bury our heads in the current work and finally achieve something satisfactory through a painful process. We might be able to find a way to enjoy what we are doing and equally achieve the same results. (CT 2, Pair 2, Interview)

> For example, student privacy…Now we realized that we should raise our awareness in this regard. We are just starting to have this kind of regulations and awareness in China; but we don't really follow. To my surprise, they seem to implement the regulation very strictly. (CT 16, Pair 4, Interview)

Based on their reflections during the interviews, it seems that many Shanghai teachers are somewhat unsatisfied with the current situation of Shanghai education. They expressed a willingness for change; however, at the same time, they realized that the obstacles in the education system that prevent change might be unsurmountable. In particular, it is worth pointing out that Shanghai secondary school education seems to be much more examination oriented than the elementary education. In the two secondary pairs, all Chinese subject teachers reported the dilemma they face between the restrictive reality and these new observations in the sister school partnerships. For instance, the Chinese IT teacher in Pair 1 wonders why Canadian students in the sister school "can be so engaged" in using technology to learn whereas the students in his own school "are not excited about using tablets" (CT 1, Interview). Ironically, the Shanghai high school where he works has a comprehensive online learning platform, makes tablets available for every student, and provides students with a lot of digitalized resources. After I reviewed the online platform, I realized that the problem that causes students' lack of interest is probably not the use of technology but the content. I found that all the resources on the platform are designed for test and examination preparations; basically, they are just digitalized test and exam papers with teachers' written or oral explanations.

Similarly, in Pair 2, one Physics teacher (CT 6) complains that his students do not "engage in autonomous learning" due to the lack of connection between classroom learning and real-life problems. From his observation, problem solving is precisely the approach that his Canadian partner uses in teaching Physics. Unfortunately, he could not do it due to the prescribed curriculum and the pressure of Gao Kao. One Shanghai Math teacher provides a similar account. He believes that Mathematical modeling is very important to high school Math study. However, he does not have a chance to teach it. He reflected in the interview: "It [Canadian Math curriculum] requires the thinking of mathematical modeling. In our Gao Kao, all questions are abstract and of pure mathematics. Our students don't need to deal with mathematical modelling because math models are provided [by the questions]" (CT 4, Pair 2, Interview). One History teacher felt her teaching is "utilitarian," referring to the approach of Gao-Kao-centered learning and preparation. She then lamented that: "We need to develop towards their approach; however, it is a long way to go" (CT 9, Pair 2, Interview). These Shanghai teachers' new observations as a result of their participation in the sister

school collaboration challenged their personal practical principles that suit the current context of Shanghai education but do not necessarily fit their personal beliefs. Changes in practice might not take place immediately, but it can be surmised that these Shanghai teachers will be ready to change if favorable circumstances occur.

3.2 Practice

3.2.1 Current Practice as the Ground or Constraint for Change

In the Canada-China sister school network, it is evident that teachers in both countries tended to incorporate collaborative activities in the international networked professional learning communities into their current school work. From a practical point of view, this approach makes it easier for teachers to participate in INPLCs as they work in schools. As far as teacher learning is concerned, this kind of job-embedded professional learning is also more effective than other approaches such as once-for-all seminars. Another benefit of this approach is that teachers can readily connect their new learning with their practice.

In Pair 1, the proposed student exchange program is considered by the participating Canadian teachers as an extension of an ongoing Mandarin program in the school. In Pair 2, Canadian teachers shared their ongoing classroom teaching with Chinese teachers while Chinese participants tried to connect with their partners' practice using existing or newly developed Extended Curriculum (EC) courses. For instance, CT 5 used his EC course about TI calculators as the point of collaboration with his Canadian partner, while CT 4 opened a new EC course about AP Math after he learned about this course from the Canadian school. Similarly, CT 7 said that he would like to start an IC course on "Physics in real life" in order to collaborate with his Canadian partner since he believes that it is impossible to "change anything in what we teach in regular classes because the target is still Gao Kao" (Interview). In the two elementary pairs, both Chinese schools linked the featured educational programs of their schools with the collaboration with their partner schools. In Pair 3, the Chinese side presented to the sister school their established curriculum on Water Science education and its tradition in the school, practice, and student achievements. In Pair 4, participating teachers and principals purposefully linked sister school activities with their longitudinal pursuit of International Understanding Education

(IUE). The on-site teacher coordinator of the sister school project elaborated:

> Our school emphasizes International Understanding Education (IUE) and we conduct a study about it. English is also a feature of our school. [In this way], we hope to broaden channels towards international exchanges…The [IUE] curriculum is divided into sub-learning activities such as…'Going to America'…we hope that students can learn more and more knowledge of traditions and cultures of all the places. (CT 15, Interview)

On the Canadian side of the teacher communities, the participating teachers in the two Ontario elementary schools creatively designed the content and activities for their ongoing classroom teaching and learning in a way that could collaborate with their sister schools. ET 8 taught according to the Ontario Math and Science curriculum and incorporated a Water Science unit when she collaborated with the sister school. ET 9 and ET 10 taught English Writing and Social Studies when they partnered with the sister class in Shanghai. One of these teachers reported referring to the pen-pal activity and movie commentary activity:

> We use part of our writing program. Children in Grade 6 have to be able to write in a variety of purposes. Certainly communicating, writing letters, and communicating with emails electronically are expectations of our writing program. In Social Studies…[we focus on] developing understanding of the global community…similarities and differences between our country and other countries, [and] how Canada is viewed on the world stage. (ET 9, Pair 4, Interview)

Comparing Shanghai and Ontario schools, the different curriculum structure and organization of teaching and learning of the two systems results in different approaches to linking sister school collaborations to classroom activities. As I mentioned in Chapter 2, in the current Shanghai curriculum structure, there are three types of curriculum: Basic Curriculum (BC), EC, and IC. While courses in BC take up the most time in the school schedule, EC and IC courses usually occur only one or two periods per week in the hope of fostering extra learning interests and developing skills that might not be gained in BC. Under the new curriculum structure, extracurricular activities can be readily incorporated into the school curriculum in either EC or IC, whereas Ontario teachers can clearly separate curriculum teaching and extra-curriculum activities.

For instance, a students' environmental club in one Shanghai high school probably appears in the school timetable as one EC class, whereas in one Ontario school, it is a student club for which students and their supervisor meet outside the regular teaching time. Thus, for Ontario teachers, they either chose to incorporate the sister school collaboration into their work in regular classes or just regarded it as an extracurricular activity, depending on what they and their Shanghai partners had decided to do. For Shanghai teachers, they had to switch to EC and IC courses that they were teaching or could teach when they considered activities in the INPLCs alongside their current work in the school. They found that it was impossible to connect sister school collaboration with existing BC classes, as the rigidness of the BC made it "very hard to move things around."

For instance, in the elementary school Pair 3, the Water Science education project became a collaboration between the Canadian teacher's regular Ontario science curriculum whereas an existing IC class in the Shanghai sister school only met a group of interested students from multiple classes one hour per week. In the secondary school Pair 2, the Eco-school student club was an extracurricular activity in the Canadian school, whereas it was expected to become a school-based IC course in the Chinese school. In the same pair, the two collaborations in the area of Mathematics are between the teaching of regular curriculum in the Canadian school and EC courses in the Chinese sister school. The administrators of the Chinese school in Pair 2 also felt that EC and IC courses are the "only area where we can do something" with respect to the sister school collaboration due to the rigidness of BC courses in Shanghai secondary schools. The on-site coordinator in the Chinese school commented:

> We want to find some useful content or materials that can complement our teaching through international exchanges. We cannot overturn the existing Chinese curriculum and textbooks but we can explore [it] in EC and IC classes. (CVP1, Pair 2, Interview)

It seems that Ontario secondary school teachers also feel pressure from nonnegotiable curricular requirements although the level is different compared to their Shanghai counterparts. For instance, one teacher who is the Math department head reports that due to "a designated curriculum given to us…I don't know [if] we are allowed to do [anything]

outside from that" (ET 4, Interview). This kind of constraint might partially explain why these Ontario secondary school teachers were not able to incorporate the sister school collaboration into their current teaching activities. They were very happy to share their practices but reluctant to experiment with new ideas that they learned from their Shanghai partners.

The situation is quite different in Ontario elementary schools. The extent to which Ontario elementary teachers can manipulate the curriculum is impressive. These participating Canadian elementary teachers reported "liberty" to "bend the curriculum," compared to Shanghai teachers' perceived rigidness and the impossibility of altering their teaching in BC courses. The way in which Canadian elementary teachers incorporated the sister school activities into their ongoing teaching practice truly shows the freedom they enjoy when they implement the curriculum. Moreover, Canadian teachers are aware of this "liberty" and embrace it, which creates a favorable condition for their participation and collaboration in the Canada-China teacher learning communities. Two Ontario elementary teachers described their similar understanding and approach of curriculum implementation.

> We have obviously the big ideas and expectations of the curriculum document. But our curriculum expectation, especially in Science and Social Studies are more umbrella like expectations. It allows teachers to follow the inquiry-based learning. (ET 8, Pair 3, Interview)

> Oh, quite a bit [of autonomy]…obviously we have curriculum to be covered, but if we talk about [for instance] social justice issues, we start to talk about child poverty, I think it would be very easy to start doing some research about what are experiences for children in China. You can continually connect in some way to our sister school…we've got flexibility in how we go about incorporating that into their learning. (ET 10, Pair 4, Interview)

On the one hand, some features of the current practice in these schools in both education systems provide the ground for change; on the other hand, the existing domestic teaching and learning requirements also constrained the partnership's impact on teachers' practice. For Canadian participants, they did not feel obliged to apply anything learned from the sister school network to their teaching practice unless they became personally interested in modifying their teaching for the benefit for their

students. As a result, some of these Canadian teachers experimented with new ideas while some others just played with ideas since their existing responsibilities or the progress of sister school activities did not permitted them to implement them. They wished that one day they could "do a project" (ET 2, Pair 1, Interview) or "work them into…classroom activity" (ET 7, Pair 2, Interview) in the context of the sister school network.

For Shanghai teachers, the dissonances and dissents they experienced because of learning in the Canada-China teacher communities did not necessarily lead to practice change either. They seemed to run into more constraints on change than their Canadian counterparts. While Ontario elementary school teachers reported some autonomy in implementing the curriculum in a way that accommodated sister school activities, Shanghai teachers found that they were "not able to do these things" because of unsurmountable systemic constraints. After all, what Shanghai teachers observed through the sister school partnerships, such as problem solving, inquiry-based learning, student-centered teaching, and all-subject-teachers, are not the mainstream practices in Chinese schools. At the same time, the Shanghai teachers do believe that these approaches can complement and hence improve current Shanghai education. It is also true that some of these approaches are gaining momentum in IC and EC courses in Shanghai schools.

The dilemma that Shanghai teachers face is that on the one hand, they have a lot of opportunities to be exposed to western practices that they believe worth learning, including the learning in the Canada-China sister school network. On the other hand, the current circumstances of Chinese education do not seem to allow them to apply too much of what they learned. For example, one Shanghai teacher believes that the all-subject teacher approach to teaching "can teach in a more comprehensive way" and that such teachers "may have more flexibility" in educating students. However, she knows that she "can't do this here" because of the existing way of organizing classes in the school (CT 16, Pair 4, Interview). One Science teacher complained about the limited application of inquiry-based learning to his IC classes. Too many students and too little teaching time per week did not allow him to guide students' inquiry sufficiently (CT 13, Pair 3, Interview). In particular, for Shanghai secondary school teachers, the high pressure of Gao Kao and students', parents', and school administrators' expectation of high examination scores constitute the "current educational environment" in

Shanghai that prevents teachers from innovating despite having learned from their participation in Canada-China teacher communities and having some "thoughts" or "realizations." For instance, one Math teacher stated that "no one would dare to experiment with innovations in regular classes" because "BC courses are directly linked to Gao Kao" (CT 5, Pair 2, Interview). His view resonated with other Shanghai high school teachers.

> [I] do have some realizations [after sharing with the sister school]. But [I] can't jump out of the Gao Kao system. Within the system, I must place the greatest weight on test scores. I have to have students pay attention how to apply knowledge in exams instead of real interest on learning. (CT 6, Pair 2, Interview)

> For Chinese students, History is a minor subject… not counted in [the] Gao Kao result[s]. So, it is impossible for them to spend time outside classroom…Canadian students write research papers outside classroom…We can't do this here. (CT 8, Pair 2, Interview)

In addition, the school administrators of these Shanghai schools did not seem to expect too much change as a result of the sister school partnerships either, although they expressed their interest and support all the time. For instance, the VP of the Chinese school in Pair 2 resonated with her teachers. She believed that linking sister school activities with the teaching and learning in BC courses is "impossible" given the current educational circumstance in the school and in Shanghai. The school administrators of the two Chinese elementary schools expressed similar opinions. They believed that teachers' participation in the international school network is more for broadening horizons than for "immediate outcomes" as to the current teaching and learning (CVP 3, Pair 3, Interview) and that teachers' involvement could "enable them to broaden their view of education and learn new ideas" as far as teachers' professional growth is concerned but would not "directly impact or improve their current teaching" (CP 4, Pair 4, Interview).

3.2.2 Real Impact on Practice

Given the aforementioned conditions for and constraints on substantive change, there are two ways in which teachers' participation in the

Canada-China sister school network influenced their work. That is to say, impact on practice as the result of INPLCs is possible. First, some teachers took immediate actions because of the exchanges and collaborative activities in the Canada-China teacher communities, as these activities were essentially designed to be linked with teachers' current work in one way or another. Except Pair 1, in which the two attempted initiatives were not carried out successfully, the other three school pairs all witnessed additional educational activities or curricular elements as a result of their participation in the sister school network. In Pair 2, one Math teacher (CT 4) opened a new EC course in the Chinese school given the support from his Canadian partner (ET 5). An AP calculus textbook alongside an exercise book was delivered to Shanghai after ET 5 introduced CT 4 to the AP Math course in the Canadian school. The introductory AP Math EC course was opened to some interested students in the Shanghai school over one semester. In the interview, the teacher who taught the course talked about his experience.

> I had never taught Math in English before. I first needed to learn those Math terminologies…I needed to check them up. I asked English teachers…AP calculus, [it] seems to me, places much weight on application. There are many problems related to real life experience… To make it useful for our students…we must connect it with our domestic curriculum. Teaching [Math] all in English is not applicable. Also, we might have to use our way of teaching; at the same time, we borrow their application problems. (CT 4, Pair 2, Interview)

On the other side of Pair 2, one Social Studies teacher (ET 3) took advantage of the partnership and converted a student survey on gender norms in a Social Studies course into a comparative project by asking her students to include Chinese students in the partnering Shanghai high school as survey participants. At the beginning of the third project year, one Math teacher (ET 5) also started incorporating one TI calculator task that she learned from her Shanghai partner CT 5 into her teaching (Project Communication, February 3, 2016).

In Pair 3, the participating teachers on both sides picked up what they needed from their exchanges and incorporated what they learned into their practice. The Chinese school was "inspired by the sister school' and "organized a very big Christmas celebration" after the Canadian school shared their experiences of celebration. The principal and several teachers

talked about this "big" event during their interviews. The English department of the Shanghai school took responsibility for planning and organizing the school-wide event; a big Christmas tree was made using recycled materials by involving the Science department of the school; and parents were invited and one of them played Santa Claus. One Ban Zhu Ren felt it was "easy to participate" in this kind of event linking to the sister school partnership because she could easily "combine the project into the existing work" (CT 12, Interview). The on-site coordinator in the Chinese school echoed:

> As such, the sister class activities become part of the existing education. For students, this new element increased their sense of responsibility attached to their learning. At the same time, they learned some new things. (CT 14, Pair 3, Interview)

On the Canadian side of Pair 3, the Canadian teacher proactively adopted and adapted what she learned from the sister school. She designed a Math teaching unit by incorporating an innovative type of Tangram that she learned from one of her Chinese partners (CT 11). She managed to purchase several sets of the Tangram from a Chinese website and used them in her teaching to help students "to explore geometrically different shapes and regular shapes, commonalities and differences with different diagrams, and then did some artworks on those" (ET 8, Interview). Subsequently, she shared her teaching and students' learning with her Chinese partners. Following the Tangram activity, she continued to embark on another larger and longer teaching unit that was inspired by the Water Science education of the Chinese sister school. With the assistance of several researchers and volunteers, she taught a full unit of Science curriculum around the water theme. Inspired by an "amazing" water exploration center in the sister school, her classroom was decorated to become a watery wonderland in order to highlight the learning theme. Students were assigned to groups and each group was asked to conduct a unique learning project on water. Students then had opportunities to present their designs and findings not only to their classmates but also to other classes in the school and to some students from a neighboring school. At the end of the Water Science teaching unit, the two schools managed to organize a summative videoconference for students through Skype. During the culminating learning activity, students in the two schools jointly explored a water shed in the Chinese

side and worked on some experiments about the surface force of water. The Canadian teacher talked about her realization in her interview, and her principal was obviously impressed by the efforts she made and by the impact of these activities on both students and teachers.

> …having them put that event on for the school, the idea that the Grade 4 and 5 students [in this school] have that water culture of the sister school, and what we can do for our school…sort of emulating that learning here. (ET 8, Pair 2, Interview)

> I think our kids did get something out of it…They are getting higher thinking skills…I think my teacher got something out of it because she was constantly learning and adjusting things so that the collaboration and partnership would grow…I think some teachers now want to get involved, because there are a lot of things [that] came out of this. (EP 3, Pair 2, Combined Interview Excerpts)

In Pair 4, several participating teachers also reported modifications of their teaching. For instance, the movie commentary activity designed by the Canadian side was supposed to accommodate the collaboration between the two partnering schools on the one hand, and to fulfill the Ontario curricular requirement of media literacy on the other. One of two Canadian teachers explained why she and her teaching partner (ET 9) chose to teach the movie commentary as the collaborative activity.

> Honestly, it was because we are doing this partnership. We need something that we could both do. We did commercials, we did radio, and I guess we could do something using the internet. But this [movie] is something kids are wanting to do, they love movies, so they will be engaged right away, and something that we can both do. (ET 10, Pair 4, Interview)

For the Chinese side of this pair, there is evidence of some impact on teaching practice too. The principal of the Chinese school talked about how sharing students' artworks created learning opportunities for both students and teachers. In her interview, she mentioned that students in her school were asked by teachers to write descriptions for traditional Chinese artworks that they created in art classes because these works would be exchanged with the Canadian sister school. Using these descriptions, the students explained to Canadian students and teachers the ideas and Chinese culture behind their works. She believes that the students needed to research and learn more about their own culture

before they could effectively present their works to others; therefore, writing these cultural descriptions was an additional learning opportunity for students in these art classes. The Canadian side also adopted this creative idea and practice when they exchanged back students' artworks at the beginning of third project year. The pen-pal activity of this school partnership influenced one Chinese English teacher's (CT 14) teaching as well because she was so impressed by the Canadian students' "little poems" that were shared by her partners. Consequently, she encouraged her students to write little poems in English, as she believes that her students can do this too.

There is some evidence that shows that the participation in these Canada-China INPLCs may impact teachers' thinking about their work although substantive changes in practice may not have occurred. Quite a number of participating teachers have not taken concrete actions in a way that modifies their current teaching practice or educational activities under their supervision. In fact, they have not had the chance to transfer their participation to action due to their pressing domestic responsibilities or certain organizational constraints in their school networks. For instance, several initiatives between sister schools had not reached the stage of implementation before they had to be paused or terminated due to unexpected circumstances such as a teacher's leave or the difference of vacation time between the two education systems. Regardless of these setbacks, the impact of the INPLC experience on some teachers' view of teaching and learning is not negligible.

> Speaking of my teaching in Basic Curriculum classes, I would like to make more practical links for my students when we talk about certain Math topics. Probably I can transmit this way of thinking to my students so that they wouldn't be confined to pure and theoretical Mathematics. (CT 3, Pair 2, Interview)

The Canadian History teacher in this pair also said enthusiastically that she would do "something that is truly cross-cultural at the student level" if conditions permitted (ET 7, Pair 2, Interview).

> I think we can learn from each other…her way of setting up class rules in advance is very impressive. I can incorporate her approach into the planning of my work, although I still believe that laws and rules are also based on people's relationship. (CT 10, Pair 3, Interview)

While CT 10 commented on her Canadian partner's approaches to class management from a Chinese cultural point of view, a Math teacher in the same school reported in her interview that she definitely "taught classes by a higher standard" so that she could readily share the work with Canadian teachers when needed (CT 11, Pair 3, Interview).

3.2.3 Pedagogical Shift and Student Growth

There is no doubt that improving teaching and benefiting students are two main motivators for teachers to be involved in professional learning. The teachers in the Canada-China sister school network who made substantive modifications in their practice provided evidence of potential pedagogical changes in these classrooms. Most noticeably, the way of teaching and learning in these classrooms is shifting towards a pedagogy involving international learning partners. The comparative study survey and a postponed joint student work competition using TI calculators in Pair 2, the Water Science project in Pair 3, and the movie commentary and pen-pal activities in Pair 4 are all examples that demonstrate how Ontario teachers managed to bring their students' Chinese learning partners to Canadian classrooms. This pedagogical shift not only brought a "global view" into these classrooms but also facilitated student collaboration in an international setting.

> In some ways my perspective and purpose for teaching has grown bigger as a result of it all. I think I feel now more driven towards the idea of collaboration within a classroom and between schools, between countries and also having a far more environmental [perspective]. (ET 8, Pair 3, Interview)

> I really want them to get something out of the movie, but also get something out of reading what their pen pals had said about it. It was very purposeful…It would be nice then following the pen-pal letters and actually having the kids to talk to each other about it. (ET 10, Pair 4, Interview)

On the Chinese side of these partnerships, teachers and school administrators also reported on how the way of teaching and learning in their schools is influenced by sister school collaborations. For instance, the Chinese principal in Pair 3 observed that one of the participating teachers combined some sister class activities into her existing student learning activity series. The teacher modified an activity of studying traditional Chinese festivals into a collaborative activity involving the Canadian sister class.

> Now with sister class, our students have a new sense of responsibility because they need to describe the holidays for their friends in the sister school. Our students now prepare the holidays with a clearer purpose. (CP 3, Pair 3, Interview)

In Pair 4, the on-site coordinator in the Chinese school observed a similar pedagogical shift in teaching the school-based IUE curriculum.

> Before, we introduced some general information of certain places around the world… Now, we realize that cultures of foreign countries can also been learned through direct communication and collaboration between students. Students are more engaged in the second approach, in this way they don't learn things superficially any longer. (CT 15, Pair 4, Interview)

In particular, the participating Shanghai Math teachers implied another kind of potential pedagogical change in their interviews. Among all the Chinese participants, there are three Math teachers in Pair 2 and two Math teachers in Pair 3. After these Math teachers observed their Canadian partners' teaching, which is characterized by problem solving and student inquiry-based learning, they attempted to adopt this way of teaching and learning in their own classrooms. In Pair 2, CT 3 would like to "make more practical links" in his teaching of BC courses while CT 5 would pay more attention to problem solving. CT 4 also reported he tried to design a "project assignment" inspired by his Canadian partner's teaching; however, his attempt was held back by the school administration because the school required him to "test the student" at the end of the experimental AP math course. The two elementary Math teachers also talked about their realizations about the way of teaching Math. CT 10 said that she is trying to provide her students with "a relatively casual learning environment" and encourages her students to express their own thoughts in classes. CT 11 reported that the sister school partnership influenced her teaching to some extent and she observed a good effect: "In the process of teaching or sometimes before teaching, I would like to leave students some time for their thinking and doing independently. I observed that students have deeper understanding…" (Interview).

These aforementioned additional curricular elements and pedagogical modifications resulting from the Canada-China INPLCs may bring about changes in student learning that benefits students. In their interviews, Chinese and Canadian participants talked about their observations

of students' growth as a result of their involvement in the sister school activities alongside their teachers. Firstly, students may improve their global competence. Global competence, according to a document published by the Asia Society, can be defined as "the capacity and disposition to understand and act on issues of global significance" (Mansilla & Jackson, 2011, p. xiii), and it contains four core elements including abilities of investigating the world, recognizing multiple perspectives of self and others, communicating ideas, and taking actions to improve. Given that many topics of these sister school focus activities are about current issues in the rapidly changing interconnected world, students' learning achievement on global competence is obviously relevant and important. In Pair 2, the two principals reported a common observation after the student environmental groups in the two schools interacted through Skype.

> When they did Skype conference…, they were excited, they were thrilled, they were highly motivated. And it's just amazing to see my students… can do something together with another group of students that are so far away…it's inspiration for them to become global citizens. (EP 2, Pair 2, Interview)

> For students from the two sides, they not only enlightened each other on how to do the project but also inspired each other since they see other people across the Pacific doing the same things. It increases their confidence. (CP 2, Pair 2, Interview)

In Pair 4, the two Canadian teachers chose Avatar for the movie commentary activity because they thought the theme of movie, which is about human conflict and the use of natural resources, is relevant to developmental issues in contemporary China and the world (Project Meeting minutes, April 2, 2015). In their interviews, both Canadian teachers reflected on their students' growth after students participated in the sister school activities. Both believe that students gained skills to make connections and communicate with Chinese students and that in the process, they improved understanding and appreciation of the other people and culture. In particular, one of them believes that being involved in this Canada-China school partnership made his students non-judgmental when they look at China because they are able to "see the country more holistically."

> [Students in] both schools recognized kindness, generosity, determination, trust, and strong characters, all of these great characteristics [in the movie]. That was important for our students to see that our values in education component and in character development and that strength in people are similar in both schools. (ET 9, Pair 4, Interview)

The Chinese side of Pair 4 also reported observed student growth. The homeroom teacher (Ban Zhu Ren) of the sister class (CT 16), her assistant homeroom teacher (CT 17), and the on-site teacher coordinator (CT 15) in the Chinese school all talked and were excited about their observations in their interviews. The on-site coordinator summarized the experience in the following way:

> I feel that the project pushed our kids to change. At the beginning, our students felt that it would be very hard to communicate with kids in a Canadian school due to huge differences. As the communication went along, they don't worry about difficulties any more…Our students are more open to express their thoughts and their view is broadened. This is the most excitement I feel. (CT 15, Pair 4, Combined interview excerpts)

The two teacher partners in Pair 3 who have been working on the Water Science learning activities share this kind of excitement for student growth. Referring to the summative student videoconference on Water Science between the two schools, CT 13 observed that his students "really enjoy the event because they had the opportunity to communicate and collaborate in depth with students there" (Sister School Meeting minutes, September 1, 2015). His Canadian partner observed her students' similar gratification owing to the internationalized learning experience:

> That really validates some of the project work that they [her students] had done. And I liked how seriously all the children took it…they became less aware of the fact that they were being watched doing it and more focused on the doing of it. (ET 8, Pair 3, Interview)

Other than global competence, students may also learn cultural knowledge when they participate in the international sister school partnerships alongside their teachers. This observation is more evident in the two pairs of sister elementary schools. That both Canadian elementary

schools have many low income, new immigrant families not only motivated these Canadian teachers to participate in the first place but also made teachers and students especially appreciate the international learning opportunity. Low income, new immigrant parents are usually "working really, really hard" or "working two, sometimes three jobs." Therefore, they are not "able to be as involved in the school" (ET 8, Pair 3, Interview), not able to spend "a lot of time at home with their children," or do not have time to take kids "to different parts of the city…even though we have a very multicultural city" (ET 10, Pair 4, Interview). The Canada-China school network broadened these Canadian students' cultural horizon as they "asked lots more questions about China and about school" when they interacted with Chinese students and teachers in the sister schools. Similarly, CT 12 in Pair 3 also reported that most students in her class are "from migrant workers' families," which implies low socioeconomic status in the Shanghai context. She was glad to see her students, who "might not know Canada before," learn something about the country, such as the Easter Holiday, and the city where the sister school is located. The children in the Chinese school in Pair 4, who are from a relatively affluent community, also learned about Canadian culture and schools through the partnership. This cultural learning is regarded as an extended element of the IUE curriculum of the school according to the participating teachers' understanding.

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CHAPTER 4

How Teachers Can Change

4.1 Motivation

Teacher motivation has been studied in the research on teacher professional learning and development. For example, Rosenholtz (1989) shows how different types of technical cultures in schools impact teachers' beliefs and motivation regarding professional learning and growth. Eun (2011) argues that the investigation of professional development must pay attention to teachers' academic, emotional, physical, and motivational aspects and that these elements constitute an inseparable system influencing teachers' learning and practice. In order for teachers to participate in new learning opportunities outside their existing responsibilities, they need to have good reasons to invest their extra time and energy. Only if teachers interpret the learning opportunities and possible changes of practice as being practical and useful for either gaining new knowledge and teaching skills or improving students' achievement, will they take the risk to learn and change (Timperley, Wilson, Barrar, & Fung, 2007). Moreover, teachers are adult learners. Therefore, teachers' motives for learning are more likely tied to the problems that they face in their professional experiences (Knowles, 1973). Teachers bring their past experiences, knowledge of teaching, and beliefs into their current professional learning and the interplay of these elements may or may not prompt teachers to adopt new knowledge and practices, depending

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on complex personal, organizational, sociocultural, and policy factors (Opfer & Pedder, 2011; Timperley et al., 2007).

For the purpose of developing and sustaining teacher professional learning communities (PLCs), it is also worthwhile to take teacher motivation into consideration. Roberts (2006) critiques issues that have been ignored by the community approach to learning including individuals' predispositions to knowledge, actions, and change. Certain predispositions can create resistance and disincline community members' motivation to form an identity in line with a new community of practice (Mutch, 2003). Within teacher communities, a "balkanized" learning culture can hinder teachers from looking at new resources (Hargreaves & Fullan, 2012, p. 115), while prescribed PLCs do not seem to motivate teachers to collaborate and hence learn from each other (Hargreaves, 2010). International research also confirms individual teachers' motivation regarding the operation and sustainability of teacher PLCs (Sargent & Hannum, 2009) and shows that educators are attracted to international school networks for sharing culture and resources, learning new teaching methods, building personal connections, learning and developing alongside international partners, and benefiting student learning (Edge, Frayman, & Lawrie, 2009; Edge et al., 2008). In this study, given the wide differences between Canadian and Chinese schools and teachers, it is valuable to investigate and compare reasons at both personal and community levels, which motivate educators in the two countries to take up and embrace extra cross-boundary learning opportunities.

There are multiple factors affecting motivation for learning such as task value (Pintrich, 1989), individual intrinsic interest (Schiefele, 1991), personal goals (Ford, 1992), or perceived self-efficacy (Bandura, 1997). These psychological factors do not act singly, at one time, to affect motivation for learning; they can interact with sociocultural situations within which people live. Bandura (1986, 1989) verifies this observation and stresses that people influence their own motivation and behavior within a system of reciprocally interacting personal determinants, actions, and environmental factors. Basically, both extrinsic factors outside the person and intrinsic factors within the self-need to be taken into account. In the case of this study, teachers might be attracted to participate in exchange activities in a school network because of their interpretations and opinions about the importance, degree of interestingness, and utility of these activities (Pintrich, 1989). The learning activities can also be appealing to a teacher because of personal interest which gives the teacher

an orientation toward certain objects, activities, or areas of knowledge (Schiefele, 1991). According to Bandura (1997), a person's belief about what they can do under certain conditions affects his or her motivation for taking actions. In addition, the sociocultural factors within and around the participating schools and within these cross-cultural PLCs may also affect teachers' motivation for participation. This knowledge regarding motivation for learning can help understand teachers' motivation in the Canada-China sister school network.

4.1.1 Sources of Motivation

In the Canada-China teacher communities, teachers were driven by both extrinsic and intrinsic factors of motivation when facing the opportunity of participating in international school partnerships. Two evident intrinsic sources of motivation for both Ontario and Shanghai teacher participants are the expectation of cross-boundary professional learning and teachers' educational or professional background. The extrinsic sources of motivation include the expectation of benefiting students, colleagues' influence, the environment of professional learning, and the principal's influence. As with the intrinsic factors, most of these extrinsic factors affected both Ontario and Shanghai teachers; however, the principal's influence was only reported by the Shanghai participants as one factor that prompted them to participate. These differences between Canadian and Chinese teachers will be discussed in the next section while this section mainly focuses on common extrinsic and intrinsic motivating factors.

Among the extrinsic sources of motivation, the expectation of benefiting students constitutes the most important reason for teachers, especially Canadian teachers, to participate in the internationally networked PLCs (INPLCs). Some teachers believe that students can benefit through their direct or indirect involvement in the sister school partnership alongside teachers and that the benefit can be linked to students' academic study or cultural learning. For example, one Canadian Social Studies teacher in Pair 2 wanted her students to be "interacting with different cultures" through the partnership because this kind of cross-cultural interactions "is beneficial in many ways" (ET 3, Interview), and a Ban Zhu Ren in Pair 3 felt that the sister school partnership can "broaden the horizon of students and bring in different things" (CT 12, Interview). Since the two places used different languages—English or Chinese Mandarin, teachers also expected their students to enrich their

language learning experience through the cross-cultural partnerships. In fact, for years, English has been regarded as the most important second language for Shanghai students while learning Chinese gains more and more popularity in Canadian schools. In each of the four participating Canadian schools, there is an elective Chinese language program or course. As the following interview excerpts show, both Chinese and Canadian teachers talked about the same interest in enhancing students' language learning through the partnerships.

> I am the assistant curriculum leader for languages…we offer Mandarin in my school. It calls on for my responsibilities…Offering them an opportunity for exchange, it is an enriching experience. (ET 2, Pair 1, Interview)

> It attracts me for students. I am an English teacher, the communication between sister classes uses English. I believe students can learn a lot of things that they don't learn in classes. For example, the experience of talking with them in English. They can't have this kind of experience in my class. (CT 17, Pair 4, Interview)

Language was not the only academic area expected by the participants to benefit students since many of the teachers are from other subject areas. For instance, in Pair 2, one Chinese Math teacher believes that providing students with the opportunity of learning AP Math can "cultivate their awareness of applying math" and hence "benefit their future study" (CT 4, Interview). The Canadian teacher in Pair 3 talks about her expectation of improving Math and Science teaching by learning from Chinese education.

> [The] Chinese education system around Math and Science seems to us [to be] very disciplined and more advanced in terms of student achievement… So my interest is, as a Math and Science teacher,…in looking at in what ways can I modify my teaching to help my students achieve a higher outcome in Math and Science. (ET 8, Pair 3, Interview)

Ontario teachers seem to have more reasons to be concerned with student benefit through the Canada-China sister school network. Other than academic and cultural learning for students, Canadian teachers were also motivated by the fact that more and more Chinese students are coming to their schools. In one of the participating Canadian elementary

schools, almost all the students have Chinese connections while the other elementary school is located in a community adjacent to the China Town of the city. One of the two Canadian secondary schools also has a lot of Chinese-Canadian students as well as a growing number of Chinese international students. The teachers in these schools talked about their interest in the sister school partnerships in relation to the student demographic of their schools.

> I was interested just because of our school demographic. We do have a high population that do come from China…and we have a high Asian population. So, I was interested in seeing what the education system was like in China compared to Canada…[It] would help me as I engage my students here. (ET 7, Pair 2, Interview)

> The fact that all of our students, 600, have connections with China. What's memorable for me is really, it's visually as much as academically the look on their faces. And the enthusiasm they know they are gonna learn something and talk about China…they want to know more about their country of origin. They want to understand their roots. (ET 9, Pair 4, Interview)

There are two prominent intrinsic sources of motivation for being involved in the Canada-China school network. The more important factor seems to be teachers' expectation of professional learning outside the local education boundary. Both Ontario and Shanghai teachers think that the international professional communities can provide them with opportunities to learn from the other side. Most of the participating teachers were curious to see how the other system of education works and how the teachers over there teach. While most teachers' intention of learning is in a general sense, some teachers have specific interests in particular areas, such as Science, Math, Psychology, or student assessment. For examples, the following quotes show how teachers think about the cross-boundary professional learning opportunity.

> I was interested in seeing what the education system was like in China compared to Canada. So, really for me it was about…sort of academic and professional pursuit… I wanted to know what they are doing. (ET 7, Pair 2, Interview)

> I was feeling that sharing with a school overseas is a good thing in any case…I would like to learn about science education in foreign countries. So, I think the sister school project could be helpful. (CT 13, Pair 3, Interview)

Regardless of general or specific interests of professional learning, it was primarily the difference between the two education systems that triggered teachers' curiosity to learn. It is the difference that attracted teachers and school leaders on both sides to participate in order to "learn from each other's strong points to make up one's deficiencies" (CT 5, Pair 2, Interview). Several teachers pointed out that their motivation for cross-boundary learning is related to the puzzles in their own work or their observations of "weak points" in their own education. They want to learn from the difference between the two systems in the hope of improving their own teaching or education in general.

> I want to know what's happening there. We have a club, a Math club. The students who are doing well in the Math club mostly come from China… So, we want to know what's going on there. (ET 4, Pair 2, Interview)

> Other than student assessment, I am also interested to learn a variety of areas, such as how they organize students' [extra-curricular] activities, how they involve parents, and how they make use of community resources. These areas are weak points of Chinese education. We are just beginning to be aware of them and work on them. (CT 18, Pair 4, Interview)

Participating teachers' interest in cross-boundary professional learning is related to their personal, educational, or professional background. Teachers' past relevant experiences constitute another intrinsic source of motivation to participate in these INPLCs. Some Shanghai participants reported that they used to be involved in similar international initiatives or participated in teacher development-oriented research projects before. In particular, the two Shanghai elementary schools are also research sites of a longitudinal research project titled New Basic Education Research (NBER) that is led by a renowned Chinese scholar Professor Ye Lan in East China Normal University. This University is also one partner institute of the RL project. Due to this connection, several teachers directly related the participation in the RL project to their past experience in the NBER.

> I think it was related to (my experience in) NBER. Over the past years, when I was still a Ban Zhu Ren, I had been always working with Dr. L (ECNU) and CT 12 (in Pair 3). (CT 18, Pair 4, Interview)

> I have been involved in the NBER project for a long time. I feel that the professors of NBER truly think for students' wellbeing and school development. Since these professors promoted it [the sister school project], I follow them actively too. (CT 12, Pair 3, Interview)

Unlike these Shanghai participants who link the sister school partnership with their past research experience, Canadian teachers relate this learning opportunity to the interests stemming from their personal or professional backgrounds. For example, ET 1 in Pair 1 would like to share computer education with the sister school because she is the head of the Computer Studies in the school. For ET 4 in Pair 2, he feels affinity to Chinese Math education because of his own educational background in an Asian country, while ET 9 in Pair 4 is simply "always fascinated" by China and Asian culture. In Pair 3, the Canadian teacher's background in experimental science, and her father's influence, who is a water scientist, prompted her to engage in the collaboration on water science education with the sister school. Speaking of her appreciation of this new form of INPLC, she said:

> I have always been involved in teacher learning by working with other teachers. So for me, that [sister school partnership] was really what it was. When an opportunity [like this] comes up, I never say no. (ET 8, Interview)

4.1.2 Comparing Sources of Motivation

Besides commonalities, there are some disparities between Ontario and Shanghai teachers in terms of motivation for participation. First, many Chinese participants referred to the influence of their principals as one reason for participation whereas no Canadian teacher thought in that way. In fact, in all the research schools in both countries, all principals are involved at the onset in terms of agenda setting and sustainability of the school partnership. Principals' enthusiasm and their tangible or intangible support for teachers' involvement and subsequent actions are presumably stimuli for teachers in all the schools. Despite this commonality,

the principal as a source of motivation is only reported by teachers in the Chinese schools. Basically, at the beginning, many Chinese teachers just regarded participation as a task assigned by their principals, although later, they might have developed their own interest in sister school activities as they saw benefits for themselves or for students. In their interviews, many Chinese teachers reported that they were "assigned" or "persuaded" to participate at the beginning. In contrast, no Canadian teachers regarded participation as an assignment from the principal or the school.

> Mainly because it was the school's assignment. (CT 6, Pair 2, Interview)

> At the beginning, the Principal and VP looked after the project by themselves. They became too busy to be responsible for it. So, the Principal designated this task to me. (CT 14, Pair 3, Interview)

> When the school leaders came to ask me if I would like to take this task, I hesitated a little bit." (CT 16, Pair 4, Interview)

In the Canadian schools, principals' authority and persuasion might only have had a very limited influence on teachers' decisions to participate. Teachers just "put up hands" when principals asked for volunteers. Indeed, Canadian teachers seem to participate in these INPLCs of their own free will. In the Chinese sites, however, when the project became a school level initiative due to the principal's interest and decision, the influence of the principal and the collective atmosphere in the school made teachers feel obliged to participate. While Canadian principals emphasized teachers' voluntary participation, Chinese principals did not think it would be an issue to "select" teachers and to assign "some extra work." The following quotes from two Chinese school administrators are telling.

> I know in foreign countries teachers' will is important. They are not like us. For us, sometimes because the task is assigned by the administration, teachers have to do [it] no matter what. Also, we have some stimulating mechanisms. This won't happen in foreign countries. (CVP 3, Pair 3, Interview)

> We selected well-performing teachers when we chose a class to be connected with the sister school. (CP 4, Pair 4, Interview)

This difference might be explained by different organizational cultures in the Canadian and Chinese societies. Shanghai research schools operate in the Chinese society which is renowned for its hierarchical, authoritative, and collective cultural characteristics, whereas the Ontario schools exist in a democratic society where values such as equity and individual choice are upheld. Nonetheless, this is not to say that Chinese teachers were completely forced to participate. Some of them did have or developed their own interests in cross-cultural teacher collaborations. In addition, the Chinese principals were also willing to use organizational resources to stimulate teachers to participate. Probably, in Chinese schools, using some sort of initial persuasion and pressure is just the normal way of mobilizing teachers to invest in this kind of "extra work."

Second, teachers in the two places can also be contrasted in terms of colleagues' influence as a motivation to take the professional learning opportunity. Since the concept of PLC is applied in investigating teacher learning in the international setting, the possibility of linking within-school PLC and the INPLC is of interest. In contrasting Canadian and Chinese participating teachers' accounts, it seems that Shanghai teachers' participation takes a more collegial approach than in the case of Ontario participants. Many Ontario teachers reported that they have little chance to share their learning experience with their colleagues in the school. For instance, one elementary teacher reported that "there was the feeling of being the only one in the school" (ET 8, Pair 3, Interview) while another secondary teacher said "there wasn't opportunity for that" (ET 6, Pair 2, Interview). At most, Canadian teachers were able to talk about their experience "individually," "in passing," or "in a very informal way." In three of the four participating Shanghai schools, however, teachers reported that they were "working in groups," had the chance to be engaged in a "group chat," and were supported by other teachers in the school.

> Other teachers would support if any one teacher would like to do something. This is one feature of our school culture. (CT 13, Pair 3, Interview)

> We actually work in a group; it wouldn't succeed if it only relied on me. (CT 16, Pair 4, Interview)

Chinese principals' accounts also complemented these teachers' reports. For example, CP 2 would like participating teachers to be the "seeds"

for other teachers' professional learning while CP 4 confirmed that collaboration is "a very good culture of the school." Nonetheless, there are exceptions in these Canadian schools. ET 9 in Pair 3 brought in his teaching partner at the beginning of the sister school partnership because they "share everything else," while ET 8 in Pair 2 influenced her mentee who started participating from the third project year. Except for these two special cases, however, Canadian accounts of colleagues' influence on their participation in the INPLCs are quite different from those of Chinese teachers.

Third, another striking difference between Chinese and Canadian participants is related to teachers' sense of influence from outside the school on their professional learning. Chinese teachers sense the influence of societal and educational change in Shanghai and China and embrace many opportunities to learn about western education. In the interviews, Shanghai teachers and principals often mentioned that they "have many channels to learn about western education," although the "western education" does not necessarily mean Canadian education. The learning resources for Shanghai educators include international teacher exchanges, imported western curricula that are used in schools, online resources, books and media coverage about western education, personally visiting overseas, and local professional development opportunities provided by the education bureau such as visiting international schools. At the same time, Chinese educators observe the changes in the society and in education that impact their practice and learning. They mentioned some current events and trends in Shanghai education such as the ongoing curriculum reform, the most recent Gao Kao reform, students' going abroad, and more and more international collaborations at the school level. The following excerpts from one teacher and one principal's interviews reflect these dynamics.

> The grand backdrop is that Shanghai is an internationalized modern metropolis. More and more people in Shanghai go abroad and look at education in foreign countries. Another [trend] is related to Shanghai education reform. In particular, high school curriculum reform and Gao Kao reform place more and more weight on the links with real life and with the society. (CVP 1, Pair 2, Interview)

> Over the past ten years, we have been working on innovative things. The second round of Shanghai Curriculum Reform created the third

> curriculum category, which is Inquiry Curriculum. The reason why this category was added was that we saw the gap between us and the education in foreign countries…I think we learned from western developed countries in this respect. (CT 13, Pair 3, Interview)

In contrast to Chinese participants' "many channels" to learn about the western education, their Canadian counterparts unanimously reported that they had little chance to learn about Chinese education. A few of them said that they learned something about Chinese education "only from students" who came to their classrooms from China. Several teachers simply reported that they knew nothing about Chinese education prior to their involvement in the RL project. Two teachers had imagined Chinese education by analogizing it with the education in other Asian countries that they had experienced before. The only exception was one elementary teacher (ET 9) who had visited the Chinese sister school a few years ago and led a training session for Chinese English teachers in another province of China. Other than ET 9, no Ontario teacher participants had any substantive exposure to Chinese education. Although it is unrealistic to expect Ontario teachers to treat learning from Chinese education as a priority of professional learning, as far as the RL project is concerned, this lack of exposure might have made Canadian teachers disinclined to participate in the Canada-China school network, whereas their Shanghai counterparts seemed to be more knowledgeable about western education and seemed compelled to look outside their boundaries.

4.1.3 Motivation Change

On the whole, there seems to be quite a mixture in terms of teachers' motivational changes after they had experienced the international teacher collaboration for roughly two years. According to teachers' reports in interviews and other related information, there are three possible motivation changes—no change, positive change, and negative change—after they participated in the sister school network. Approximately, a third of the participating teachers in the two countries reported or showed positive motivational change. This group of teachers either continued engaging in the INPLCs in the third project year or expressed interest in continuing. The main reasons for the increased motivation include observed student improvement, effectiveness of the collaboration,

and willingness to invest in more professional learning. The following interview excerpts reflect teachers' increased enthusiasm.

> I think now my motivation…I even took (a course) Environment Education Part I this summer… my motivation is more for looking at the need for global collaboration in terms of dealing with environmental issues and making students understand we are all going to make positive change to the future. (ET 8, Pair 3, Interview)

> At the beginning, I felt it was inconvenient…As I saw students' creativity and thoughts were inspired, I now think the project is very good. Also, the partnership school is very cooperative…I learned a lot of useful information through our sharing too. (CT 17, Pair 4, Interview)

An equal number of teachers reported a negative change of motivation to some extent. The majority of this group of teachers stopped participating in the RL project by the end of the second project year for a variety of reasons. Several of them left because they were not interested any longer, while several others left because the sister school collaboration shifted focus. These teachers mentioned several perceived issues associated with these cross-national school partnerships, for example, concerns over sustainability, unpredictable real effects, and formidable difficulties in communication and in the implementation of plans. More importantly, once a teacher senses the expectation of collaboration or learning cannot be satisfied by the sister school partnerships, his or her "excitement falls" and the motivation to participate erodes. In addition, some unfavorable organizational conditions also seemed to contribute to the attrition of teachers' motivation.

> The relationship with the sister school didn't unfold in the way that I envisioned. And so I think my motivation diminished because of that. I think maybe it is harder to have a cross-curriculum exchange in the area of Social Science because it is so language-based. (ET 7, Pair 2, Interview)

> At the beginning, I was curious to learn new things…However, I am feeling that it is very hard to carry out a deep study and collaboration on Math teaching due to difficulties of time and space. (CT 10, Pair 3, Interview)

However, one-third of the teacher participants' motivation did not seem to be affected. Among these, a few teachers reported that they remain

motivated to participate in the project because "there is [still] enthusiasm between both of us" and they are "still curious to learn" despite difficulties and inconveniences associated with the collaboration and communication. For several Chinese teachers, their motivation remained low since they were asked to take on this "extra burden" by their principals in the first place. The experience in the school partnership had not boosted their enthusiasm because they did not see the benefit for themselves or for students before they either chose to leave or had to stop. In my opinion, understanding these teachers' either diminished or boosted motivation for participation is extremely important and useful for the purpose of sustaining teachers' collaboration communities in the context of the Canada-China sister school network. Teachers are not only the learners in the network but also the messengers between the two education systems. The reciprocal learning school network exists among teachers and for teachers.

4.2 Professional Identity

In a general sense, teacher professional identity can be defined as teachers' perceptions of their own roles and of themselves as an occupational group (Beijaard, Meijer, & Verloop, 2004). Sociologist Richard Jenkins believes that all human identities are social identities, and he suggests that social identity is the result of a "dialectical interplay of processes of internal and external definition" (Jenkins, 2008, p. 46). Following this line of thinking, teacher professional identity is not fixed, and its formation must be an ongoing process that is influenced by both the teacher self and the context in which the teacher works and lives (Beijaard et al., 2004; Danielewicz, 2001). Moreover, by reviewing strands of research on this topic, Beijaard et al. (2004) establish the thesis that teacher professional identity consists of "sub-identities" and that the formation of professional identity requires teachers' active engagement in individual and collective professional learning. Obviously, this view of teacher professional identity accords with the social learning theories that posit that people learn and develop through participation in social settings. We shape and reshape "who we are and who we become in the context of the communities to which we belong" as we participate in practice and learning (Wenger, 1998). Indeed, it has been shown that teachers develop professional identity in the school, for example, through reflective practice and professional development (Beck & Kosnik, 2014);

through reflective conversation with colleagues and experts (Cohen, 2010); or through telling stories about their practice and the context (Connelly & Clandinin, 1999). Given these understandings of teacher professional identity, it is fair to surmise that teachers' participation in Canada-China teacher PLCs would bring about changes in their professional identity.

The PLC research provides evidence that teachers' learning and practice experiences in professional communities shape their professional identity. For example, Little's (2003) accounts of school-based learning communities show that teachers' participation in talking about practice, sharing teaching artifacts, and interpreting shared classroom accounts shape how they think about themselves as teachers in collective terms. Engaging in professional learning activities "shapes not only what we do, but also who we are" (Wenger, 1998, p. 4). Lieberman and Wood's (2003) observation of a national teachers' writing community supports the claim that participation in communities of practice brings about identity formation. As teachers participate in social practices in professional communities, they share and learn norms and purposes of the activities, develop a sense of belonging, and, consequently build and reshape their professional identity (Chapman & Hadfield, 2010; Lieberman & Wood, 2003). Moreover, some features of networked PLC might give teachers a sense of autonomy and ownership in a way that enhances their self-efficacy and empowers them to become explorers of educational innovation (Day, Hadfield, & Kellow, 2002; Veugelers, 2005). Indeed, to learn and grow in PLCs, teachers have to "put their professional identities on the line, to admit they do not know everything, to expose their knowledge gaps to themselves and to their colleagues, and to reconstruct both their professional narratives and their professional identities" (Mitchell & Sackney, 2001).

In international school networks and INPLCs for cross-cultural reciprocal learning, the ideals of cosmopolitanism and particularly cosmopolitan teacher identity are certainly applicable. In terms of cosmopolitan identity, UNESCO (1996) emphasizes that it becomes more and more important in the interconnected and unpredictably changing world. People should learn to live together by "developing an understanding of others and their history, traditions and spiritual values" and recognize "our growing interdependence and a common analysis of the rules and challenges of the future" (UNESCO, 1996, p. 90). In education, Hargreaves (2003) argues that teaching in the modern society and world

must attend to "developing cosmopolitan identity and humanitarian responsibility at home as well as abroad" in addition to students' academic achievement. Concerned about the negative impact of the knowledge society and economic globalization on education and teaching, he suggests teachers be committed to continuous professional learning activities such as working with colleagues in temporary and long-term teams, participating in professional learning networks, and learning to teach in other contexts and countries. In the same vein, Luke (2004) echoes the point that under the new conditions of economic and cultural globalization, the social field of teaching and education needs to be redefined. He envisions a new "transcultural and cosmopolitan teacher" who has "the capacity to shunt between the local and the global" and calls for a new community of teachers who communicate and collaborate across borders (Luke, 2004, p. 1438). This vision of teachers' cosmopolitan professional identity helps the researcher to understand the underpinnings of teachers' learning and actions in the Canada-China school network.

4.2.1 Cosmopolitan Awareness

The teachers who participated in the Canada-China sister school network demonstrated cosmopolitan awareness to some extent even before they started these INPLCs. Indeed, Ontario and Shanghai teachers' overall views on teaching and on the profession have been impacted by the rapidly changing interconnected and interdependent world. The awareness of what educators in other countries are doing is already one part of these teachers' professional identity that shapes who they are, what they choose to learn, and how they teach. Arguably, having this kind of cosmopolitan awareness is another important reason for these educators in China and Canada to participate in the INPLCs, in addition to other contributing sources of motivation. Therefore, as far as this study is concerned, the question is not only about how teachers' professional identity is reshaped by the experience of cross-system professional learning but also about how these Canadian and Chinese educators participate as a result of thinking globally.

The interview data show that Ontario and Shanghai participants share two prominent characteristics related to cosmopolitan professional identity: the sense of belonging to the global community of education and open-mindedness toward the outside world. First, many teachers in

both places demonstrated a sense of belonging to the global community. Owing to the globalization characterized by convenient international travel and migration, advanced technology, and an easy access to information through media and the Internet, teachers experience and observe their schools operate, their students learn, and themselves teach in a largely interconnected global community. As far as teacher education is concerned, in this global community teachers have tremendous opportunities to be exposed to practices and educational resources from around the world. For Shanghai teachers, they have been learning about western or world education through a variety of professional learning opportunities either provided by the school, the local educational authority, publications, or the mass media.

> I learned about foreign education by reading books. Descriptions of foreign education in TV news and talking TV programs also help me learn about foreign education. Also, our school district used to invite a group of excellent American teachers to give lectures for us. (CT 12, Pair 3, Interview)

> The school often sends teachers overseas for study tours. They brought back feedbacks. I also had chances to visit Hong Kong and Australia and looked at their education. (CT 18, Pair 4, Interview)

For Ontario teachers, although they do not seem to have much exposure to the Chinese education system, they do have access to information about other places around the world given the convenience of Internet, international travel, and immigration. Six out of the ten Canadian participating teachers were born outside Canada; therefore, their own immigration experiences, family backgrounds, and past educational or professional experiences already made them global citizens in a sense. Moreover, Ontario teachers found their schools are no longer local because of international or immigrant students. One teacher described this situation: "The world is coming to me. It is interesting because I have to be sensitive to that" (ET 7, Pair 2, Interview). This phenomenon is also true for other Ontario teacher participants as they are all teaching an increasingly diverse student population. The social field of teaching and education is changed (Luke, 2004) as teachers receive information about and for education from around the world through various sources. These professional and learning experiences enable these teachers to identify with other teaching professionals internationally.

> I came from Sri Lanka. Our curriculum is kind of British background. It is mostly concepts, like deep concepts, quite similar to other Asian countries [including China]. (ET 4, Pair 2, Interview)

> You can say that they are off in another country. But it is not really [true] because it is a global community—we travel, we exchange ideas, and so on. So you have to make efforts to live with people who have different points of view. (ET 9, Pair 4, Interview)

As the result of the sense of belonging to the global community of education, teaching for these Ontario and Shanghai teachers is no longer a local business. Rather, it becomes a profession that must contain a global view and sometimes needs to involve international sharing and collaboration at both the school and classroom level. To this end, "this kind of school-to-school collaboration can be very helpful [because] with this connection, the school will no longer do education by closing its door; rather it can see what others are doing" (CT 11, Pair 3, Interview). This leads to "different approaches and ideas from the sister school that can stimulate us to reflect on our teaching and in turn change or improve our teaching" (CT 2, Pair 2, Interview). Especially, for the Ontario teachers whose primary concern is student benefit out of the international collaboration, they see this sister school work as a kind of preparation for students' future life in the globalized world through relationship building or ability and awareness cultivation.

> People do move, do change countries…so we have to try to develop our students to the best of our abilities so that we prepare them for the society here in Canada and in a more international context. (ET 4, Pair 2, Interview)

> I really do believe that we are really one. And how are we supposed to develop that [belief] for our children? Well, develop it through understanding, through relationships. So, that to me is the most important thing. (ET 10, Pair 4, Interview)

It is also evident that in the global community of education these participating teachers are open-minded toward the things outside their professional and cultural boundaries. They do not consider their own education or judge others' education from a point of view that is local and narrow. Instead, they welcome new information and others' insights, and they are disposed to innovate and change in order for improvement

when conditions permit. During the Ontario teachers' interviews, they talked about why they should look at others' "best practices," how they "went on the internet to look at different curricula," and how they approach new knowledge and skills outside their boundaries, such as "Japanese lesson studies" and the Chinese students' learning achievement. During the Chinese interviews, teachers reported how they felt obliged to learn from outside their boundaries because the Shanghai education system started urging them to "take a broader view of students' growth and [that they] shouldn't only focus on their scores" (CT 16, Pair 4, Interview). They felt that they have to "know how other countries are doing… how other schools do" (CT 2, Pair 2, Interview) and are encouraged to "borrow" and "use them" if applicable knowledge and skills are identified. Evidently, the awareness of educational practices elsewhere and the readiness for learning was already part of these Ontario and Shanghai teachers' professional identities before they participated in the Canada-China sister school network.

> I have an influence on their [my students'] character, helping them make good choices, and become good people. So when I look at that, these are also areas that I can probably learn something from someone who is teaching in another place in the world who faces a different political system, faces a different academic system, and faces different environmental challenges. (ET 7, Pair 2, Interview)

> I see internationalization as a trend in the current world. I think if we only stick to our own way of education, the education is not complete. We must absorb advanced thoughts of education from overseas. We teachers shouldn't close the door and do our own education blindly. The purpose of doing this is to better our education. We are educating students who will be able to enter the world stage. To this end, we teachers need to be open-minded towards the world at first. (CT 15, Pair 4, Interview)

Teachers demonstrated cosmopolitan awareness and open-mindedness to different degrees. However, the difference is not between who are or are not aware of the global education arena or who want or do not want to learn; instead, it is about to what extent a teacher demonstrates and acts on cosmopolitan awareness in the mixture of local and global professional identity. Speaking of the teachers in the Canada-China sister school network, this difference probably contributed to the divide between those who took innovative curricular initiatives in their classrooms and

those who did not make any practical changes in response to the new learning from the network. Indeed, for all the teachers who participated in the Canada-China INPLCs, they have already taken a courageous step further than other teachers in their schools and systems and "put their professional identity on the line" (Mitchell & Sackney, 2001). While the responsibility designated by the national or provincial curriculum is still primarily the local teachers' main concern, some of the participants sensed an obligation to take action now globally; therefore, they proactively took the opportunity that the sister school partnerships brought to their classrooms despite many personal or organizational obstacles. Some other teachers, however, dared not make any changes to their local practice for a range of understandable reasons. As the result of the global-local negotiation between these teachers' local and cosmopolitan professional identity, some think "with the students in Shanghai I want that sort of interaction [for my students]" (ET 8, Pair 3, Interview), whereas some others believe "our first goal is local…we can't think globally unless we get these goals honed first" (ET 6, Pair 2, Interview). Besides the concern of bringing learning opportunities to students, it appears that the differences in weighing the local and global identity also, in turn, determined how a teacher received the alternative cross-cultural professional learning opportunity and how much he or she would be impacted regarding knowledge, practice, and professional identity.

4.2.2 Reshaping Teacher Professional Identity

The literature has shown that the participation in professional learning, particularly the learning in PLCs, may build or reshape teachers' professional identity as a result of new knowledge, relationships, and sense of belonging. Generally speaking, teachers' interview data in this study confirm this observation. In the Canada-China teacher PLCs, the participants on both sides examined their knowledge and practice from a new perspective and consequently broadened and pushed their professional boundaries further. As teachers in the two places engaged in INPLCs, they not only had opportunities to exchange ideas and observe practices but also collaborate on real teaching and learning activities involving their students. It is these new connections and authentic professional learning opportunities in the international setting that strengthened the cosmopolitan element of these teachers' professional identities. Some participants demonstrated an increased sense of belonging to

international PLCs. This was more evident with elementary teacher participants than secondary teachers. For example, in Pair 3, where participating teachers have been collaborating for the longest time, compared to other school partnerships in the network, one Chinese Science teacher empathizes with his Canadian partner regarding the sense of belonging to the international professional community. They both reflected on this realization in their interviews.

> Through the collaboration, I sensed that the teaching knowledge of water and the awareness of water is not only restricted within one school. It is a global thing… I was feeling a sense of accomplishment because the event [water week] that I organized could bring some influence to a teacher on the other side of the globe. (CT 13, Pair 2, Interview)

> I was part of it…I didn't do it all…so it's about redefining my learning community outside of my school. What I do is very different [from others in the school] but it is just not what everyone else is doing. (ET 8, Pair 2, Interview)

Another Shanghai teacher in Pair 3 who shared her Math teaching with the same Canadian teacher also mentioned a similar kind of belongingness to the INPLC. She recalled that she was "always feeling there was someone sitting in my class" because she needed to share her teaching with the Canadian sister school and this feeling urged her "to do it well so that I can share" (CT 11, Pair 2, Interview). In Pair 4, the on-site coordinator in the Chinese school (CT 15) was very excited when she could identify with Canadian educators' student-centered approach to education, while one English teacher felt gratified because now she is able to "make contact with foreign friends…to learn their ideas" of teaching and learning (CT 17, Pair 4, Interview). Similarly, their Ontario partners also appreciated the opportunity of making connections with Shanghai teachers to form an INPLC.

> If I am talking about me as a teacher, part of what I find interesting about this experience is that I'm also developing relationships with other teachers, and learning about what they do…once I have an understanding, that will impact how I teach. (ET 10, Pair 4, Interview)

Teacher participants became more open-minded because of the experience in the international school partnerships. Several Shanghai elementary school teachers compared their previous understanding with that

after the experience. One on-site coordinator in Pair 4 reflected that in the INPLCs teachers were "pushed" and "challenged" in a way that made them reflect on their own educational work (CT 18, Interview). Her colleague echoed that she was "not so open-minded at the beginning" of the partnership and then became "more confident in communicating with them" after some time of conversation and collaboration (CT 15, Interview). One Shanghai teacher's (CT 10) reflection represents her Shanghai colleagues' feeling that they are urged to "go out of the boundary and strive to broaden the horizon" in order to improve themselves and hence benefit students.

> I am feeling I become more clear-minded because of the involvement in the [Reciprocal Learning] project. I was confined to a small world before. I believe a person's self-understanding is based on others' recognition, feedback, and evaluation. Without comparison, we couldn't see the real self. (CT 10, Pair 3, Interview)

Her Canadian partner obviously resonates with her and states that it is time to "work with people in other schools in another part of the world and see what we can all do together and what we can learn from each other to improve or to change our perspectives or develop our understandings of teaching and learning in a global society" (ET 8, Pair 3, Interview).

Compared to these elementary school teachers, participants from secondary schools in both places seem less likely to be influenced in terms of professional identity. According to secondary school teachers' reflections, only a limited number of positive examples appear to show an increased sense of belonging to a larger global community of education. For example, one Canadian Computer Science teacher found that the sister school partnership helped her "realize the importance and emergence of a global view" in education (ET 1, Pair 1, Interview), while one history teacher's experience in the sister school network made her more sensitive and inclusive toward her students' different cultural and educational backgrounds. She reflected in her interview:

> [I became] aware of, in the global context, who my students are and where they are from coming to my classroom… It has made me more curious and also made me a little bit more understanding when they come in [that] they are not used to be. (ET 7, Pair 2, Interview)

More secondary school teacher participants appeared to be reluctant, if not resistant, to being fundamentally influenced by their new experience in the Canada-China sister school network. They seemed to be more concerned with their immediate local responsibilities related to what is a more prescriptive secondary school curriculum, compared to the elementary school curriculum. Under these circumstances, they are not ready to proactively take part in the INPLCs in a way that could influence their perception of teaching and learning in this new age of education. In this study, it is evident that those participants who had a more proactive attitude toward the sister school work were more likely to have meaningful reflections triggered by the exchanges in these INPLCs; the cosmopolitan component of their professional identities was more likely to be strengthened by this experience. It is even more so for those who managed to take concrete actions related to their teaching practices in the classroom. Therefore, the impact on professional identity is not too evident with most of participating secondary school teachers in both places. What they did in these INPLCs was mostly to exchange information about teaching and learning with each other. These superficial information exchanges may lead to new knowledge and new reflection on practice; however, without engagement and authentic actions real impact has yet to be seen. In particular, the Shanghai secondary school teachers seem to be deeply trapped between those new ideas learned from western and world education and the restrictive reality of Shanghai secondary school education that is not so favorable for innovation. On the one hand, they have many opportunities to be exposed to educational practices around the world, and on the other, they have little room to innovate. Understandably, these teachers, as well as their principals, would like to play it safe without challenging "the current educational environment," although they unanimously complained about it and expressed a willingness to change. "Little influence" is the comment given by one Chinese on-site coordinator (CVP 1, Pair 2, Interview) when she was asked to speak about the benefit for teachers. Her teachers' interview data are consistent with her observation.

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CHAPTER 5

What Lessons Can We Learn from the Evidence

5.1 Impacts of the Reciprocal Learning Space

It has always been believed that teachers can learn and change through collaboration in professional learning communities. The question that many PLC studies try to answer is often about the evidence of teacher learning and change. Little (2005) has duly pointed out that to uncover the evidence of learning is far more complicated than to claim that the learning occurs when teachers participate in a network since presumably learning is an integral part of the interactions. Such an inquiry is also a central piece of this work, that is, what is the evidence of reciprocal learning between Canadian and Chinese teachers in the sister school network? This book focuses on teachers directly without using proxies for teacher learning such as student achievement. Informed by theories of teacher learning and the research on PLC, I investigated the impact on teachers in four areas—teacher knowledge, teacher practice, professional identity, and motivation regarding participation in learning. Arguably, if teachers do learn in these INPLCs, then there should be observable impacts on their knowledge, practice, and professional identity. In addition, the examination of sources of motivation can provide explanations for teachers' participation and commitment, and changes in motivation can reflect the influence of participation. The information that I collected provides evidence of reciprocal learning as it shows both Ontario and Shanghai teachers were impacted to some extent in all the four areas as

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the result of the cross-cultural collaboration in the Canada-China sister school network. Teachers learned from each other through the INPLCs.

The evidence of teacher reciprocal learning in this work corroborates the results from other studies on school or teacher networks. Evidence of educational networks' impact on teachers' thinking, practice, and student achievement are found in numerous studies (Earl, Katz, Elgie, Jaafar, & Foster, 2006; Katz & Earl, 2010; Katz, Earl, & Jaafar, 2009; Lieberman & Wood, 2003; Morris, Chrispeels, & Burke, 2003). Although all these studies were conducted within the framework of single education systems, these results are consistent in principle with the evidence from the Reciprocal Learning project, which bridges two different cultures and education systems. However, the contexts of national and international networks of schools or teachers differ in many important aspects. These differences have implications for teacher learning and research. For example, the Canada-China sister school network has to deal with Ontario and Shanghai education systems that have contrastingly different curricula, pedagogical focuses, values, and traditions. Teachers in the two systems may also have different understandings and needs regarding teacher knowledge and professional learning. As discussed earlier in this work, these inevitable differences created both learning opportunities and obstacles for participating teachers. Teachers' different perceptions of these differences may lead to strikingly different approaches to and results from the INPLCs. Therefore, the impact of international school networks on teacher learning must be more complex than that of networks within education systems. The investigation into the evidence of professional learning in the international setting probably requires new perspectives and a different framework across national boundaries. Little empirical research has been conducted to unpack the influence of international school networks or partnerships on students (Edge & Khamsi, 2012), teachers, or educational leaders. A very limited number of studies showed positive impacts in terms of the influence of network involvement on educators (Edge, Higham, & Frayman, 2010; Stoll, Robertson, Butler-Kisber, Sklar, & Whittingham, 2007). However, these studies used a somewhat intuitive approach without invoking existing theories and knowledge about teacher learning. Therefore, to bring this research forward it is worth further discussion of what lessons can be learned from the evidence of teacher learning in the Canada-China sister school network in the light of the literature.

The teacher participants in the Canada-China sister school network increased their knowledge in terms of education and teaching. They shared features of each other's education systems and schools and learned about each other's ways of teaching. There is some evidence to show that teachers' personal practical knowledge (PPK) can be reshaped when teachers reflectively make meanings of the new information by comparing it with their own practice and their home education system. While the initial exchange of factual information might merely prompt teachers to engage in further conversations and collaborations, the learned pedagogical knowledge and the reshaped PPK can challenge teachers' thinking and thus, their practice. It should also be noted that what I categorized as learned pedagogical knowledge in this study is also based on individual teachers' observations of their respective teacher partner's classroom teaching. That is to say, the pedagogical knowledge that the teachers shared and learned is not only in a general sense but rather personal as well. Other than these aforementioned types of teacher knowledge, this study finds little evidence of shared curricular knowledge and other teacher knowledge such as content knowledge and pedagogical content knowledge, which were reported by other researchers when they studied teacher networks that primarily focused on certain subject areas (McDonald & Klein, 2003; Morris et al., 2003). This deviation might be related to the teacher-centered, rather than expert-led, approach upon which the Canada-China sister school network was built.

Several researchers have argued for the importance of sharing and learning experience- embedded practical knowledge in networks (Katz et al., 2008; Lieberman & Wood, 2003). However, at the same time, they also suggest a more desirable balance between practical knowledge and formal, conceptual knowledge with respect to networked professional learning (Katz et al., 2008; Lieberman & Grolnick, 1996). The current study validates Connelly and Xu's (2015) vision about the sharing and reshaping of teachers' PPK through the reciprocal learning in the Canada-China sister school network and shows that the reshaping of PPK in a cross-cultural setting can be revealed by tapping into parts of the narrative of teachers' experience and practice. The data reveal that the teacher participants invoked images, metaphors and practical principles related to their teaching when they reflected on the impact of the reciprocal learning experience. Whereas all the past studies on PPK were conducted within a single school system or within a classroom (Clandinin, 1985; Connelly, Clandinin, & He, 1997; Tsang, 2004), the

current study shows the potential to apply the conception of PPK and related ideas to an international setting where teachers do have opportunities to engage in deep collaborations that are embedded in their practice.

Nonetheless, it seems that the teacher learning in the fledgling Canada-China sister school network falls short of other teacher knowledge that might also be possible and valuable for teachers to learn from each other. This missing aspect might be a result of the completely teacher-led approach: on the one hand, teachers enjoy the ownership of the partnership activities; on the other hand, they are at risk of being left with little external guidance. As this work reveals, participants neither had the necessary prior knowledge about the other's education system, nor did they know how to go about this kind of alternative and different kind of learning opportunity. Teachers had to spend considerable time to explore and negotiate on their own before they eventually arrived at something workable. It might have been better if teachers and principals were provided with some learning opportunities in advance, such as orientation workshops (Edge et al., 2008). With some expert knowledge and guidance, teachers might have been more prepared, experienced less frustration, and might have learned more in a way that benefited both themselves and their students. Lieberman and Grolnick's argument seems relevant to the international setting:

> A network that deals only with exponential or context-specific knowledge may cut itself off from knowledge that inspires new ideas, expands personal and professional vision, or helps…invent new techniques and processes for improving their practices. In the worst of situations, participants might just be "sharing ignorance." (Lieberman & Grolnick, 1996, p. 30)

Katz et al. (2008) also suggest that if teachers' teaching is to be expected to change in favor of student learning as the result of their involvement in a school network, the combination of personal knowledge and external expert knowledge, which can assist teachers to examine and share their practices more strategically, is recommended.

The unique features of the RL project enable teachers to meld the participation in the network with their ongoing practices in the school. The RL project encourages educators to come up with, negotiate, and then implement their own partnership plans instead of imposing any research or school improvement agenda on these participating schools

in the two countries. This study shows that without an explicit external agenda that teachers themselves are also committed to, teachers tend to embed collaborative activities in the curriculum and teaching or in within-in-school extracurricular student learning activities. The interview data indicate that most of the collaborative activities in the Canada-China sister school network are directly connected to teachers' classroom teaching, often involving students as well. Some of these teacher-led focus activities are evolving to become long term, joint, curricular or extracurricular projects between schools. Interestingly, these joint projects in the international setting are close to the definition of teachers' joint work that Little (1990) identified in within-school PLCs, and similar to the collaborative inquiry that Stoll (2010) and Katz and Earl (2010) promoted as one key learning process in school networks. Thus, the collaborative activities identified in the international setting seem to have as much potential as those in national school networks to challenge teachers' thinking and practice, although the focus and benefit of learning might differ. At the same time, this practice-embedded approach of professional learning in networks seems to diverge from those common network activities which are mostly separate from the ongoing school work, such as forums, workshops, and study groups that require more in-person meetings (Lieberman & Grolnick, 1996; Lieberman & Wood, 2003). Even though the collaborative activities in this study lack face-to-face interactions due to the geographical distance between Canada and China, their impact on teachers and students' learning on both sides seems self-evident since they are primarily embedded in the classroom teaching and learning.

The evidence shows that it is possible for teachers to bring in new curricular elements and new pedagogical shifts through their international collaboration in a way that does not necessarily compromise the domestic curricular requirements. Several Canadian elementary teacher participants revised their curricular teaching innovatively so that they could accommodate the school partnership and benefit students at the same time. Some Shanghai teachers found that they were able to make innovations in their teaching in the area of EC (Extended Curriculum) or IC (Inquiry Curriculum) courses. In particular, some joint activities shifted the teaching in some participating classrooms towards a pedagogy involving international learning partners owing to the convenient technology that facilitates distance collaboration and electronic communication. Fullan and Langworthy (2014) recently described the desirable

new pedagogies in the twenty-first century as "new model[s] of learning partnerships between and among students and teachers, aiming towards deep learning goals and enabled by pervasive digital access" (p. 2). The findings of the current study offer an international example of such new pedagogies. The data show that through international partnerships and collaborations, some classroom activities are given a new purpose that enhances student learning. Indeed, the pedagogical shift in those participating classrooms can have an impact on student learning. The data indicate that being involved in an international school network can cultivate students' global understanding and global competence, although whether those outcomes were achieved for participating students was not investigated in this study.

However, given the structure and scope of activities in the school partnerships in the first two years, there is little evidence from the data to show that the impact of these cross-boundary collaborations has spread over from the participating classrooms into the school or into the network. The data can neither prove there are actual links between the international network and teachers' within-school professional learning communities nor point to the potential link between the network involvement and school-level improvement plans in these participating schools. Actually, the degree of staff involvement differs widely among the participating schools depending on teachers' and, especially, principals' interests and will. The Shanghai schools appeared to take a more collegial approach than the Ontario schools; however, it was still only the participating teachers who carried on the collaborative activities in their classrooms, while their colleagues merely gave support. Across these sister school partnerships, there were few activities that enabled sharing and learning in the network over the first two years, although this situation has been improved since 2015. Based on the information collected for the book, it seems that those effective networking activities that were identified in earlier within-system networks (Lieberman & Grolnick, 1996; Lieberman & Wood, 2003) have not played an important role in increasing the scale and effect of teacher professional learning in the emerging Canada-China sister school network. In addition, the data do not support the claim that collaborative activities in PLCs lead to meaningful change in practice for all the participants. It is true that while teachers might respond differently when they have access to new knowledge and skills, quite a few of these different responses do not necessarily lead to change in practice (Timperley, Wilson, Barrar, & Fung,

2007). Some participants in the current study thought it was too hard to implement new knowledge learned from their foreign partners; some tried new ideas and then gave up altogether; still, others might have thought that this cross-cultural collaboration had little to do with their own teaching. It could also be the case that the linkages between the learning in PLCs and the change in teacher practice are simply hard to detect due to the complexity of school work (Anderson & Sumra, 2002; Little, 2005).

Social learning theories and teacher learning research indicate that the participation in networked PLCs can reshape teachers' professional identity (Lieberman & Wood, 2003; Wenger, 1998). The data in this study show that some teacher participants developed or heightened a sense of belonging to an international professional community as they engaged with the community. They made new connections, learned from each other, and shared one community identify because of similar educational interests and actions. Teachers also became more open-minded towards new information and different perspectives from the outside world that did not necessarily fit their previous knowledge and beliefs. In other words, they took risks to explore new possibilities internationally and, at the same time, redefined who they are and what they do individually and collectively. While participants in the two countries cannot share one collective professional identity associated with a common education system or a common curriculum, they can become cosmopolitan teachers who identify with each other as they all enter "a new community of teachers that could and would work, communicate, and exchange…across national and regional boundaries" (Luke, 2004, p. 1439).

It is noteworthy that although this finding regarding teachers' professional identity in the current work confirms the result from national teacher or school networks in principle (Lieberman & Wood, 2003), it contains a different international angle that needs to be further explored. To resolve the improbable reconciliation of professional identity in school networks, Chapman and Hadfield (2010) have suggested "creating learning contexts that counter-balance strong professional identities with those based on locality" (p. 778). They believe that these new learning contexts and associated educational leadership can generate and transfer knowledge, shared purposes, and identities across the educational network and local communities. Although their advice is based on the experiences of networks within one education system, it still illuminates the findings of the current study. What they envisioned is a

networked professional learning environment that can broaden teachers' local professional identity by creating a new sense of belonging to a larger educational community. The professional learning environment created by the Canada-China sister school network indeed provides teachers with the opportunity to broaden their local or national professional identity by adding a cosmopolitan element or "sub-identity" (Beijaard, Meijer, & Verloop, 2004) through international outreach.

Importantly, however, in this study, the teachers who demonstrated cosmopolitan professional identity still opted to situate the learning and subsequent actions resulting from the international collaboration into the local reality. The data show that the teachers linked the learning attainments from the international school network back to their domestic work in the hope of improving the teaching and student learning in the classroom whenever possible. They made meanings and found (or could not find, in some cases) solutions by recognizing or referring to the current situation in their respective schools and education systems. Some of them found ways to take part in the international collaboration by creatively revamping the work in the classroom or in the school; some others were understandably reluctant to take risks in the international arena due to insurmountable local obstacles to the international collaboration. From my point of view, both approaches are legitimate and both demonstrate one kind of "situated openness," which means to be open to others while acknowledging diverse particularities but not to regard one particular culture or a universal type as the only frame of reference (Healy, 2011). This realization also resonates with Hansen's (2010, 2011) observation that many teachers already have a cosmopolitan orientation, as they are "open in a reflective way to the new and willing to be influenced by it" at some significant moments (Hansen, 2011, p. 87). He argues that education and the curriculum itself is cosmopolitan in nature and that teachers with a cosmopolitan orientation can harness it and develop it in the classroom. It seems that the RL project that "studies people working together and making inquiry together" without imposing any preferred approach (Connelly & Xu, 2015, p. 13) gives the opportunity for educators to develop this kind of cosmopolitan curriculum for students and situated cosmopolitan professional identity for themselves. Hawkins (2014) contends that both education and its research in the context of globalization need this kind of cosmopolitanism that is

> …not about changing the nature of places in any particular way…It is about ecological understandings, and coming to see how movements of people, resources, and ideas across space and time contribute to specificities of place, and how these specificities of place mediate understandings of those within them as they encounter difference, build relationships, and collaboratively construct meanings among themselves and global others. (Hawkins, 2014, p. 110)

Clearly, the case of teacher reciprocal learning in the context of the RL project provides another example of this kind of situated cosmopolitanism in the context of Canadian and Chinese education.

Moreover, the situated nature of the data collected from the two different cultures and systems not only enables the researcher to examine the impact of reciprocal learning but also to compare Canadian and Chinese teachers' current circumstances of knowledge, practice, and professional identity corresponding to the learning in the school network. The data analysis of this study shows that the impacts of the reciprocal learning space on teacher knowledge, practice, and professional identity can only be understood by taking into account teachers' existing local conditions prior to the participation. The data reveal that both Canadian and Chinese teachers had little knowledge of the other before their participation. The data also reveal that there are contrasting characteristics of teachers' current practice that may or may not facilitate cross-cultural collaborations and subsequent innovations of teaching. Moreover, it seems that based on the interview data of this study most of these participating Ontario and Shanghai teachers demonstrated a sense of cosmopolitan awareness even prior to the cross-cultural reciprocal learning experience. All these accounts have a bearing on teachers' subsequent participation, engagement, commitment, and hence the impact of the learning. More importantly, all these accounts reveal that participants' meaning making and change through the social interactions in the reciprocal learning space are actually situated in and mediated by the local place. Therefore, from the research point of view, the meanings from the data should also be examined by considering the mediating effects of the places (Hawkins, 2014). In other words, the reciprocity or mutuality in the relational learning space cannot and should not exclude the places between which the space is created. This methodological realization influences how the data are analyzed and interpreted in this work, as I elaborate throughout this book.

This work also illustrates that in general, teachers' motivation to be involved in the cross-cultural, cross-system learning opportunity can be understood in terms of intrinsic and extrinsic factors. Among these intrinsic and extrinsic sources of motivation, the expectation of cross-boundary professional learning, the expectation of benefiting students, and factors associated with teachers' educational or professional background are common to both Ontario and Shanghai teachers, whereas the principal's authority, colleagues' influence, and societal and systemic influence are more evident with Shanghai participants than with Ontario teachers. Remarkably, the participating schools and educators on both sides did not receive any kind of financial support from the RL project or from any other the local or international agencies. There is little other support being provided to the schools and the teachers except for graduate student researchers' coordination and facilitation. This situation makes the understanding of teachers' motivation to participate in this kind of cross-cultural collaboration and their consequent motivation changes more relevant and important for both practical and academic reasons. After all, the Canada-China sister school network is expected to be sustained after the RL project ends in a few years. If the motivation of participants is not maintained at a sufficient level, then the sustainability of the international network would be greatly threatened.

It is clear that teachers' attitudes towards and engagement in the collaborations in the Canada-China sister school network are associated with the reasons for which they were initially motivated to participate. When some teachers strongly believed that prospective cross-cultural collaboration and learning would benefit themselves or their students, they tended to invest more in the opportunity and in turn engage more deeply in these collaborative activities. Moreover, the data reveal that motivation to participate can change depending on teachers' varied experiences and outcomes resulting from their participation. After roughly two years of participation, some teachers became more interested owing to rewarding experiences, some were equally motivated as before, whereas some lost their motivation to continue because they did not see achieved or prospective benefits. These phenomena certainly accord with the social cognitive theory which posits that a person's motivation and action is regulated by his or her forethought about prospective outcomes of the action and subsequently influenced by the positive or negative results that the person produces for himself or herself under environmental conditions (Bandura, 1999). In the teacher learning literature,

Timperley et al. (2007) also summarized the view that teachers' engagement is the key to the effectiveness of professional learning and that the engagement is more important than how the learning process is initiated. The current work shows that different levels of teachers' engagement in the collaborative activities in INPLCs are not only associated with different learning outcomes but also explain positive or negative changes of motivation. The case of some Shanghai teachers particularly supports this claim, as even though initially, they were pushed into the network by their principals, their subsequent engagement in the process still brought them perceivable benefits and in turn increased their motivation to participate and continue to be involved.

In summary, the four areas discussed above: teacher knowledge, teaching practice, cosmopolitan professional identity, and motivation to participate in international exchanges, captured the main evidence of teacher learning and change in the Canada-China sister school network. They suggest a framework with which teacher education in cross-cultural, cross-system professional learning communities can be systematically studied. This framework is informed by existing theories and knowledge about teacher development and learning. It takes into account characteristics of internationally networked professional learning communities and considers cognitive, conative, personal, and cultural aspects of teacher learning that can all occur in INPLCs. It is hoped that these four areas of impact can shed some light on the documented complexity in detecting evidence of teacher learning and change in PLCs (Anderson & Sumra, 2002; Little, 2005), especially those in international settings.

5.2 Making Sense of Differences

While the preceding discussion illustrates common impacts on teachers brought about by the Canada-China sister school network, different perceptions and approaches between the two sides, due to obvious differences between the two groups of teachers and the two education systems, were also expected and observed. The common impacts are viewed as evidence of teacher learning given that teachers in the two places engaged in collaborative activities and corresponding conversations and exchanges in the reciprocal learning space. Different perceptions and approaches between the two sides are equally important to the facilitation and investigation of teacher education in INPLCs and

are, therefore, well worth careful examination. The realization gradually came to me, as I researched these school partnerships, that the impact on teachers of the international school network has to be understood in relation to these Ontario and Shanghai teachers' pre-participation conditions that were influenced by their societies and organizations and shaped by what was happening in their work and in their respective education systems. Given the differences among these teachers and between the education systems within which they work, it is equally valuable to scrutinize those striking differences in the Shanghai and Ontario teachers' experiences in the reciprocal learning space. The burgeoning reciprocal learning space that bridges the two educational entities not only facilitates the participants' cross-cultural collaboration and mutual learning but also enables the researcher to compare participants as they collaborate.

The comparative analysis in this work shows that behind the seemingly similar voluntary participation in all the schools, Canadian and Chinese participants differ in terms of sources of motivation due to the divergent local realities where they live and work. For Shanghai teachers, learning from the western world and "foreign education" has become an important ingredient in their thinking and practice because of traditions of professional learning and the current educational policies on education internationalization. They also have a lot of opportunities and resources within the education system and from the public media to learn about and from foreign education. In addition, it is a formal requirement for Shanghai teachers to participate in professional learning in order to continue teaching in contrast to the current Ontario government which no longer mandates continuous teacher professional development in relation to teacher certification. Shanghai teachers feel compelled to look outside the school, the city, and the country due to the influence of the principal, the education system, and the ongoing societal changes in Shanghai and in China. Again, by contrast, although Ontario teachers also have a similar kind of curiosity or interest to learn about their Chinese counterparts and Chinese education in general, they do not feel the necessity, let alone an urgency, to learn from the Chinese education system. By and large, as Connelly and Xu (2015) observed, learning from China is definitely not a "predominant idea at work" in the Canadian society and education system. For Ontario teachers, the reasons for being involved in this Canada-China school network mostly originate from their personal interests, their good will of creating more

learning opportunities for their students, and the growing multicultural context in which they teach which includes large numbers of Asian heritage students. For the Ontario teachers, learning is not a central purpose but merely a by-product of their participation in the school network.

The data that I collected also reveal that Ontario teachers are more motivated to participate by the expectation of student benefit than by their own professional learning, whereas Shanghai teachers are more likely to be motivated by the expectation of professional learning than by student benefit. This difference is true at least at the initial stage of the collaboration between the two groups. While Canadian teachers saw the possibility of connecting these cross-cultural collaborations directly with curriculum teaching, Chinese teachers found this kind of international opportunity had little to do with the formal curriculum except for its benefit as an eye-opener. Shanghai teachers seem to be more influenced by their colleagues and especially by their principals' opinion and authority, in contrast to Ontario teachers. This difference is certainly related to the school culture that is shaped by the cultural characteristics of the two respective societies, one being known as democratic and individualized while the other authoritarian and collective. This finding echoes some results in the literature. For instance, while Wong's (2010) study found that authoritarian-oriented practices and collectivist values are evident in Shanghai schools, Skerrett (2010) found that teachers in Ontario schools feel physically and intellectually isolated within the school.

In addition, Shanghai teachers felt more influence from the societal and educational changes in Shanghai and in the country during the ongoing course of China's opening to the world and modernization. An impression that I had during the principals' and teachers' interviews is that these Shanghai schools and teachers are nudged by these changes to be involved in the international school network and other opportunities of learning from "foreign education." For the participating Ontario principals and teachers, their view on the school partnerships with China seem to reflect the policy of education internationalization in the country, province, and particularly in the school board where these schools are located. Generally speaking, the Ontario principals and teachers and the school board involved focus more on student benefit such as the learning attainment of domestic students or recruiting more international students for economic reasons, whereas the implementation of internationalization of education in Shanghai is more fundamental and comprehensive and appears to involve all the stakeholders in the school

including principals, teachers, and students. As a result, Shanghai schools are readier to invest in this kind of international initiative because, as one Ontario principal observes, "China is still in the process of learning from the rest of the world," whereas, as one Ontario teacher believes, Ontario school boards and schools might not have too many "political and monetary incentives," to invest in this kind of opportunity to learn from a developing country such as China.

Related to the differences of motivation to participate, it also seems true that, in contrast to Ontario teachers, Shanghai teachers are more likely to experience challenges and dissonances as to their practical principles and existent knowledge of teaching in the face of new information learned from their Canadian partner teachers. The data suggest that many Shanghai teachers are somewhat unsatisfied with the current circumstances of education. On the one hand, Shanghai teachers want to acquire the ongoing societal and educational changes and would like to see more improvement in education; on the other hand, they sense that some systemic obstacles, such as the competitive examination system, might prevent substantive changes in their practice. I also find that differences in curriculum structure and organization of teaching and learning in Ontario and Shanghai result in teachers' different ways of linking sister school collaborations to their classroom activities. While some characteristics of the current practice in each place provide the ground for international collaboration, certain domestic requirements of teaching limit the possibility of innovation in teachers' practice. For Shanghai teachers, the new triplicate curriculum structure seems to provide some room for innovation in terms of cross-system collaboration whereas the perennial pressure of the competitive examination system prevents teachers thinking out of the box. In particular, the EC and IC in Shanghai schools seem to provide teachers with the possibility for innovative teaching and learning, while Gao Kao still makes teachers see little room to experiment with new ideas. Ontario elementary school teachers have more liberty in the implementation of the curriculum than Ontario secondary school teachers, or Shanghai teachers, consequently, Ontario elementary teachers are more ready to accommodate the cross-system collaboration without compromising the teaching of the formal curriculum.

These differences have implication for research and especially for the practice of professional learning communities in international settings. Comparative education research has shed little light on the

commonalities and differences in teachers' motivation to participate in international school networks or INPLCs. In studies of international school partnerships, a few common reasons were observed to explain why teachers from the United Kingdom and several Asian and African countries participated and collaborated (Edge, Frayman, & Lawrie, 2009; Edge et al., 2008). The results described in this book confirms some of their findings, such as the expectation of sharing and professional learning and the hope of benefiting student learning through international collaborations. This further suggests that, regardless of individual variations, teachers from different countries and education systems might participate in INPLCs for diverse reasons and that these different sources of motivation can only be understood by linking them to the characteristics of their respective school work, education system, and society. There seems no one-size-fits-all solution to motivating teachers to be part of international teacher or school networks. I have argued that teachers' cross-boundary professional learning is necessary and important to education in this new millennium, as thoughts and practices in other places can stimulate new thinking, update new skills, and create new knowledge. This work shows that INPLC is worth considering as an effective way to facilitate international professional learning of teachers. To this end, teachers' diversified motivations and learning needs in INPLCs should be carefully taken into account when INPLCs are initiated, designed, and carried forward, as these differences are unavoidable factors that will affect the creation, development, sustainability, as well as the outcomes of teacher professional communities in cross-cultural settings.

The interview data suggest that Shanghai teachers perceived more knowledge attainment from the international collaboration, particularly in the area of pedagogy, than Ontario teachers did. On the other hand, Ontario teachers seemed to be more confident to demonstrate constructivist pedagogies that they are using in the classroom to Shanghai teachers, whereas Shanghai teachers did not seem to think they can offer much in terms of their ways of teaching and learning. In the interview transcripts, I counted the number of incidences where participants talked about the influence on teacher knowledge. Four areas of teacher knowledge were identified, including curricular knowledge, pedagogical knowledge, knowledge of education systems, and PPK. In general, this analysis shows that mutual learning between the two groups of educators did occur since both sides reported giving and receiving knowledge in

relation to their participation in school partnerships. However, a closer look at the data shows that the Shanghai teachers perceived more learning through the international experience than their counterparts did. It seems that Canadian teachers are more confident about offering knowledge to their partners than Chinese teachers.

This difference may be related to the two groups of educators' different dispositions to learn from elsewhere when they do have a chance to collaborate with international educators. Ontario teachers presumed that Chinese education is more "traditional" than Canadian education, therefore they were inclined to show Shanghai teachers some new ways of teaching and learning. Most Shanghai teachers seemed to assume a learning posture in the first place. Owing to openness of the Shanghai culture and the discourse of learning from developed countries in Shanghai education, it is quite understandable that these Shanghai teachers were keen to learn new knowledge through the Canada-China sister school network. Perhaps the Canadian teachers still unwittingly perceive a kind of "heightened status" in comparison with their Shanghai partners. Tarc (2009) found that this kind of attitude is also identified in some international schools and that it is associated with the "pedagogical competence granted by their more advanced culture" as opposed to non-western cultures and pedagogies (p. 128). I feel that this explanation might also apply to the Canada-China sister school network.

Shanghai teachers have much more prior knowledge about the education in the west than what Ontario teachers know about Chinese education. It seems that Shanghai teachers have many opportunities to learn from western education and are provided with school districts' professional learning support in this regard as well as accessible media or printed resources about foreign education. Compared to Ontario teachers' learning from the Chinese education, Shanghai teachers are much more prepared. As a result, Shanghai teachers were more disposed to learn from the western or foreign education, which they believe includes Canadian education, and they were willing to incorporate what they consider useful from foreign education to improve their local practices. This finding regarding Shanghai teachers' strong disposition to learn from foreign education echoes some scholars' observations that Shanghai educators tend to adopt and adapt imported ideas and pedagogies open-mindedly and judiciously (Tan, 2013; Tsui & Wong, 2009). As well, I believe that Shanghai teachers' strong disposition to learn must be related to the learning culture of Shanghai and rooted in Chinese

society's mentality of learning from western developed countries that was initiated a century ago.

These comparative findings provide some knowledge about how different sociocultural and educational realities may influence Canadian and Chinese teachers' reactions and learning experiences when they do have the opportunity to participate simultaneously in the same INPLCs. The educational literature and comparative education literature have offered little knowledge in this regard although substantial research has been done with respect to PLCs and networked PLCs in the past decades. Only a few studies applied the concept of PLC to investigate special characteristics of Chinese teachers' professional learning in within-school PLCs (Sargent & Hannum, 2009; Wong, 2010; Zhang & Pang, 2016) or teacher networks as PLCs (Sargent, 2015) in order for other education systems to learn from the Chinese experience. Hargreaves et al. (2013) seemed to miss the opportunity to address differences when they studied Hong Kong and London teachers' experiences in a parallel PLC project since they merely focused on commonalities. The results from these aforementioned studies added knowledge to the PLC and comparative education literature by bringing in the Chinese perspective. However, the current study is fundamentally different from these studies because the comparison in this study was conducted when the participants from two countries literally shared the same reciprocal learning space. This reciprocal learning research is dependent on participants' collaboration; in other words, without the collaboration, the reciprocal learning research will not occur. The comparative findings of this study are gleaned from the participants' experiences of cross-cultural collaborative activities in the Canada-China sister school network. It is hoped that the results and the approach of this reciprocal learning study, which is informed by the traditional PLC and comparative education literature and inspired by the relational understanding of space, can contribute to scholarly discussions as international PLCs for teachers become increasingly probable in this globalized world (Luke, 2004).

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CHAPTER 6

Too Early to Cheer

6.1 Frustrations Associated with International Teacher Collaboration

Collaboration and anticipated reciprocal learning between Canadian and Chinese teachers did occur to some extent in the sister school network as shown in the preceding sections of this book. However, teachers' experiences of participation in these new INPLCs were not free of concerns and frustrations. Participants in both Ontario and Shanghai, including teachers and principals, expressed some negative feelings about their experiences in the sister school network during interviews or project meetings. In particular, those teachers who had not figured out how to take advantage of this alternative professional opportunity were more likely to feel frustrations associated with sister school activities than other participants. These negative accounts are important to the RL project and the research because they constitute a part of the whole reciprocal learning experience in the context of the Canada-China sister school network. Also, these accounts of frustrations and concerns can be linked to the organization of the school network, which I will discuss in this chapter.

The first main problem reported by participants is the slow pace of collaboration and the low frequency of interaction between the two sides. Ideally, teachers were expected to meet and talk with each other through videoconferencing tools roughly once a month. However, this

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pace was easily interrupted by many factors, including different holiday schedules in the two education systems, examination periods on either side of a partnership, difficulties of finding a common meeting time, tight existing work schedules of teachers, communication delays, and even some special incidents such as an unexpected teacher strike in Ontario schools in late 2015. As a result, sometimes the interval between two videoconferences for one pair of sister schools was as long as a few months. Not surprisingly, some participants expressed their frustrations in this regard when I interviewed them at the end of the second project year. For example, although seemingly the collaboration between the two secondary schools had lasted a fairly long time, a few teachers in Pair 2 reported that they were still feeling they "had limited interactions" (CT 9), "didn't have lots of opportunities to observe" (ET 6), and "talked so few times" (ET 7). The principal of the Chinese school in Pair 2 also confirmed in her interview that her teachers and vice principal were "not feeling too well about the project." Similar negative comments were heard in other participants' interviews in other school pairs too.

The second concern is about the scope and depth of the collaborations. For example, the only Chinese teacher involved in Pair 1 was frustrated because he felt that the "sharing is still superficial" (CT 1, Interview). One teacher in Pair 4 who is interested in the influence of school-level collaboration on students' learning activities was concerned that "little had been touched [upon] with regard to other interested topics" (CT 18, Interview). In Pair 2, teachers of the two sides expressed similar concerns regarding the depth of sharing in their interviews. With exchanges of teaching materials and video clips, CT 5 felt that he "could only see one small point of their work" while CT 6 wanted to know more and "the whole picture." ET 5 in the Canadian school also said that the collaboration "did not have the opportunity yet to go into as much depth as we would like." Several Chinese teachers in Pair 3 also expressed their frustrations. For example, CT 11 observed that in the early stage of the partnership, the way of picking a random topic without follow-ups could only have "little and temporary" impact on teachers. They had expected the collaboration would "go deep" and would result in real application in their practice; however, in reality, this goal was not that easy to achieve. CT 10 reflected in a Project Meeting (May 14, 2015): "Personally, I am not too optimistic about the project. Indeed, it helps us to open our eyes and to be open-minded; however, it is very

difficult to go deep…." Her worry was echoed by many other participants when they were asked about the prospects of the sister school network.

The third frustration was caused by the lack of direct face-to-face meetings. It seems to be a human nature that people would like to meet in person when they want to form good relationships. For example, in Pair 4, CT 18 articulated her frustration over the lack of in-person contact that she believed jeopardized the partnership and associated professional learning. She felt that she was not able to communicate well with the sister school and the teachers over there without some kind of initial in-person contact. For her, without face-to-face meetings, Canadian teachers were not "real friends" yet and that made her feel constrained in the process of communication and sharing even though they could talk online (Project meeting minutes, May 29, 2015). This organizational deficiency was referred to repeatedly by many participants on both sides. In fact, as of the beginning of the third project year, no mutual school visits either by principals, teachers, or students had occurred although many conversations had occurred, and much effort had been made in this regard by the participating schools and by the research team of the RL project. However, it is worth noting that the RL project continued to negotiate with partner universities, school boards, and schools after the study upon which this book is based was completed. The first in-person visit from the Ontario school in Pair 3 to its partnering Shanghai school occurred in early 2016. Several participants from the Shanghai school visited the Ontario school in the next year. Similar in-person visits also happened between Windsor and Chongqing sister schools in 2016–2017, which are beyond the scope of this book. These face-to-face meetings between Canadian and Chinese participants tremendously boosted the relationship and understanding between these schools. In any event, the consideration of in-person visits deserves a fuller discussion in its own right; therefore, I will come back to it later in this chapter when I turn to organizational conditions of international school networks.

6.2 Considering Organization of Networked PLCs

It is certainly important to discuss how to build and sustain international school networks or INPLCs that work for teacher learning. The organization of the Canada-China sister school network obviously affected the experience and outcome of teachers' participation. At least some of the

aforementioned frustrations associated with teachers' international collaboration would have been mitigated if better organizational conditions were created. The research of school-based PLCs and networked PLCs within national education systems are helpful to understand this matter in the international setting. In the first chapter of this book, I have summarized organizational factors that have been discussed by researchers. In particular, a theory of action about networked PLCs within national education systems has been proposed (Earl, Katz, Elgie, Jaafar, & Foster, 2006) and then applied and validated in various contexts (Katz & Earl, 2010; Katz et al., 2008). The theory suggests that enabling conditions for building networked PLCs can be seen within schools and within the network. The theory also postulates a causal chain starting from these contributing organizational factors in the schools and networks, to the activities of professional knowledge sharing and creation, to changes in practices and structures in schools, and culminating with the impact on student learning and achievement. This theory of action is echoed by Little's (2005a, 2005b) framework for investigating professional learning in networked PLCs, which also pays much attention to evidence of teacher and student learning through network activities. Based on what I learned from PLC research and informed by this theory of action, organizational conditions in the Canada-China sister school network will be discussed in the following pages in two categories: local organizational conditions and organizational conditions in the network.

6.3 Local Organizational Conditions

6.3.1 Principals' Support and Differences

All principals in the eight schools—four in Ontario and four in Shanghai—supported the establishment and development of sister school partnerships and associated teacher professional learning activities. Principals themselves expressed their consistent support in their interviews as well as project meetings before and after the interviews. Principals' support is also verified by the information from teacher interviews on both sides. It seems that the positive attitude of and the support from principals constitute crucial factors that influence teachers' motivation and continuous participation. Most participating teachers identify with their principal's view on the project and on education internationalization and this resonance attracted and motivated them

to participate in the alternative professional learning opportunities at the onset. Principals' support and encouragement helped to maintain motivation along the way as teachers engaged in the partnerships, collaborated and learned. Several teachers in both places talked about this influence during the interviews. For instance, one Chinese participant articulated this point and his words probably represent others' feelings as well:

> Their [school administrators'] support boosted our motivation to participate. As individual teachers, we can't do this on our own. The support at the school leadership level is crucial. (CT 5, Pair 2, Interview)

Although there are some variations in the way principals supported these INPLCs, in general, three types of support are particularly valued by teacher participants in both countries: (1) the principal's coordination; (2) the principal's personal involvement in sister school activities; and (3) resources such as time, staff, and facilities allocated by the school.

In Pair 1, both Canadian and Chinese principals were personally involved in almost all sister school meetings and associated preparation work within each school. Only when two teachers in this pair decided to conduct a joint teacher study did the two principals start not to be involved in person. In fact, the Chinese teacher on the Shanghai side was recommended by his principal in order to sustain the partnership. In the Canadian school of the pair, one teacher reported that her principal was "very keen to have it happen" and that the principal spent time with the participating teachers to do some preparation work for the partnership (ET 2, Interview). Similarly, in Pair 2, CT 3 of the Chinese school reported that "the school leadership strongly supports the project" (Interview) and CT 5 echoed that the support at the school administration level is "crucial." The Chinese school even provided all equipment, such as computers and video cameras, needed for sister school meetings (Interviews). Monetary resources were also allocated by the principal to either pay participating teachers' for the extra work entailed by the project (CVP 1, Interview) or to reward teachers in the form of annual bonuses or overseas school visits (CP 2, Interview; CT 2, Interview). In the Canadian school of Pair 2, at the beginning of the partnership, the principal "hand-picked" candidate teacher participants according to her understanding of teachers' professional development interests (EP 2, Interview). As the partnership continues, she is personally

involved in most sister school meetings as she believes that the principal should be the one who "sustains it, maintains it" (EP 2, Interview). Her enthusiasm was confirmed by her teachers. For instance, ET 3 said: "[She] is very excited and enthusiastic about it…she supports it. If we need time, she makes time. If it is a meeting, she will come to the meeting…" (Interview).

The principal's coordination, personal involvement, and allocation of resources are also evident in the two elementary school pairs. In Pair 3, the sole Canadian teacher participant also reported her principal's support of the project to some extent. She felt "lucky" because the principal was supportive of what she wanted to do with the sister school partnership (ET 8, Interview). In the Chinese school of this Pair, the principal provided the necessities for teachers' participation and also personally participated in some sister school meetings (CT 10, Interview; CT 13, Interview); consequently, these participating Chinese teachers felt the principal "is supportive and pays attention" to the project (CT 10, Interview). The principal always made sure that the room and equipment for sister school meetings were prepared and an IT technician was on duty when these meetings took place (Interviews). In addition, the principal asked other school administrators to be involved in and support sister school activities in order to "broaden…horizons …for future development of the school" (CVP 3, Interview). Moreover, like the Chinese school in Pair 2, the elementary school also allocated a budget for bonus pay and extra pay for participating teachers (CP 3, Interview; CT 12, Interview). CVP 3 of the Chinese school verified:

> We give teachers a bonus when we evaluate them. It is…just a small stipend in the monthly evaluation. But it is a kind of recognition…We encourage teachers to participate in innovative and reformative actions. The Reciprocal Learning project belongs to this category. (CVP 3, Pair 3, Interview)

According to the participating teachers of the Chinese school in Pair 4, the principal also got personally involved in sister school meetings and activities (Interviews). At times, the principal needed to coordinate multiple departments of the school, including IT, logistics office, and the principal's office, so that activities related to the sister school partnership could proceed successfully (Interviews). On the Ontario side, there are two Canadian participating teachers in Pair 4 and their reports are similar

to other participants in the two countries. ET 9 thinks that his principal "is very supportive" and "trusts us to go ahead" with the sister school project (Interview). ET 10 echoed that the principal helped coordinate meetings and allocate the use of library and bulletin board for the purpose of sister school activities (Interview).

Although in general, all the Ontario and Shanghai principals demonstrated enthusiasm and provided support for the sister school network and associated teachers' activities, based on the available evidence, the degree of support that these school administrators in the two places provided is somewhat different. This difference is important because principals' support not only influences teachers' motivation but also facilitates teachers' participation and learning and hence presumably impacts the learning outcomes. For example, all of the four Chinese principals assigned or considered a staff member to be the on-site coordinator of the partnership, whereas no Canadian principal suggested that. Another indicator might also reflect differences in the level of principals' encouragement and support in the two places. The number of Ontario teacher participants is not commensurate with that of Shanghai schools. Eighteen Shanghai teachers were involved whereas only ten teachers participated in the Ontario sites. This disparity might be partially explained by the difference between the completely voluntary approach in these Ontario schools and the hierarchical and authoritative organizational culture in the Shanghai schools (Wong, 2010). However, it might also relate to each principal's willingness to promote the partnership and to encourage participation in the school. Moreover, based on the interview data, there is no evidence from the Shanghai sites indicating teachers' motivation and participation were negatively influenced by their principals; whereas some evidence from the Canadian sites reveals that Canadian principals might have taken a somewhat "reserved" position with regard to supporting the sister school partnership. For instance, both ET 6 and ET 7 in the secondary school in Pair 2 felt that the school did not provide enough support for their participation. Another Canadian teacher in Pair 1 also reported that she felt her principal was "very reserved" in promoting the sister school partnership in the school and that "a lot of other teachers still don't even know" of the project (ET 1, Pair 1, Interview). A more extreme case happened in one Ontario elementary school—the sole teacher participant felt very disappointed by the principal's inaction, although the principal himself thought he supported the sister school work. When the teacher asked, the principal did

provide resources but the lack of promotion of the project in the school community diminished the teacher's motivation. (This principal was replaced when the project entered its third year and more teachers in the Ontario elementary school were involved in the project in the third year.)

> I don't think our administration has any goals and purposes themselves [for the partnership]…we call it a sister-school partnership but perhaps it should really be a sister-class partnership…He [the principal] wasn't good at promoting the project in the school. He really didn't…I myself promote it as much as I can but I think…the administrative climate has been extremely detrimental to the project. (ET 8, Pair 3, Interview)

To explain the different degree of Shanghai and Ontario principals' support, contrasting these school administrators' view on the RL project and consequent actions is helpful. It seems that Ontario and Shanghai principals' views differ on the goal and potential mutual benefits of the Canada-China sister school partnerships. It is certainly true that all involved Canadian and Chinese principals expressed their enthusiasm about the project during project meetings and their interviews. Indeed, principals' initial enthusiasm was the most important reason why their schools participated in the first place. However, while the Canadian principals particularly emphasized the cross-cultural learning opportunities for students, their Chinese counterparts were inclined to regard this type of international collaboration as an opportunity for overall school development. Specifically, all four Canadian principals were concerned about the multicultural reality in the school, in the community, or in the city; this concern became the foremost motive for them to bring their schools into the RL project. EP 1 was concerned that those non-Asian students in the school are "sort of sheltered" in their predominantly Caucasian community although they live in a culturally diverse city. EP 2 reported that her school is "very multicultural" with more than 30% of the student population being Chinese. EP 3 explained that the proximity of the school to the China Town of the city is an important reason for which the school was involved in the project. EP 4 referred to the community in which her school is located:

> Clearly it's a good idea…our community is so predominantly Chinese… So, to get to know the community, to get to understand the culture, although we are very Canadianized, even for many of our

> Chinese-speaking students, I think it is important to see, to have an opportunity to have a China experience. (EP 4, Pair 4, Interview)

Chinese principals have a higher and larger expectation for the international school partnerships. They looked forward to not only student benefit but also the benefit for teachers and even for the school. When CP 2 talked about the collaboration on AP Math between the two secondary schools, she envisioned that the participating teacher (CT 4) could become a "seed" who would imitate, master, and hence spread the learned methods among colleagues. The vice principal of the same school elaborated the school leader's view of the project linking to the current development of the school.

> Our school is in the process of reforming teaching and learning. The student-centered approach is fundamentally consistent with the way of teaching in western classrooms. Therefore, we would like to see how it is carried out in one western country…we can learn from them in terms of content, approaches and strategies of teaching in order to improve our teaching and education. (CVP 1, Pair 2, Interview)

CP 3 sees the partnership as a "rainbow bridge" between her school and the outside world, and she believes this connection can increase the "confidence of operating the school" because it "facilitates us to communicate regularly and continuously about some topics and thoughts" (CP 3, Interview). Therefore, she required other administrators in the school to participate, alongside teachers, in sister school activities as well in order for professional learning to be enhanced (CVP 3, Interview). Referring to the major school-based curriculum and research, International Understanding Education (IUE), in the school, CP 4 stated:

> I think our school needs these kinds of sister school relationships. It is because of the background of our school development… We intend to explore paths towards students' IUE… We think that the sister school project opened a window for us. Although we are doing IUE, we mainly did it within the school with the door being closed. We had little knowledge about the current culture of foreign societies and particularly foreign school culture… It [the project] is highly related to the IUE and our school based research. (CP 4, Pair 4, Interview)

One key of the RL project is to encourage and facilitate reciprocal learning. That means connecting practitioners in the two countries in a way that teachers collaborate and learn from each other by being involved in ongoing practice. According to the principals' interview data, it seems that Shanghai school administrators identify with this fundamental goal of the RL project more readily than their Ontario counterparts do. While Shanghai principals consistently expressed their appreciation of these kinds of "deep exchanges," Canadian principals provided little evidence to show that they truly identify with the goal of reciprocal learning.

> The main reason why I am particularly interested in the sister school project is that it seems to provide opportunity for teachers and students from the two sides to do something together. In the process of doing one project together, they may learn from each [other] in terms of their ways of thinking, values, and codes of behaviour. I believe this kind of collaboration and sharing is deep exchange. (CP 2, Pair 2, Interview)

As I have shown in Chapter 2, Ontario and Shanghai have very different focuses in terms of internationalization in school education. It seems that these Shanghai participating schools have been involved in more international exchange activities than have their Canadian sister schools. All the Chinese principals, as well as some of the Chinese teachers, mentioned their schools' continuous efforts in terms of educational internationalization such as short-term study overseas, school visits in foreign countries, and other sister school partnerships besides the Canadian relationship. Against this policy backdrop, Chinese principals probably see it as indispensable and urgent for their schools to build more international relationships and to have more concrete exchange activities with schools from other countries, particularly with those from developed western countries. Consequently, the Shanghai principals in the study were disposed to encourage and even push their teachers to take part in international professional learning activities. The Ontario principals, however, might not have felt this kind of urgency and necessity although they do see the value of the Canada-China sister school network for students' learning and development in the globalized world.

> It's [a] pilot, it's not a life and death…so I don't think there's anything dangling overhead to scare someone not to do it. It's just a really exciting opportunity, something different that's come our way, let's be the pioneers

> and try it out, and let's have fun along the way doing this… that's basically how I feel about it, I share that…over to the staff, and to the students, and of course the communities. (EP 4, Pair 4, Interview)

Ontario and Shanghai principals' different views on the goal of the international school partnerships and education internationalization contributed to their different actions. Apparently, Chinese principals and schools invested more in the sister school partnerships than did their Canadian counterparts. Chinese principals were not only personally involved but also allocated financial and human resources in the school to facilitate teachers' participation, learning, as well as the partnership development. By contrast, Canadian principals took "reserved actions" when they dealt with the sister school partnership in the reality of their schools and their education system. They had concerns from their administrative point of view. EP 2 lamented that she was "tied by more policies and protocols" than her Chinese counterpart (Interview), referring to her difficulties in allocating resources in her school in a way that benefited the sister school partnership. Understandably, she showed her hesitation to continue the partnership when she faced internal difficulties (Project Communication, April 4, 2015; October 28, 2015) and finally called for a pause when a work-to-rule teacher strike hit the school (Sister School meeting, November 30, 2015). Similarly, EP 1 admitted candidly that the sister school partnership should not be a priority at certain times of a school year: "Now we cannot worry about this [sister school partnership]… When the things go smooth, then you can start dreaming, oh, it would be nice to have this or have that" (EP 1, Pair 1, Interview). Thus, although these Ontario principals supported the sister school network in principle, their reservations about it constrained what teachers could do and learn.

6.3.2 On-Site Coordinators in Shanghai Schools

Associated with Chinese principals' strong support, each of these Shanghai schools assigned a person within the school to coordinate the sister school partnership without any suggestion in this regard from the RL project. This institutional move benefited the development of the partnerships and teacher learning; therefore, it deserves a separate discussion. In Pair 2, one vice principal (CVP 1) of the Chinese school was designated by the principal at the very beginning of the partnership to

coordinate sister school activities in the school and communicate as a liaison with the researcher. According to CVP 1's own report, she is the administrator who is in charge of foreign exchanges for the school and teacher training. Another vice principal (CVP 2) was also involved when CVP 1 was not available. Similarly, the principal of the Chinese elementary schools in Pair 3 also designated an on-site project coordinator in the school who is a curriculum leader. The curriculum leader reported her coordination work as to the sister school project in her interview:

> The Principal designated this [sister school] task to me…Before each videoconference, we would get together to discuss and plan…I am also in charge of promoting and reporting the project outside the school, summarizing participants' experiences such as small stories [of participants]. (CT 14, Pair 3, Interview)

In Pair 4, there are two on-site coordinators designated by the principal with each taking a slightly different responsibility. One of the two coordinators (CT 15) is also a curriculum leader in the school like the one in Pair 2, while the other coordinator (CT 18) is a middle-level school administrator in charge of student extracurricular activities at the school level. They reported their complementary roles as to the sister school partnership in their interviews:

> I mainly take a coordinator role. I organized students to attend videoconferences and I coordinate follow up activities in the school. In other words, I make sure the activities are carried out well. Certainly, I am personally involved throughout as well. (CT 15, Interview)

> My role…is to share student activities of the school [with the sister school], like processes and outcomes of activities during the school year… Also, in the campus, I tried to promote the project so that students of the school all know about it. Moreover, I introduced this project to guests visiting our school and kindergarten kids. (CT 18, Interview)

Indeed, these on-site coordinators in all the three Shanghai schools streamlined the communication between the RL project and the schools and facilitated teachers' participation and professional learning. One exception was the Chinese secondary school in Pair 1. It was not until the beginning of the third project year that the principal started to "identify an administrator in the Dean's office" to lead a new initiative in the hope

of sustaining the collaboration between the two schools (Project Meeting, September 17, 2015). Unfortunately, this initiative was not implemented and this partnership also ended before long. In the other three Shanghai schools, teacher participants appreciated the support and coordination of these on-site coordinators. Moreover, owing to the on-site coordination, within-school teacher communities around the sister school project seemed to be emerging. For instance, CVP 1 created a social media group for all the participants in her school including researchers. Also, she called on meetings to discuss the progress and issues of the partnership. The teacher participants in both Chinese elementary schools reported that they felt they were "working in a team." When researchers, including this researcher, visited the two Chinese elementary schools, team meetings for the sister school project were convened by the on-site coordinators (Project Meeting, May 14, 2015; Project Meeting, May, 29, 2015). However, so far, there is no available evidence to show a correlation between the on-site coordination and the outcomes of teachers' participation, such as teachers' learning attainment and changes in practice. It is hoped that as the collaborations in each school pair become broader and deeper, evidence of this institutional design's effect will emerge.

On the Canadian side, however, no school identified or considered assigning an on-site coordinator. Instead, researchers of the RL project took almost full responsibility for coordinating sister school meetings and project meetings in these Ontario sister schools. Principals sometimes stepped in as needed. While the on-site coordinators in Shanghai schools would ensure everything was ready in their schools before sister school meetings or activities, researchers on the Canadian side had to arrange the events involving participating teachers and bring equipment such as laptops, speakers, and microphones to schools to facilitate meetings. As such, the degree of support and the resources allocated in Ontario schools for the development and sustainability of the sister school partnerships contrast with the Shanghai schools. Shanghai schools intend to make the sister school partnership a school business whereas Ontario schools almost leave it to individual teachers' efforts who are provided with the school administration's support in principle. Without an on-site coordinator and other concrete support, the development and sustainability of the school partnerships, as well as the process and outcomes of teacher learning in the INPLCs, rely almost completely on teachers' personal interest and "good will," as one Canadian principal candidly stated (EP 2, Pair 2, Interview).

6.3.3 Local Educational Authority's Involvement

Related to support within the school, the local educational authority's involvement is another organizational factor that influenced the development of the sister school network and hence teachers' international professional learning. The manner of the local educational authorities' involvement in the Canada-China sister school network differs fundamentally in the two places. Therefore, this factor impacted on participating schools, principals, and teachers in the two places very differently. In Shanghai, the two elementary school sites were recommended by East China Normal University (ECNU), which is one partner university in the RL project. According to one of the ECNU professors who work in the project, the education bureau where the two elementary schools are located is only "aware of this project but…not involved" (Personal Communication, June 15, 2015). The two Shanghai secondary schools were directly contacted by the main research team of the RL project which is based in the University of Toronto and the University of Windsor. No education bureau staff of the two respective districts in Shanghai were involved in the initial partnership building process. However, although the Shanghai schools are not required to report international exchanges as they happen, they do need to report these activities to the education bureau "either in the work plan at the beginning of each semester or in the work report at the end of each semester" and if personal exchanges are to happen, the schools should report to the education bureau and the Foreign Affair Office of the district in advance (CVP 1, Personal Communication, June 15, 2015). In the interviews, both principals of the two secondary schools confirmed that they only needed to report the sister school partnerships to their education bureaus at some point but not necessarily before they started. Thus, it seems that Shanghai school principals have the discretion to establish and develop international connections for their schools. On the other hand, understandably, these Shanghai schools would not necessarily expect concrete support from the education bureaus; this was confirmed in the researcher's observation and in the information from the interviews.

The local educational authority's involvement on the Ontario side is quite different. First, the school board in which all the Canadian participating schools are located is, by agreement, one partner institution in the RL project. The project and the school board have signed a Memorandum of Understanding to formalize the partnership. Second,

all the four participating schools were approved by the school board at the beginning and the school board has been informed of all the ongoing sister school activities and the status quo of the sister school network development. The information regarding the formal partnership between the RL project and the school board was passed to the schools and teachers through the involved principals. In the interviews, teachers also mentioned they were aware that "there must be something in place… otherwise we couldn't do this" (ET 9, Pair 4, Interview).

Under these conditions, it is reasonable for participating principals and teachers in the Ontario schools to look forward to some kind of concrete support from the school board. However, it seems that their expectations have not been met. I asked every Canadian teacher participant about how much support they think they had received from the school board. Surprisingly, half of them reported "no support" while the other half said either "I don't know" or "little support." Consequently, it seems that teachers' motivation for participation and learning was negatively impacted by the lack of tangible school board support that teachers had expected to receive. For instance, one secondary school teacher, who left the project at the beginning of the third year, stated strongly:

> The Board provided absolutely nothing, no support, no guidance, no structure at all…In going forward, if the Board is serious about this type of thing, they have to provide support in terms of release time and in terms of structure. (ET 6, Pair 2, Interview)

Two of the four Ontario principals verified the concern over the lack of expected financial support and coordination from the school board. The other two Canadian principals sounded more understanding about the issue of the school board support. One of them (EP 3) thinks that the district leaders' support in principle is sufficient for him to operate; the other (EP 4) shares this sentiment, and therefore has not expected too much input from the school board given the particularity of the international sister school partnerships (Interviews). The RL project is still ongoing and the partnership between the school board and the project is still valid. It is hoped the school board will provide some substantive support in the future in response to participating teachers' and principals' needs. By the end of the second project year, however, the school board support on the Canadian side had not been favorable to the development of the sister school network. (New sister school partnerships established

between Windsor and Chongqing were strongly supported by the school board where the Windsor schools are located. More Canadian schools and teachers were involved in that section of the Canada-China sister school network.)

> The concern, I think, with most of us is that we don't get direct support from the Board…We don't have anybody [in the Board who] could say:…what do you need to continue?…So up to us. (EP 1, Pair 1, Interview)

> Sometimes I would like the teachers who participate in the sister school project to all sit down together. It would be great, but it is not gonna happen…Only the Board can provide the financial support…[now] we are all like working in our little hole not knowing about the others. (EP 2, Pair 2, Interview)

6.3.4 Student and Parent Support

Support from students and parents is evident in all the four schools in the two elementary sister school pairs. However, little evidence of this is found in the two secondary school pairs probably due to less student involvement there. All Shanghai participating teachers in Pair 3 reported active responses and strong support from students and parents. One Ban Zhu Ren surveyed the students in her class and the parents at a parent meeting. She reported that all parents "are very supportive" and they would even offer dinner if kids and teachers had to stay after school for late sister school activities (CT 12, Interview). Similar reports came from CT 10 and CT 11 in the same school; and the on-site coordinator (CT 14) and the principal (CP 3) also confirmed parents' and students' excitement and strong support for the sister school partnership. In the Chinese school of Pair 4, parents' and students' support is also strong. CT 16 promoted the sister school project at a parents' meeting, and she found parents were "very excited." As the partnership continues, parents "put extra energy to help" their kids to participate in events related to the sister school partnership (Interview). The principal (CP 4) and one of the on-site coordinators (CT 18) were glad to find that students voted the billboard displaying Canadian students' exchanged artworks one of the ten Most Attractive School Scenes (which is a school-wide event to promote campus life) (Interviews).

In the two Canadian elementary schools, it seems that the level of parental involvement and support is not as high as in the Chinese schools, although limited evidence does show that support from parents is emerging. The principal in Pair 3 saw some parents gradually getting "on board" after they observed benefits for their kids (EP 3, Interview). The principal in Pair 4 shared sister school activities with parents regularly through newsletters and Parent Council meetings and she found that "there is a support…people are excited about it" (EP 4, Interview). Students' support for their teachers' involvement in the Canada-China sister school partnership is evident. ET 8 in Pair 3 worked with her students on designing sister school related curriculum to make sure her students "buy into it" and, in this way, she apparently managed to claim a lot of students' time and energy in order to organize and teach these innovative curricular units related to the sister school collaboration. In Pair 4, one of the two teachers clearly saw that "There is an interest for sure…[because]…the kids are keen…I don't think it has anything to do with building that excitement…it's already there" (ET 10, Interview).

6.3.5 Limited Time

Quite a few Chinese participants talked about their concern over the limited time that they could invest in the sister school partnership and thus capitalize on it. They sensed that a limited time commitment would "impact the collaboration" negatively because "we easily forget about them [sister school activities] …we have many other things to do at school" (CT 17, Pair 4, Interview).

> To achieve that goal [of partnership] requires time and energy… For classroom teachers like us, we have limited time and energy, although we have interest. Also, students' limited time doesn't allow us to experiment. (CT 5, Pair 2, Interview)

As discussed in Chapter 4, many Shanghai teachers participated in the RL project because of their principals' initial push. This initial motivation to participate seems to complicate teachers' sense of time commitment since they probably regarded the task as an addition to their existing teaching responsibilities. In fact, in the interviews, quite a few Chinese teachers reported that they felt this partnership work was a further addition to their existing intensive timetable and heavy work load. A more

favorable understanding was "another step to think and do things" (CT 10, Pair 3, Interview), whereas a more negative example would be "it is an extra" no matter what (CT 16, Pair 4, Interview). Due to pressing existing responsibilities such as teaching a "graduating class" or "other projects," participating Shanghai teachers felt that the time that could be committed to implementing ideas and plans of the sister school partnership was necessarily limited. Both elementary and secondary school principals in these Shanghai sites sympathize with their teachers' concern about time and understand the difficulty.

> Chinese teachers' work load is already very heavy…[They] are really very busy. Although we only have some exchange activities sporadically, they still feel a heavy burden of tasks…[For instance], we could not get all teachers of a class together [for the sister school meetings] because when one teacher comes out for the meeting another should be in the classroom [with students]. (CP 3, Pair 3, Interview)

> Our teachers are very busy in teaching and our students are loaded with their own learning tasks. If the project is not task oriented, they would easily put it aside. (CP 2, Pair 2, Interview)

Relatively fewer Canadian teachers raised the issue of limited time commitment. Only two Canadian secondary school teachers in Pair 2 complained that they needed "release time" for their participation in the sister school partnership because they basically regarded it as "an extra-curricular thing" (ET 7, Interview). One department head found that "time investment was one big difficulty" and hence suggested: "If you are trying to do something like this…release time would be something that potentially helps." He added that Ontario teachers' professional development (PD) time has been reduced in recent years and, as a result, it is impossible to fit the additional sister school matters into that already limited PD time (ET 6, Pair 2, Interview). The two teachers in another Ontario secondary sister school did not raise the time issue since the teacher collaboration in this pair had not yet demanded much time investment from them. The three participating Ontario elementary teachers did not seem to be too much concerned about time commitment either. The main reason for this can be related to the fact that these teachers combined the sister school activities with the regular curriculum teaching. However, that is not to say they did not need to invest some extra time for the collaboration in these INPLCs; they did since they had

to adjust teaching and student learning activities. For instance, ET 10 in Pair 4 reported that to scaffold her students' writing and share their movie commentaries with Shanghai students she had to make extra effort and "talk a lot about it with interest to see what comes up within our conversations." She preferred to incorporate sister school activities into her daily work schedule so that it would not be an "add-on" (Interview). Similarly, ET 8 in Pair 3 reflected that over the past two years "there was a lot of new work, [but] a new experience" owing to the sister school partnership (Interview).

6.3.6 Sustainable Commitment

Besides limited time, sustainability is another issue that needs to be carefully considered. It is noteworthy that each of these teacher participants had full-time teaching and other responsibilities in the school and that regardless of strong motivation, persistent interest, and other people's support, the work related to the sister school partnerships is essentially outside the framework of the existing domestic school work; consequently, sustainability becomes a concern. Thankfully, some teacher participants persist in these INPLCs and continue meaningful cross-cultural educational activities that benefit their students and themselves owing to their passion for cross-boundary professional learning and enthusiasm for students' international education experience. They overcame inconveniences and obstacles such as time, distance, or resources, that are unavoidably associated with these kinds of international professional learning activities. Notably, a few teachers in each school pair consistently expressed their interest and continue to participate in ongoing sister school activities. It is their commitment and persistence that have secured the sustainability of the Canada-China sister school network and continue to mutually benefit teachers, students, and schools in the two countries.

The sole Canadian teacher participant (ET 8) in Pair 3 continues to collaborate with a team of teachers in the Shanghai sister school. Also, owing to her persistent efforts, another teacher in the Canadian school was attracted into the project and started collaborating with another teacher in the sister school from the beginning of the third project year. The Chinese side of Pair 3, including teachers and school administrators, has been consistently committed to the partnership. In Pair 4, the partnership was successfully resumed after an interruption due to a

work-to-rule teacher strike in Ontario elementary schools that lasted a few months. The two Canadian participants are still enthusiastic about the project and associated collaborative activities between the two schools. For example, ET 10 indicated that she would sustain the collaboration by "build[ing] it into our schedule with each other" (Interview). Likewise, the team in the Chinese sister school warmly welcomed the reconnected relationship and the resumed collaborative activities (Sister School Meeting, January 14, 2016). The secondary sister school partnership of Pair 2 is still on hold due to a similar work-to-rule teacher strike in Ontario secondary schools; however, both principals expressed their willingness to resume the teacher collaboration once the strike is over (Project Meeting, November 30, 2015). The only school that left the RL project is the Shanghai school in Pair 1; its departure can be attributed to participants' decreased interest and the need to find a better match for the Canadian sister school from the RL project's point of view. Subsequently, the Shanghai school was replaced by one Beijing middle school.

Although the Canada-China sister school network manages to be sustained owing to many teachers' and researchers' commitment and effort, some sustainability issues that could jeopardize the future development and expansion of the network emerged. First, several teachers on both sides stopped participating due to their diminished motivation or other reasons such as leaving a participating school. As I have discussed in Chapter 4, teachers' motivation to participate would be decreased when they perceived too many obstacles, unsatisfying learning process and outcomes, and emerging sustainability issues. In turn, these negative observations and perceptions of participants would harm the international school network and these associated teacher INPLCs. In fact, none of the teachers who demonstrated negative changes in motivation continued to participate in the third project year. Another problem that causes inconsistency in sister school collaboration is changing staff. ET 3 in Pair 2 left the school in the middle of a school year and stopped participating in the sister school partnership at the same time; consequently, her Shanghai partner teacher (CT 2) never got the feedback on the student survey on which they had collaborated. Coincidentally, CT 2 also left his school at the beginning of the third project year although he was still enthusiastic about the project according to his interview. In addition, CT 8 and CT 9 both left the same Shanghai secondary school at the end of

the second project year. These teachers' departures, regardless of reasons, automatically ended the collaborations in which they had been involved.

Second, some Shanghai participants complained about several Canadian teachers' lack of follow-ups. For example, one teacher in Pair 3 expressed her frustration in her interview while another teacher in Pair 2 talked about his similar experience.

> I used to write a letter…asking her about student assessment…She didn't reply to that letter at all…later she stopped participating in the project. I felt so regretful. (CT 12, Pair 3, Interview)

> I took it [the student survey] very seriously and my students were very interested too. They came to ask me why there wasn't follow-up information. I had to say it was because the sister school didn't give feedback. I feel it was very regretful. (CT 2, Pair 2, Interview)

As the Shanghai principals actively supported their teachers to participate in the sister school partnerships, they felt that the sustainability issue was mainly caused by the Canadian side. One secondary school principal observed that "the sister school is changing all the time…seems to have some difficulties." Therefore, she suggested limiting the number of collaborations between the two schools so as to "to see regular sharing and reporting" (CP 2, Pair 2, Interview)." Her Canadian counterpart then agreed to only keep two collaborations for the partnership in the future (Project Meeting, September 2, 2015). CP 4 in Pair 4 also stated that it is "no good if the exchange goes, like, on and off" and that the partnership "should ensure frequency of communications" (Interview). Similarly, CP 3 articulated her view of a consistent and sustainable school partnership:

> I feel that our current [sister school] collaboration relies on improvisation. Ideas were randomly created at meetings and then we go on to discuss about them…an overall plan about what to do, what to be expected, and what are follow-ups is preferred. (CP 3, Pair 3, Interview)

The Canadian side provides the other side of the story. One Ontario principal duly pointed out that Canadian principals have to deal with many policies and regulations related to students and teachers that might delay or sometimes prevent international exchange activities (EP 2, Pair 2, Interview). This researcher's observation in these schools

confirms her report. Canadian principals need to handle things like the unions of teachers and staff and the regulations of students' privacy and safety, which their Chinese counterparts have never heard of before. For instance, two video clips of Canadian teachers' teaching could not be transferred to Shanghai because the parents of several students in the classes did not sign their media release forms. Also, when teachers were on work-to-rule strike, Canadian principals had to either leave the partnerships to teachers' own discretion or temporarily put them on hold in order to avoid complications. It seems that the completely voluntary approach is related not only to the democratic culture in these Ontario schools but also to the regulations and laws that Canadian principals have to follow. Thus, a Canadian principal would have less authority than their Shanghai counterparts to intervene if a certain collaboration is threatened due to the departure of a Canadian teacher or a teacher participant's lack of prompt follow-ups. It is this gap that caused the aforementioned Shanghai teachers and their principals' complaints about the consistency and sustainability of the Canada-China sister school partnerships. Teachers' "good will doesn't happen all the time" (EP 2, Pair, Interview); it causes harm when it is not available.

6.4 Organizational Conditions in the Network

6.4.1 Preexisting Conditions

Several preexisting organizational conditions contributed to the initial building process of the Canada-China sister school network. First of all, the RL project was funded by an SSHRC partnership grant that requires partners to provide a "cash and/or in-kind contribution" in order to reflect "the meaningful collaboration and involvement of partners" (http://www.sshrc-crsh.gc.ca/funding-financement/policies-politiques/cash_inkind-especes_en_nature-eng.aspx). Because of this partnership arrangement, no project fund was directly offered to these participating schools in either country. It is expected that these schools alongside the partnered school board and/or universities could offer financial or non-financial support for building the school network and facilitating educators' collaborative activities. Second, the methodology and design of the RL project ensure that schools and educators would have free choice on collaboration topics in each school partnership and each teacher community. As mentioned earlier, the project gives sister schools discretion to

negotiate and decide the common interests of their collaboration. The project then assists teachers to implement their collaboration plans by providing needed information, communication, and translation. As such, on the one hand, teachers and principals have autonomy and ownership over these sister school activities and professional communities; on the other hand, the school partnerships and the sister school network are expected to become self-sustaining, given educators' growing knowledge and skills regarding partnership activities.

Third, most participating schools except the two Shanghai secondary schools had some kind of connection with one previous sister school project (2009–2012) directed by the same two professors, from which the current RL project was built. All four Canadian participating schools had connections with the previous project to different extents. EP 1 was contacted by the previous project directors although she and her school were not directly involved in the former project; EP 2 personally participated in the previous project in the capacity of a vice principal in the school where she previously worked and had visited China as the leader of the school delegation. In Pair 3, the Ontario elementary school reconnected with the former Shanghai partner school with which it had partnered in the previous project. Several teachers in the Ontario schools, including ET 8, were involved in the previous project although the principal (EP 3) was new. In addition, the two directors have been doing research work in this Ontario elementary school for many years even prior to the previous sister school project. On the Shanghai side of Pair 3, CP 3 and one teacher (CT 12) participated in the previous project and visited the Canadian school a few years ago. Pair 4 is also a reconnected partnership. One teacher (ET 9) in the Canadian school in this pair participated in the previous project and visited the Shanghai sister school. It was this teacher's enthusiasm that prompted the incumbent principal of his school to support the current sister school project.

In summary, these organizational conditions prior to the current Canada-China sister school network formed the ground on which these INPLCs were to be created. These preexisting conditions, depending on how they work, may or may not contribute to the development of the school network in a positive way. On the one hand, schools and educators' former connections with the preceding sister school project and with the two directors of the current RL project were definitely helpful at the time when the network was initiated. Also, educators' ownership of the sister school collaboration can appeal to many participants to join

in and stay on board. On the other hand, the ownership and autonomy could be complicated by many local pressures on teachers in a way that would result in inconsistency and unsustainability of partnerships and associated professional learning, as I have discussed earlier in this chapter. Moreover, the anticipated financial or nonfinancial contribution from partner institutions and schools might not materialize at all; therefore, the lack of concrete support, from the teachers' perspective, might impact their motivation and outcomes of participation and learning. In fact, some participants did raise concerns over financial support, institutional support, or related issues, such as teachers' release time, that jeopardized teachers' participation (Interviews).

6.4.2 Handling Culture and System Differences

Obvious differences exist between Shanghai, China and Ontario, Canada in terms of culture and education system. Although historically and in the contemporary time, Shanghai people have a lot of experiences with other cultures especially the western culture, the majority of Shanghai's population still belong to the Han ethnicity and are inheritors of a Confucian legacy. It is well known that Chinese society and organizations are more hierarchical and authoritarian compared to their western counterparts. Moreover, China now is a communist society that further emphasizes collectivism, social order, and the power of the state. Shanghai society and schools more or less reflect these same characteristics. Ontario, culturally and linguistically diverse as it is, might not qualify as a stereotypical European-derived western culture any longer; however, it is part of a democratic nation in the western world that typically values equity, individual freedom, and human rights, all of which originated in traditional western philosophical thought. Regarding education, the two places probably not only differ in societal values, views of knowledge, ways of human learning and development (Hayhoe, 2008) but also in terms of the structure of the system, emphasis of the curriculum, and orientation of recent educational policies, as juxtaposed in Chapter 2. Despite these disparities, Ontario and Shanghai, including these participating schools and educators, are facing the same more and more interconnected world. When they do have opportunities to meet, talk, and collaborate, they have to handle these differences in order for reciprocal learning to take place.

Based on the available information, some features of the two education systems and cultures did create obstacles for the development and sustainability of the Canada-Chinese sister school network and the associated teacher INPLCs. First, elementary and secondary schools in the two places contain different grades. In Shanghai, elementary schools begin with Grade 1 and go up to Grade 5. Grade 6 to Grade 9 students go to different junior high schools; then secondary schools start with Grade 10 and end with Grade 12. In Ontario, there are two types of elementary schools with one type having Grade 1 up to Grade 6 and the other Grade 1 to Grade 8. Some intermediate schools in Ontario only have Grade 7 and Grade 8 while secondary schools usually begin with Grade 9 and go up to Grade 12. Moreover, teachers in Shanghai schools usually follow their students moving to upper grades, teaching them for a few years, whereas Ontario teachers either stay in one grade in the case of elementary schools or teach certain courses that are open to certain grades. That is to say, while a certain Shanghai teacher could participate in the project together with his/her same students, one Ontario teacher might change his/her students every year.

Unsurprisingly, the two elementary sister school pairs encountered difficulties when teachers in the two places collaborated alongside their students. For instance, one teacher reported that her Grade 1 and 2 classes had to partner with a combined Grade 3–4 class in the sister school because the participating Canadian teacher only teaches this grade. She thinks that this awkward arrangement impacted sister school activities because "apparently, they have different points of interest" (CT 10, Pair 3, Interview). Fortunately, the later collaboration in Pair 3 between Grade 4–5 teacher ET 8 and CT 13 worked because the Chinese teacher's Inquiry Curriculum (IC) course was open to Grade 4 students as well. In Pair 4, one teacher who was teaching Grade 5 when she started participating alongside her students said:

> The schools chose the higher grade to participate. This choice made their relationship unsustainable. Kids only have one last year in the school. It could start from earlier so that kids form longer relationships, like 3 years or even 5 years. (CT 16, Pair 4, Interview)

Her wish to sustain a longer collaboration lasting "3 years or even 5 years" did not happen because her two Canadian partners only taught Grade 5–6 combined classes, although the sister school runs from Grade

1 to 8. To overcome this systemic divergence, ET 9 and ET 10 in Pair 4 suggested a creative solution, namely a student club including students from any grades led by these current participating teachers in each school. The Chinese side immediately accepted this idea; and consequently, this pair started activities in the form of student club from the beginning of the third project year.

> I like what we have talked about earlier…opening it up to not just ET 9's classroom and my classroom, but to the junior division, for example, having class reps…so that the children in Grade 4 can be following this program and building relationships for the next three or four years. (ET 10, Pair 4, Interview)

Second, differing curricular features and pedagogies in the two school systems also create difficulties for deep collaboration. Teachers in the two places immediately discovered that the ways of delivering curriculum in Shanghai and Ontario are markedly different. Besides other pedagogical differences, Shanghai teachers who are subject specialists found it hard to engage in deep collaboration with Ontario teachers who are usually generalists. For example, in Pair 3, CT 11 was shocked because she saw "the Tangram collaboration was suddenly stopped" and her partner teacher just started teaching a completely different subject. Two other teachers who used to share their Math teaching also talked about their collaboration experience.

> ET 8 is an all-subject teacher whereas I am a Math specialist teacher. I would like to dig into Math topics as deep as possible. But I felt that she might be limited in terms of Math. Besides Math, she is interested in other areas such as poems and science. These areas of interest cannot be connected to mine. (CT 10, Pair 3, Interview)

> I think sometimes Canadian teachers are maybe more anxious about doing a subject partnership because they are generalists, you will have an intimidation factor in a subject like Math for lots of teachers when they compare student achievement. (ET 8, Pair 3, Interview)

In secondary schools, inevitably, different examination systems in the two places made Canadian teachers feel it was "hard to compare," while Chinese teachers and principals found they had to creatively link sister school collaborations with EC (Extended Curriculum) or IC (Inquiry Curriculum) courses that do not necessarily target Gao Kao.

One Canadian Math teacher pondered when he talked about pedagogical differences between the two systems:

> [It is] hard to compare because they have the competitive exam system. We do not have that…We are working according to curriculum standard. (ET 4, Pair 2, Interview)

Even though Shanghai teachers in Pair 2 struggled to make collaborations happen in their EC courses, such as a TI calculator course and an AP Math course, the looming pressure of Gao Kao and Hui Kao on both teachers and students doomed these efforts to be unsustainable. CVP 2 reported candidly in her interview:

> Up to Grade 11, those so called Extended Curriculum [EC] Courses are actually oriented towards examinations. Courses are designed in a way that teaches how to take exams, for example, *Getting-an-A-Class for Hui Kao*. It is usual in a public high school like us. In addition, few Grade 11 students would like to select an EC class that teaches AP… AP is not for their examination. (CVP 2, Pair 2, Interview)

These difficulties resulting from divergent curricular features and pedagogies in the two systems obviously affected some teachers' motivation to continue their participation. Those teachers who discontinued by the end of the second project year saw these differences as unsurmountable obstacles for future collaboration. For example, in Pair 2, one history teacher expressed this opinion in her interview and her Canadian partner echoed:

> We wanted to share our classroom teaching. Unfortunately, we were not able to implement it because we realized that the differences between our classes are too large to borrow from each other…Maybe it is especially the case for our Humanities subjects like history. (CT 9, Interview)

> We looked at our curricula. Our curricula didn't line up perfectly. So, things that they are covering I do not cover in our curriculum…So, it made a kind of challenge to figure out our area of focus. (ET 7, Interview)

Similar feelings were expressed by the Shanghai elementary teachers, whereas Ontario elementary teachers seemed to be able to navigate through these divergences thanks to the autonomy of curriculum implementation. For instance, one homeroom teacher (Ban Zhu Ren),

quoting a Chinese idiom, felt that her partnering with a Canadian teacher was like "using donkey lips to match horse mouths" (CT 10, Pair 3, Interview), while another teacher just thought she could hardly learn "any concrete knowledge or skills from them" because the two systems are "too different after all" (CT 17, Pair 4, Interview). As far as these Shanghai schools are concerned, "it is hard to get deep into the school curriculum and the core of the school work" (CVP 3, Pair 3, Interview). In addition to these obstacles related to curriculum and pedagogy, according to the interviews, schools and participants also had to deal with other systemic disparities that can impact the development of sister school partnerships and teachers' collaborations, including problems such as incompatible teaching goals due to different student populations, incongruent teachers' responsibility profiles, mismatching school schedules such as exam times, as well as different holidays.

Third, regarding cultural differences, participating teachers on either side did not seem to encounter many conflicts as a result of the researchers' mediation. The researchers who helped communication and collaboration between the Canadian and Chinese teachers are bilingual in English and Chinese and, to some extent, knowledgeable about both societies' cultures. Nonetheless, two cultural differences are noteworthy in order to achieve better reciprocal learning between teachers in the two countries in the future. First, educators in the two places deal with students' rights differently. For example, it is a normal practice in Ontario schools to ask students and/or parents to sign Student Media Release Forms before students' pictures are taken to share with people outside the school. This practice is not only required by the school board but also by the ethical protocol of the RL project. This consent becomes even more important since the RL project students' images might be shared with people in another country. However, this practice seems abnormal in many Chinese teachers' eyes because there is nothing equivalent to it in Shanghai schools, nor, probably, in schools in mainland China. Moreover, neither school districts nor universities in China have Ethical Review Boards or the equivalent. Given these differences, some Shanghai teachers apparently encountered problems when they wanted to exchange student works or pictures with the sister schools. For instance, one Shanghai teacher found it was hard to get what she asked from her Canadian partner with regard to student work. She believes that the way in which Canadian schools deals with student privacy makes the sister school relationship harder (CT 10, Pair

3, Interview). Interestingly, her principal questioned this practice from a cultural perspective:

> I sense that [it] lacks something…we Chinese people appreciate kinship and trust. Our parents have developed a kind of love of the school, therefore, they completely trust our teachers and put their kids in the teachers' hands…I feel that the relationship between the school and families is not only built on a legal foundation. Parents and the school have deep kinship. (CP 3, Pair 3, Interview)

Another case in point occurred in Pair 2. The Chinese school in Pair 2 provided a few video clips of classroom teaching that show teachers' teaching and images of students. The Chinese teachers who taught these recorded classes would have liked to see classroom teaching of corresponding subjects in the Canadian sister school. However, after three classes were videotaped, only one video clip was successfully transferred to the Chinese school because some parents of students in the other two classes had not signed the Media Release Form. In her interview, ET 7 expressed her regret that "the media release requirement kind of foiled our plan for it to be truly fruitful." CVP 2, the on-site coordinator of the Chinese school, complained:

> We have many open classes that can be shared and viewed on internet. I hope our sister school can provide more of this kind of open classes so that we can see their regular class teaching and learning. (CVP 2, Pair 2, Interview)

In another activity between the two schools, CVP 2 suggested letting students of the environmental group in each school contact each other directly through group emailing. However, this idea, which seemed quite easy to apply from the Chinese VP's point of view, was blocked by the Canadian principal because she was concerned with students' Internet safety (Project Communication, April 8, 2015). Fortunately, as these school partnerships evolved, the two Canadian elementary schools resolved the issue around media consent by the end of the second project year as a result of both Canadian teachers' and principals' efforts. They obtained the consent from most student participants of these involved classes so that teachers now can feel free to share student work as well as student photos when necessary. Shanghai educators definitely learned a lesson through these processes.

The second evident cultural difference is related to the use of communication and social media tools. The cyberspace in mainland China is a relatively enclosed environment and this isolated space has created a different culture and habits of using communication tools in China than those in Canada and probably the rest of the world. I will discuss this issue in detail in the next section in which I will focus on conditions and concerns about communication in the school partnerships. In addition to the two aforementioned cultural differences, there are still several misunderstandings related to culture that might impact communication and mutual learning of the sides although the impact of these misunderstandings seems minimal so far, based on the available information. For instance, one Canadian principal mentioned in his interview that Chinese teachers were too "guarded" to share their authentic experiences and practices (EP 3). One Canadian teacher seemed to share a similar feeling about her Chinese partner's openness; she commented that her teacher partner seems to "too cautious" (ET 1). Another Shanghai teacher's observation on the different performances of Canadian and Chinese teachers during videoconferences might provide a footnote for the feelings of the two Canadian participants.

> They asked more questions whereas we Chinese teachers don't take the initiative to ask. We Chinese teachers tend to answer their questions and offer what they asked. (CT 11, Pair 3, Interview)

From my researcher's perspective, however, I think these negative feelings related to cultural differences are more like misinterpretations or misunderstandings than indicated by participants' seemingly objective observations. The relationship between the two parties was still rudimentary when the study underlying this book was completed; and, to a substantial degree, the teacher participants did not yet understand each other prior to further deep conversation and collaboration. However, I do believe that the more each side learns about the other the more these misunderstandings can be reduced.

It is worthwhile to point out that, as the foregoing discussion reveals, it is not how large these cultural and systemic differences are; rather, it is how participants in these INPLCs handle these differences that produce different results. For some teachers and principals, these cultural and systemic divergences posed obstacles for collaboration and hence reciprocal learning; however, these same differences can be opportunities

for learning from other teachers' point of view. In a speech at the 2nd Annual conference of the RL project, one participating Shanghai elementary school principal (CP 3) stated that the gap between the two schools and two systems is precisely a learning opportunity for her school. Partially owing to her enthusiasm toward the RL project, teachers of the school continue collaborating with their Canadian partners and creating knowledge and learning opportunities for both students and themselves. One Shanghai principal echoed this view: "If the two schools are too similar, then the value of exchange is limited. The more differences we have, the more meaningful our exchange is" (CP 2, Pair 2, Interview). As such, different views on and attitudes toward differences between the two cultures and education systems impact educators' motivation and engagement in this kind of cross-boundary professional learning experience. Those who saw these differences as unsurmountable obstacles for reciprocal learning either left the RL project due to decreased motivation or dealt with these issues passively. For example, unlike the two Canadian elementary schools that sought to clear students' media consent so that deep exchange could proceed, the teachers and the principal of the Canadian school in Pair 2 avoided dealing with the hassle. Consequently, two video clips could not be exchanged and also the two teachers whose classes were recorded left the project by the end of the project year. It is hoped that as sister school partnerships deepen and teachers in the two places become more familiar with each other, there will be more creative solutions to these cultural and systematic disparities, such as the creation of student clubs by ET 9 and ET 10 with their Chinese partners in Pair 4, in a way that enhances school partnership and teacher collaboration.

6.4.3 Difficulties in Communication

In international teacher learning communities like those in the Canada-China sister school network, difficulties in communication are inevitable due to many factors such as language barrier, geographic distance, and different cultures. In interviews, the most frequently cited difficulties that participants encountered in the school network include the time difference between the two places, language barrier, and the two relatively separated social media and Internet worlds. First, Ontario and Shanghai are on the opposite sides of the globe and hence there is a 13-hour difference in normal time and a 12-hour difference in summer (day-light

saving) time between the two places. The difference is "literally day and night difference" as one Canadian principal (EP 2) complained in her interview. All the sister school meetings had to be arranged either in early mornings or in the evenings outside the normal school schedule. Therefore, participating teachers and principals had to either come to school earlier than usual or stay late after work for these videoconferences. Moreover, some ideas such as real-time class observation could not be carried out, given the time difference, although this activity was desired. In the interviews, participants complained about this but they understood they have to live with it.

> The first difficulty is time difference. It makes it hard to arrange things. Some ideas are great, but they are hard to be implemented because of the time issue. (CT 9, Pair 2, Interview)

> Another is the time issue. Actually, our Chinese teachers are the busiest in mornings because they have to go to classrooms…teachers had to run between the meeting and classrooms. So, 8:00 am for us is difficult. If the time was in the evenings, it was not convenient either. Teachers are very tired. (CP 3, Pair 3, Interview)

> In order for us to meet in small groups via Skype…either group should come after school hours or before school hours to have the face-to-face experience. That limits us. Yet I don't think it stops us, it's just an exciting challenge that we just have to overcome. (EP 4, Pair 4, Interview)

Second, language difference causes another unavoidable difficulty in communication and collaboration between teachers in the two countries. Although most of the Shanghai participants had learned English before, their proficiency was not sufficient for this kind of professional communication with Canadian teachers. Some younger Shanghai teachers were able to read English emails; but several senior teachers neither spoke nor read English, therefore they just "knew I received an email and that was all" (CT 16, Pair 4, Interview). For Canadian participants, neither their Chinese counterparts nor the researchers anticipated Canadian participants being able to understand Chinese. Among the Ontario participants, only one teacher and one principal speak Mandarin. However, during sister school meetings, the language barrier did not seem to block teachers' conversation owing to the Chinese-English bilingual researchers' interpretation. Researchers also helped translate exchanged teaching materials and samples of student work so that educators on the two

sides could better understand each other's teaching and learning. In some cases, Chinese teachers also sought language support from English teachers in their own schools, while Canadian teachers found their Chinese-speaking students helpful. Despite these language supports, teachers still experienced inconvenience and difficulties in their collaboration. Teachers from both sides were eager to directly interact with each other; unfortunately, the language barrier caused them to "never really that deeply join" the conversation during meetings. For instance, one Math teacher in Pair 2 believed that he could "learn more about them" and his understanding would be deeper if he was able to communicate with sister school teachers directly (CT 3, Interview). Moreover, several participants expressed their concerns over the accuracy of understanding and efficiency of communication and that interpretation "will still be needed." One Shanghai teacher and one Ontario teacher in the same school pair talked about these concerns.

> It is hard to express ourselves fully and communication is not efficient [due to interpretation]. Like, we had prepared many things to talk about [during the meetings], but we ended up only talking about one or two. I found that every time, we couldn't finish what we wanted to say. I don't know how to improve [this]. (CT 17, Pair 4, Interview)

> But there is still a translation issue, so you are not necessarily getting right to the middle of things. (ET 10, Pair 4, Interview)

Third, as mentioned in the previous section, mainland China has a relatively isolated cyber world due to government censorship. The different Internet environment in the two places created divergent habits and culture of communication in the two societies that caused some obstacles to efficient and smooth communication. In mainland China, it is not easy to open some overseas Websites; and even if they were accessible, the browsing speed would be very slow. Many popular western communication and social media tools, including Facebook, Twitter, Instagram, products of Google, are all blocked in mainland China. Instead, most popular social media platforms in mainland China are domestic products such as QQ, Wechat, Feixin, and Weibo, which together provide similar functions to their western counterparts. Especially, QQ and Wechat have a great number of users in China. With these convenient instant messaging tools, Chinese teachers and principals do not seem to check emails regularly. Also, none of these Chinese participants had an institutional

email box for work-related communication. From my personal experience, using Wechat, sending text messages by phone, and calling by phone in urgent situations are a few efficient ways to communicate with these Chinese participants. They do not seem to mind if I contact them by their personal cell phone numbers or personal email addresses. On the Canadian side, however, emailing through teachers' institutional email boxes is still the primary communication channel between researchers and participants. Unlike their Chinese counterparts, Canadian participants check their email boxes regularly. On some occasions, I called Canadian principals and teachers by their school phone numbers; however, I never contacted Canadian participants by their personal phone numbers and personal email addresses. This is very different compared to the way in which I communicated with my Chinese participants, although I began to work with both groups at the same time.

These differences in communication habits and culture in the two places not only caused some difficulties for researchers in distributing information to the two groups of participants, but also created blockages in the communication among teachers themselves. It is as if Canadian and Chinese participants are dwelling in two different cyber worlds between which researchers of the RL project have to be the messengers. At many times, researchers had to double-post messages through emails with Canadian participants but through Wechat or other channels with Chinese participants. The process of communication was certainly slowed down. CT 1 in Pair 1, who is the IT department head of the school, told me that he "rarely writes emails" and checks his email box at most once a week (Interview). His Canadian partner ET 1, who reportedly checks email frequently, complained about the pace of communication:

> I would like to hear from him whenever I send the message. That's the basic [thing], otherwise it kills the interests that are ongoing. (ET 1, Pair 1, Interview)

There are emerging creative solutions to overcome these communication blockages, thanks to the cooperation of both Canadian and Chinese participants. For example, researchers working with the teachers in Pair 3 created a QQ group involving teachers and researchers in both countries. The QQ has a built-in translation function that helps teachers at both ends understand each other, while researchers also help clarify when

difficulties occur. In Pair 2, the on-site coordinator (CVP 1) created a Wechat group including all Chinese participants in the school as well as the researcher to streamline project communication. They hoped to include Canadian teachers in the sister school in the Wechat group; however, that plan did not work out because the Canadian teachers preferred to use it on computers for which there is no proper version of Wechat because this platform was primarily designed for smartphones.

There is a need for a common platform that could streamline ongoing exchanges and communications among these participants. In their interviews, teachers and principals in both places expressed their wish to have a common digital platform in order to enhance communication and collaboration. Indeed, it would be better to have a common communication platform, like a Website, for both sides so as to avoid the hassle of using multiple communication tools. A common "share point" would facilitate discussion, record exchanges, and thus enhance communication and collaboration. Unfortunately, this seemingly easy requirement had not yet been accomplished as the project headed into its third year, due to reasons that are beyond the scope of the study. In fact, there is a project Website; however, it is designed for research purposes, not for participants' communication needs. From the beginning of the RL project, efforts were made to create a common communication platform; however, none of them worked. The most recent platform was created at the University of Windsor in Canada. Chinese participants reported that "it is very slow" or that they just could not open it "at home and at school" because of Chinese government's Internet censorship. As of the time when the data collection for this book ended, most communications and exchanges still had to rely on researchers as a third party, using multiple communication tools including social media. As reported earlier, teachers from both sides would like to have direct ways of sharing and learning and asynchronous direct communication is obviously one of them. Due to the time difference and the anticipated ongoing exchanges, a common platform that could enhance reciprocal learning is desperately needed. As the following two interview excerpts show, many participants on both sides expressed the desire to increase efficiency and effectiveness of sharing and communication.

> It is good to have those face-to-face meetings, of course, like those you have facilitated. But for additional information and those documents going back and forth, it would be great if we could comment directly. (ET 5, Pair 2, Interview)

> Currently, information is still delivered through research assistants. Direct communication between us teachers is necessary. Skype meetings can't last long, also we had internet connection issues. Interpretation also takes up time; so, we couldn't talk too much over Skype. (CT 15, Pair 4, Interview)

6.4.4 Importance of Partnership/Network Facilitators

Researchers of the RL project have been supporting most of the participating schools in the two countries. The four Ontario participating schools were fully supported by a research team supervised by one of the two project directors who is affiliated with the University of Toronto. Two researchers, including the author, have been working on the project since the project began in 2013 and stayed for the longest time compared to other researchers or volunteers who usually left the project after a short period of time. We two researchers have been taking the main responsibility of coordinating meetings and sister school activities in the four Ontario schools. At the same time, we collaborate with a research team supervised by a professor in the ECNU on the work regarding the two elementary school pairs. The ECNU research team provided on-site support in the two Chinese elementary schools. However, there has been no on-site researcher support in the two Chinese secondary schools. The researcher, as well as other short-term research assistants, supported the sister school activities in the two Chinese secondary schools remotely. As I have mentioned earlier in this chapter, the levels of needed researcher support in Ontario and Shanghai participating schools are different because the schools in the two places offered different levels of internal support. Especially, three Shanghai schools have on-site project coordinators. In all the research sites, teachers and principals acknowledged the importance of the contribution of researchers' facilitation and mediation in enhancing partnerships and professional learning. The following are several sample testimonies from two school pairs showing how teachers and principals feel grateful for researchers' support and how they think researchers' work sustains the partnerships and enhances reciprocal learning.

> Another very important thing is that our sister school project has research assistants…to be facilitators. This made our work relatively easier. The bridge that you [researchers] created is fantastic! (CVP 2, Pair 2, Interview)

> You [researchers] are the necessary support, like through the Skype conversation, we have translation, and we have connections set up and everything like that with the other school. (ET 7, Pair 2, Interview)

> I think the ECNU researchers are doing a great job. Each time when we had exchange, the researchers all participated. They interpreted, recorded the process, and then sent us documents. That's why we felt that the difficulty due to language barrier was largely reduced. And that's why the work can sustain until today. (CVP 3, Pair 3, Interview)

> [She] was excellent. She was an outside resource that can keep it moving with her time and being able to write things, monitor things. (EP 3, Pair 3, Interview)

The RL project started with building the Canada-China sister school network, followed by research; therefore, researchers were actually involved in the development of building school partnerships in addition to formal research activities such as data collection. Based on both participants' report and the researcher's personal experience, three aspects of researchers' facilitation enhanced the collaboration and communication between Ontario and Shanghai educators in INPLCs. First, researchers coordinated sister school meetings and sister school activities. During these meetings and activities, researchers facilitated, observed, and took field notes to document the content and process, and shared these notes with the participating schools on the other side, especially when these events only happened in one school of a school pair. Second, Chinese-English bilingual researchers interpreted during sister school meetings and translated exchanges, materials, and samples of student work. Teachers on both sides had to rely on the interpretation and translation due to the language barrier. Third, researchers were messengers who transmitted information back and forth. Often, researchers would find themselves helping two parties negotiate goals and plans of sister school activities while translating and transmitting messages. In some special events, researchers also helped to deliver exchange materials between Ontario and Shanghai schools, in person. Material and gift exchanges occurred in all the four school pairs, and all these items were delivered by researchers when they had chances to visit. As such, researchers' facilitation, coordination, and mediation sustained the sister school partnerships, kept the sister school activities moving, and enhanced the reciprocal learning in these teacher INPLCs. Teacher participants

certainly appreciated researchers' support of their international professional learning effort; metaphors of "bridges" or "match makers" or the like were mentioned many times in the interviews. One teacher said it nicely:

> You [researchers] made a bridge for us. Our school and the Canadian sister school are like two islands in a vast ocean. The bridge you created enables us to communicate and share. Your work seems to me like match making [laughing]. (CT 2, Pair 2, Interview)

In addition to the facilitation of school partnerships, the network level facilitation in the Canada-China sister school network needed to be strengthened. As I have discussed earlier, in the first two project years, few opportunities were available for teachers and principals to share their experiences and knowledge with other participating schools, educators, and researchers in the network. Researchers seemed to focus so much on building each school partnership that they paid little attention to helping participants share knowledge and experiences across the network. Some ideas that worked in a school pair could have been shared with other schools. Since researchers in the RL project usually facilitated multiple school partnerships, this kind of cross-partnership knowledge transfer could have been easily achieved. When a networking opportunity occurred, for example, the 2nd project-wide conference in 2015, more purposeful activities such as workshops or group discussions or a post-conference report shared with all participating schools, could have been designed and facilitated by the project and researchers. Networking activities were increased in the third and fourth project years as more schools from Windsor and Chongqing joined the project. However, based on what I learned from the third and fourth project-wide conferences, researchers' network level facilitation was still confined to basic interpretation for participants at these conferences. It seems that researchers in the RL project were never intended to become "bridges" beyond school partnerships due to the design of the project. If this deficiency is true, then it would be very difficult for the Canada-China sister school network to grow.

6.4.5 Needing in-Person Exchanges

During the previous sister school project (2009–2012), prior to the RL project, a few of the current 39 participants of this study had visited the

other country or the respective sister school. Only one Canadian teacher (ET 9) had visited his sister school while one Canadian principal (EP 2) visited China but not the current sister school. Only one Chinese teacher (CT 12) and one Chinese principal (CP 3) from the same Chinese school had visited their sister school in Ontario. Two Canadian principals (EP 1 and EP 3) had visited China a few years ago but not in the context of the previous sister school project, while another Canadian teacher (ET 3) had gone to China once for personal tourism purposes. In the current RL project, by the end of the second project year, none of the current 39 participants have yet visited each other. When I interviewed the participants at the end of the second year or at the beginning of the third year, no visits or arrangement of visits had occurred. It has been shown that initial face-to-face contact is crucial for the development of teachers' learning communities in the hope of increasing engagement and effect of professional learning (Wideman, Owston, & Sinitskaya, 2007). Due to the absence of face-to-face communication, there is certainly a need for in-person visits that allow for better collaborations and exchanges in these teacher INPLCs in the Canada-China sister school network.

Many participants expressed their hope to visit the sister school in person in the interviews that were conducted by the end of the second project year. Teachers found they could listen to or read about or watch by video what each other does in the classroom; however, they could not "see it in action" or "talk to kids there" or show things that "need to be shown" in person or see the "big organism" of the school (Interviews). They believe that in-person observations and exchanging ideas can enhance the collaboration between schools and teachers because face-to-face communication "creates more momentum" and may push teachers' efforts to "a higher level." Moreover, they believe that real-time observation and conversation can provide teachers more information so that they can have a deeper and fuller understanding in a way that enhances mutual learning. In short, with in-person communication, the impact of the school partnership on teachers and on the school can be increased.

> We would like to go there and have a look in person. Teaching video is different. Like, when we have open classes, students and teachers behave differently. So, we would like to have a look at their classes in real time. (CT 6, Pair 2, Interview)

> It is one thing to talk about how we do things, but it's a whole other thing to actually see it in progress. For me, I feel like I would learn a lot more, not just by having conversations with teachers, but through observing

> them and being a part of what's going on there in their day. (ET 10, Pair 4, Interview)

In particular, a few participants pointed out that there should have been some sort of initial in-person communication at the beginning of the partnership. They think that having face-to-face contact at the early stage of negotiation can create an initial bond and a sense of trust that benefits future collaboration and communication. Several Chinese teachers and principals especially feel the desire for this kind of initial in-person meeting. CT 18 in Pair 4 said that she just "needs to meet the partner in person…[because]…without in-person meeting…it is hard to say we are real friends" (Project meeting, May 29, 2015). Her principal (CP 4) resonated with her feeling while another Chinese principal (CP 3) explained the importance of initial face-to-face contact nicely by invoking her understanding of "kinship" in the Chinese culture. Speaking of her persistent commitment to the partnership with the same Canadian school, she states:

> I think the most important reason is that principals and teachers of the two schools used to visit each other in person. We developed a quite good feeling for each other. The emotional factor is the [foremost] reason as we Chinese people attach much importance to kinship…We felt the common language that the two schools share… I feel that we are close although the two schools are located in two countries. (CP 3, Pair 3, Interview)

In-person visits can also be regarded as an incentive for teachers' participation. For example, one Canadian teacher candidly reported that the main motivation for her participation is "the trip." In the interviews, two Canadian principals implied that a free trip to China can be an incentive for teachers to participate. Interestingly, the two Chinese secondary schools seemed to build the incentive of a free trip into the process of soliciting teachers to participate. In his interview, CT 1 in Pair 1 mentioned that his principal linked his participation to the prospective student exchange program that would be led by one teacher. The school administration of the other Chinese secondary school seemed to make this point clear on the outset. CT 2 mentioned the incentive and his vice principal, who is the on-site coordinator, confirmed this in their separate interviews.

> The school promises that if the partnership goes well, we will have opportunities to go abroad to visit the sister school. (CT 2, Interview)

> I hope our principal will make arrangements to send some teachers to visit the sister school. For teachers, visiting abroad is the most tangible incentive for the participation in the project. (CVP 2, Interview)

Fortunately, the directors of the RL project noticed this need and made an effort to support visits from the second project year onwards. The project attempted to send Canadian participants to visit their Shanghai sister schools in May 2015 when the second Annual General Meeting was held in Shanghai. Unfortunately, this attempt did not succeed due to an unsuccessful negotiation between the project and the Canadian school board involved. These Canadian participants, including principals and teachers, expressed their disappointment during interviews or project meetings. As I began to write this book, the RL project was arranging to financially support a few Canadian participants to visit Shanghai sister schools during the third project year while considering inviting Chinese participants to visit Ontario schools in the following project year. As a result, two Canadian teachers from one Ontario school visited their sister school and partner teachers in the second half of the third project year. The principal and two teachers from the Shanghai school also visited the Ontario school in the year after. The impact of these visits on teacher learning is beyond the scope of the book; however, based on the information from my personal communication with participants and researchers, these in-person exchanges profoundly strengthened the partnership and advanced understanding and learning between the two sides.

6.4.6 Negotiating for a Long-Term Goal for School Partnerships

The sister school network was created in the environment of the RL project. The goal of the larger project is to build cross-cultural knowledge and facilitate mutual understanding in order to benefit both sides educationally and socially. To this end, educators who are involved in these INPLCs in the school network are expected to share and build knowledge including personal practical knowledge in the process of cross-cultural, cross-system collaboration (Connelly & Xu, 2015). According to the interviews, many of the teachers and principals identify with the goal of the Canada-China sister school network. I have shown that the Shanghai participating principals seem to accept the fundamental idea

of reciprocal learning more readily than the Ontario principals. With regard to teachers, on both sides, most of them also embrace and act on the opportunity of mutual learning through collaboration. Almost all the sister school activities were designed by teachers to be collaborative work involving both parties. Some Shanghai educators reflected that this reciprocal learning experience characterized by international collaboration is more meaningful for them than their past professional learning in this regard, such as "reading journals" or listening to foreign teachers' speeches or "learning from media" or "using foreign textbooks" (Interviews). Indeed, it was due to the identification with the fundamental goal of reciprocal learning that these educators started negotiating the goal for each partnership. However, the understanding of the overarching goal of the RL project and the sister school network does not guide participants practically with regard to how to go about the international professional learning opportunity in the local reality. Each sister school partnership and teacher community needs to develop its own goal, focus, and plan of operation; each has its own particularities within which the goal is to be negotiated by the educators themselves, linking to their current work. Given obvious cultural and systemic divergences between the two sides and inherent difficulties of international collaboration, negotiating a goal or a common plan for a partnership is definitely not easy.

In Pair 1, with the departure of the Shanghai secondary school at the beginning of the third project year, the principal's dream "to see more in-depth exchanges (of students and teachers) or in-depth curriculum exchanges" was not and will not be realized even after a long period of discussion, planning, and trial between the two schools. In Pair 2, it was not until the beginning of the third project year that the two schools figured out that only Mathematics and a student environmental activity could be focal areas for future sharing and collaboration.

> Now we have focused a little bit more. We identified a few areas for collaboration [in Math]. We exchanged materials and we went back and forth… we want to see where they lead us… Right now I am possibly more interested because we want to get somewhere with this collaboration. (ET 5, Pair 2, Interview)

Pair 3 had spent much time on "talking and not with any focus or goals" before they finally agreed on something concrete to collaborate on in the second project year. At the beginning of the third year, owing to two

partner teachers' commitment and persistence Science education has become one focal area for their long-term collaboration, whereas a new pair of teachers are still negotiating their common interest.

> Our goal last year was to establish that connection of sharing water culture with the sister school…Now what we do when we are moving forward for that water culture, that's where we are now in my mind. (ET 8, Pair 2, Interview)

In Pair 4, the exchange of student artworks and an interschool student ambassador club gradually came to be seen as feasible areas of common interest after a few successful exchanges in the second project year between the two groups of teachers. In addition, several new ideas also emerged during a recent meeting (Sister School Meeting, January 14, 2016); however, it was too early to tell if these would work at the time when the data collection for this book was completed.

The process of negotiation for a common interest and plan was certainly full of difficulties. In some cases, these difficulties urged participants to seek solutions; however, some might have just given up. It would seem the departure of several teacher participants on both sides was related to these obstacles and the sense of lacking a clear goal.

> I think one of the big difficulties is…accessing the resources necessary to set up a lasting partnership…to set up something that works. (ET 7, Pair 3, Interview)

> We could not find a focal point that both sides are interested in…we didn't focus on something… Therefore, I felt that the project is not so helpful for me. (CT 12, Pair 3, Interview)

Some participants offered insights on how to set up a clear goal or plan of a partnership in a way that can "stimulate motivation and help to overcome obstacles" and enhance the effect of these INPLCs. Several teachers believe that the RL project needs to give more guidance in terms of the goal for partnerships. One teacher in Pair 2 did not seem to understand what the project was supposed to do and hence he insisted that expectations be defined for the project and "must be clearly articulated" to participants (ET 6, Interview). One Chinese teacher in Pair 3 suggested that he needs "some good suggestions" from the researchers in order to make the collaboration better (CT 13, Interview).

His colleague, the on-site coordinator, was concerned by the lack of a guiding plan at the end of the second year and thought the project might need to provide a "systematic top-level design" because "participants don't have sufficient time and theoretical thinking" (CT 14, Pair 3, Interview). Several other teachers also offered suggestions to facilitate a common partnership vision, such as "do more planning in advance" or "a set timeline" before everything began or "everybody needs to be together in order for an agenda" (Interviews).

The difficulty of reaching a common goal or plan was observed by the Shanghai principals too. At the end of second project year, three of the four Chinese principals raised the issue in their interviews while the other (CP 1) apparently lost his way since the collaboration in Pair 1 had fallen by the wayside. These principals pointed out that the lack of a goal for the partnership could affect efficiency and erode teachers' motivation. At the same time, to solve the problem, they suggested having "an annual plan," "a holistic framework," "focused topics of exchange," or a "top-level design."

> We should have a defined task and plan. Otherwise, motivation would be fading out… we should make a plan, say an annual plan, and determine periodical goals. I think this kind of planning shouldn't lag behind. (CP 2, Pair 2, Interview)

> I believe the sister school collaboration can be more systematic and more sustainable. We shouldn't do like sharing water education today, doing Lantern Festival the next day, and coming up with another thing at another time. This is a scattered way of thinking, lacking a holistic framework. This way is less helpful in terms of the development of the school as a whole. (CVP 3, Pair 3, Interview)

> We hope that the two schools can agree on several relatively focused topics of exchange. Without these focus topics, I feel that our sharing is too casual and ineffective. I would like to see that everyone has been prepared in advance of the meeting and at the meeting we share about these pre-determined topics. Our discussion can go deeper. (CP 4, Pair 4, Interview)

In contrast to Shanghai principals' demand for an overall plan for each school partnership, Canadian principals barely talked about this issue from a school administrator's perspective, probably because these Ontario principals regard the sister school partnership as their teachers' individual effort rather than a collective effort of the school. Certainly,

this difference is related to Canadian and Chinese principals' different views on the RL project, as I have elaborated earlier in this chapter. It is doubtful that a limited number of Canadian teachers' effort and commitment could eventually lead to a broader sense of shared purpose in one school partnership. Clearly, Canadian and Chinese principals' unequal expectations of the international school network made the idea of having a long-term goal for a school partnership even harder to achieve. Without a clear goal, unfortunately, a partnership would probably lose its steam and teachers' motivation to participate would decrease. Consequently, the healthy development of the envisioned Canada-China sister school network would be jeopardized.

6.5 Lessons on Organizational Conditions

To create an international school network that is conducive to cross-cultural reciprocal learning, educators' motivation and schools' commitment are important but not sufficient. From the experience of the Canada-China sister school network, it is clear that an array of organizational conditions in both the schools and the network are also necessary. The literature has proffered a list of organizational conditions that can support school or teacher networks and hence facilitate teacher growth, student learning, and school improvement. While there are some common conditions shared by most networks, such as leadership support, the goal of learning, and a culture of the community, there are still many variations depending on different features of each network and focuses of the corresponding initiative or study. These varied suggestions about organizational conditions reflect the complexity and difficulty of creating and sustaining a network involving schools or teachers. This investigation into the early stage of the Canada-China sister school network confirms some of these common conditions. At the same time, some organizational conditions suggested by the literature do not seem to apply to the emerging cross-cultural school network. For example, the intention of capacity building for the whole school in those educational reform school networks (Chapman & Hadfield, 2010; Katz & Earl, 2010; Stoll, 2010) does not seem to be too relevant to the international school network. Moreover, I find that, in addition to these common organizational conditions that are required by all kinds of networks, an international school network especially needs to handle culture and system differences

appropriately and to deal with communication and exchange issues resulting from the geographic distance.

The organizational conditions that I discussed in the context of the Canada-China school network are mostly consistent with the observations in similar international networks or partnerships in education (Edge, Frayman, & Lawrie, 2009; Edge et al., 2008; Stoll, Robertson, Butler-Kisber, Sklar, & Whittingham, 2007). For instance, Edge et al. (2009) also point out that the existing connections prior to the network or partnership are important factors to be taken into account. Particularly, Edge et al. (2008) stressed the importance of building an effective communication infrastructure at the early stage of international school partnership formation. Also, it is clear that the fledgling Canada-China sister school network needs to improve its communication infrastructure to mitigate an array of difficulties caused by the differences of time, language, and communication tools. This study highlights the importance of understanding and handling cultural and system differences if the collaborative activities in the international networks are to take root in schools or classrooms. This book reveals that divergent configurations of teaching and learning, contrasting curricula and pedagogies, and inconsistent communication culture, and even different approaches to student rights, created obstacles for the formation and development of the Canada-China sister school network and the sustainability of the collaboration and professional learning. In addition, the local education authority's support is needed due to the special partnership arrangement of the RL project. It seems that the partnership arrangement, which did not direct funding to the research schools, also complicated the early development of the Canada-China sister school network. This situation is markedly different from those international partnerships involving schools in the United Kingdom where funds from multiple sources ensured the formation and development of these partnerships (Edge, Higham, & Frayman, 2010; Edge et al., 2008, 2009).

Notably, two important organizational conditions—teacher participants' leadership and the culture of the community—were not yet evident in the Canada-China school network when the investigation for this book was completed. The importance of the two missing organizational conditions for the PLC and teacher learning is commonly stressed in other network studies (Katz & Earl, 2010; Day, Hadfield, & Kellow, 2002), as well as the literature on school-based PLCs. It seems that

the participants in the Canada-China school network have not created a common culture of the community probably because they have not had substantial direct interactions through either in-person meetings or electronic communications. Due to the distance, time difference, and pressing domestic responsibilities, the pace and scope of the interactions between the two sides do not easily achieve a satisfactory level. Also, these partnerships between schools and teachers are still rudimentary. If the shared closeness and culture of community are to occur, the continuity and frequency of interactions in these partnerships should be ensured, and probably more organizational efforts on both sides are needed. Also, the researchers of the RL project turned out to play such an indispensable role in these teacher communities that teachers tended to completely rely on these researchers as the mediators of the community culture and the facilitators of the activities in the communities. Provided with researchers' tremendous support, teachers did not feel it was necessary to take the leadership role in the collaborative activities although they owned the ideas of these activities. Instead of teacher participants, the researchers become the informal leaders of these communities. It would be ideal if teachers became the community leaders (Earl & Katz, 2007; Katz & Earl, 2010), although how this could happen in an international school network seems to need more exploration and experimentation. This kind of excessive reliance on researchers' facilitation and mediation in the Canada-China sister school network seems to jeopardize the development of teacher leadership and the community culture among teacher members and, in turn, will impair the sustainability of these INPLCs in the long run after the RL project ends. As a suggestion out of this analysis, it seems very important for external facilitators—the researchers in the RL project or other people such as university professors in other situations—to be able to deploy some kind of intentional strategies to support teacher participants in forming their own leadership and community culture in INPLCs.

It seems that two main reasons contribute to the deviations of this book's results from the literature in terms of organizational conditions of effective networked PLCs. One, each educational network can be different due to different focuses and combinations of members; different features of each network may require different organizational designs and supports. Little (2005a) duly pointed out that the research and practice of networks in education include different types of network such as school networks, teacher networks, or the networks of individuals

with the same special interests. Some of them are associated with policy implementation agendas, whereas others can be regarded as voluntary-based professional development networks (Niesz, 2007). Despite these differences, however, these networks all form learning communities and share some important characteristics such as teachers' indispensable involvement and the intention to improve teaching and learning within the school and beyond. Therefore, an investigation into teacher learning and associated organizational conditions would be important to most of these networks, although the focus of such investigations would largely depend on the context of one network and the makeup of its members.

As far as the Canada-China sister school network is concerned, it is an emerging international school network without any policy or reform agenda. It involves schools, educators, and university researchers internationally and yet the degree of each school's investment in the future network relies on the principals' and the teachers' discretion. It began with building one-to-one school partnerships; a larger cross-national school network is expected to take shape gradually. Considering these special characteristics, the notions of school network and school partnership cannot be separated in this book because the partnerships are regarded as the building blocks of the whole network. Strictly speaking, according to the information collected for the book, the new Canada-China sister school network might not qualify as a real network by the end of the first two project years, as it basically operated at the school partnership level whereas networking activities across partnerships were not yet evident. Notably, some network infrastructure was available at the outset, including the involvement of partnered school boards, shared external facilitators across school partnerships, and annual conferences and general meetings where network-wide sharing are supposed to take place. Nevertheless, the data suggest that these available networking conditions in the nascent Canada-China sister school network had not yet been utilized in a way that strengthened the network development. This situation seems to be improved to some degree since the third project year. However, based on information available to the author, the Canada-China sister school network still has a long way to go before it becomes a real international school network as its name claims. In addition, this book also suggests that other measures that can connect school partnerships to become a true network, such as a common electronic communication platform, are desired by teacher participants too. In any event, I believe that the experience of the developing Canada-China sister school

network, be it a real network or just a group of school partnerships involving a limited number of teachers in the two countries, can still contribute to the knowledge regarding building and sustaining international networks in education that might enable teacher and student learning.

Second, the international setting of the Canada-China sister school network also makes a difference. Unlike those within-system networks that are usually associated with educational reforms, international school networks are usually directed and justified either by the goal of global education (Edge & Khamsi, 2012) or by out-of-the-box professional learning (Stoll et al., 2007). The sister school network in this study is governed by an ideal of cross-cultural reciprocal learning. Consequently, international school networks might have to rely on voluntary participation and teachers or schools who participate mainly because of their special interests, which may or may not directly relate to the domestic educational requirements. Moreover, international school networks have to deal with different traditions, cultures, and education systems, in addition to the particularities of each school and each teacher that are also relevant to national school networks. These additional elements of international school networks may further complicate the creation, development, and sustainability of the networks and associated teacher INPLCs. This book only examines the early formation of an international school network. The information collected suggests that the early development of an international school network is arduous and that subsequent sustainability demands more organizational efforts than within-system networks and existing local or international networks. In the next chapter, based on the results and lessons from the study behind this book, I will propose a model for the practice and research of teacher reciprocal learning in international school networks.

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CHAPTER 7

Conclusion and Suggestions

7.1 The Unfulfilled Promise of Reciprocal Learning Space

Nowadays, teachers have many chances to be exposed to the education of other countries thanks to convenient international travel and easily accessible information on the Internet and the media. Universities and educational authorities are also diligently creating opportunities for system leaders, school leaders, and teachers to learn ideas and practices from elsewhere. The Canada-China sister school network as discussed in this book is one good example of this. Even without a special arrangement like the Canada-China sister school network, one teacher might still be able to learn about aspects of others' educational practices through the media or the Internet or other resources such as foreign guests. However, these stories about other education systems are often not reliable and possibly biased as well. More importantly, teachers might not link the information acquired in this manner to their teaching and student learning in the classroom. This kind of information about foreign education is merely anecdotal; it is not knowledge for teachers as far as teacher learning is concerned since it probably has no real influence on them. Unfortunately, acquiring contextual teacher knowledge does not seem not too feasible for most teachers. Most ordinary teachers do not have the opportunity to exchange ideas, let alone directly collaborate, with other teachers in other countries. At the same time, however,

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the discourse and policies pertinent to education internationalization can make teachers curious to learn what teachers and students in other education systems are actually doing in their schools and classrooms. Perhaps a few widely known international comparisons of education, such as PISA, also have made teachers even more eager to peek into the daily educational practices behind these ranking charts.

In the new Canada-China sister school network, I found that the majority of participating teachers reported regretfully that they had never had a chance to learn about the education of the other country. That is to say, the RL project is the very first time for most of the teachers to 'see' schools, teachers, students, and the education in general on the other side of the globe. In addition to hearing stories about how each other is doing, these teachers also took advantage of the facilitation offered by the RL project to collaborate with each other on some work of common interest. This kind of learning experience, which is akin to professional learning communities (PLCs) within education systems, is significant to these teachers. According to the social learning theories and the tenet of PLCs, teachers' mutual learning that can lead to real change may occur given observations and interactions between teachers in the communities. Another related fundamental belief about teacher education is that the improvement of teacher learning and practice can bring about improvement in student learning. In other words, in theory, in the Canada-China sister school network, the Ontario and Shanghai teachers' learning through their participation in the internationally networked PLCs (INPLCs) may affect their students' learning.

This book has depicted a unique case of teachers' cross-cultural, cross-system professional learning between Canadian and Chinese education. The cross-boundary professional learning is taking place in an emerging Canada-China school network where educators in the two countries are forming INPLCs. The two connected Chinese and Canadian education systems belong to two geographically distant places—the East and the West, which differ in many important aspects such as ethnicity, culture, tradition, and educational values. In contrast to most past studies that investigated teacher learning in networked PLC or PL networks within national education systems, this study takes a step further to probe into teachers' professional learning in an inter-cultural setting as these teachers are also provided with the opportunity to collaborate across their local boundaries. More importantly, this study squarely focuses on the two-way reciprocal learning as practitioners from two

countries interact and collaborate with each other. This approach departs from the prevalent ways of doing comparative education research—either investigating one education system or comparing two or more systems without participant interaction.

Drawing on the literature about teacher learning in PLCs and networked PLCs, this book explains why teachers are motivated to participate in the cross-cultural school network, what they have been doing in it, what they learned through the international collaboration, and how they and their work have been impacted. Overall, the results presented in this book validate the potential value of cross-cultural mutual learning through schools' and practitioners' collaborations that are embedded in their ongoing school work. Teachers on both sides mutually benefitted from the experience in multiple aspects, although the content and degree of their attainments depended on individual teachers' commitment and engagement and local organizational support in their schools. Among all the benefits, the opportunities to learn new ways of teaching, try new pedagogies by bringing international learning partners into the classroom, and raise global awareness, are particularly relevant to the teacher learning in international school networks against the backdrop of globalization. Importantly, this book also stresses that an international school network involving different cultures and systems is difficult to build and sustain. The creation and sustainability of the network and the potential benefits for teachers, students, and schools have to be accompanied by persistent efforts of funding agencies, involved educational institutes, participating schools and teachers, as well as external facilitators, such as researchers in the case of this study. In addition, this book shows that whether supportive organizational conditions are available can not only affect the development of the network but also directly affect teachers' motivation and the sustainability of their cross-boundary professional learning.

The results described in this book substantiate the idea of reciprocal learning between western and eastern education by providing a teacher learning perspective. The idea of reciprocal learning has been proffered by the two directors of the RL project and in the context of the project, it stresses cross-cultural collaboration that is grounded in practice and mutual learning between the two sides (Connelly & Xu, 2015; Xu & Connelly, 2017). This book shows that not only teacher professional learning but also mutual learning is an integral part of collaborative activities in these INPLCs involving Canadian and Chinese teachers.

The evidence shows that the teachers in the two places have exchanged knowledge, learned practices, and reshaped professional identity, although understandably Canadian and Chinese teachers' focuses and benefits of their learning may differ due to their divergent local realities. The knowledge and practices shared between the two sides reflect the current situation in the Ontario and Shanghai school education systems and the participating teachers' approaches to their respective education system and its change. The Shanghai teachers learned about Canadian education by observing it in real time and by collaborating with Ontario teachers; the Ontario teachers had the same opportunity to observe, collaborate, and learn. Perhaps this learning experience was more profound for the Ontario teacher participants since they had little previous opportunity to see Chinese school education, let alone collaborate with Chinese teachers. Indeed, it is a deep dialogue between Canadian and Chinese education at the practitioner level that bears the fruit of teacher reciprocal learning.

From an in-service teachers' PLC perspective, this book extends the emerging reciprocal learning research, as exemplified by the RL project, and shows that when teacher practitioners in two countries have opportunities to collaborate, they can engage in community and benefit from mutual learning. One of the two directors of the RL project, Shijing Xu, has been exploring the idea of reciprocal learning between the West and the East for a few years and provides several examples in this regard, including the reciprocal learning between Chinese and Canadian education and culture as Chinese immigrants interact with Canadian school education (Xu, 2006, 2011) and the potential of reciprocal learning for pre-service teacher education between the East and the West (Howe & Xu, 2013). The current book has shown that the fundamental goal of the reciprocal learning research resonates with the tenets of PLC and especially networked PLCs. Evidence of teachers' cross-cultural mutual learning has also been found in other international school partnerships and networks (Edge, Frayman, & Lawrie, 2009; Veugelers, 2005). Resonating with these earlier international studies, this book further validates that collaboration and mutual learning are inherent characteristics of school networks (Little, 2005) and that, therefore, the INPLC approach to teacher education can be applied to cross-cultural reciprocal learning research in the context of the RL project. Moreover, knowledge and insights from other international school partnerships or networks can inform the RL project and the reciprocal learning research.

Importantly, as I conclude this book, it should be noted that the results in this book mainly provide evidence of reciprocal learning at the level of individual teachers without addressing the learning at other levels of school education such as students, leaders, or the whole school. The data show that teacher reciprocal learning in the Canada-China sister school network arises out of participation in collaboration and is embedded in ongoing practice. Regardless of teachers' realizations and positive changes resulting from their participation in the network, the data do not indicate the possibility of linking the cross-boundary professional learning to the main goals of local educational reforms or school improvement agendas. The evidence from other international teacher communities (Edge, Higham, & Frayman, 2010; Edge et al., 2009) also shows that international collaborations cannot easily be linked to essential parts of the school curriculum. Notably, however, the implementation of educational reforms is usually the main purpose of school networks or teacher networks within the education system (Katz, Earl, & Jaafar, 2009; Lieberman & Wood, 2003; Veugelers, 2005). The data of this study seem to suggest that the Shanghai teachers' learning in the international school network has some limited bearing on their school work relating to education internationalization in part because their principals proactively involved a group of teachers in the school and judiciously found ways to incorporate the RL project in the school improvement agenda. For the participating Ontario schools, the learning seems only relevant to individual teachers' personal interests with very limited support for school-wide sharing and promotion. By and large, it seems that the reciprocal learning in international school networks provides an opportunity for interested teachers to step outside the system by developing new relationships and exploring new ideas and practices outside of their immediate professional boundaries. In that sense, the functionality of international teacher professional communities needs to be justified on a different basis from that of those networks within national systems, which can be justified by good results in relation to domestic educational goals such as student achievement (Katz & Earl, 2010; Katz et al., 2008). How and to what extent international school networks and educators' reciprocal learning can be translated into real educational results is probably a more important topic to be investigated following the evidence of teacher learning.

7.2 A Proposed Model of Teacher Learning in Reciprocal Learning Space

It has been pointed out that the evidence around school networks is not strong enough to make casual claims although admittedly, networked PLCs are potentially beneficial to educational change (Chapman & Hadfield, 2010). I believe that an action-oriented model of teacher reciprocal learning can be helpful for both future practice and research in this regard. Specifically, I hope a tentative model for research and practice can lead to the discussion on causality research, although this study does not intend to make causal claims. McDonald and Klein (2003) have observed that there is a theoretical gap in terms of networked PLCs and, they offered suggestions for theorizing network design including knowledge aims, knowledge sources, learning environment, and evidence of impact. Earl, Katz, Elgie, Jaafar, and Foster (2006) and their later studies also proposed and tested a theory of action for networked learning communities. Stoll (2010) provides a model that highlights teachers' learning activities and supportive conditions in school networks. Inspired and informed by these earlier efforts and based on the information gathered from the first two years' development of the Canada-China sister school network, I will propose a model of teacher reciprocal learning in INPLCs as the following figure presents.

Firstly, this model states that in order to create an effective cross-cultural reciprocal learning space for teachers, the social, cultural, and organizational and policy contexts of different places need to be taken into consideration in advance. Moreover, ideally, the differences and commonalities between education systems and schools need to be examined before the school network is formed. Subsequently, it is desirable that participants in the network, including principals and teachers, as well as researchers, if applicable, have some orientation workshops in order to discuss and familiarize themselves with these differences and commonalities which can be either conducive or inhibitive to the forthcoming international collaborations. For research purposes, knowing these differences and commonalities can enhance the understanding of the processes, content, and effects of the international school network and associated teacher INPLCs. The results of this book have clearly indicated that the differences between the two places, on the one hand, provide the source of learning and motivation for learning precisely because they contrast with each other; on the other hand, the differences pose difficulties and

challenges to the development and sustainability of the international school network as well as INPLCs. When building a school network within a certain education system, the matter of context might not be so important since the schools and teachers in the network basically share the same or similar social, cultural, organizational, and policy context. However, the awareness and analysis of the different contexts of different places that are involved in international school networks or the like has proved to be crucial (Fig. 7.1).

Secondly, supportive within-school and within-network organizational conditions need to be examined or created if they are not available. According to the results of this study, in order to create and sustain a school network that is conducive to teacher reciprocal learning, participating schools should ensure the principal's support and involvement, provide some on-site coordination, elicit students' and parents' support, allocate sufficient time for teachers' participation, assure relatively long-term commitment, and involve the local educational authority when necessary. Prior to the formation of the international school network, the local or international agency who initiates it needs to examine existing network conditions such as historical connections between and among schools and existing personal connections. External facilitation and mediation should be provided to the network to address inevitable cultural,

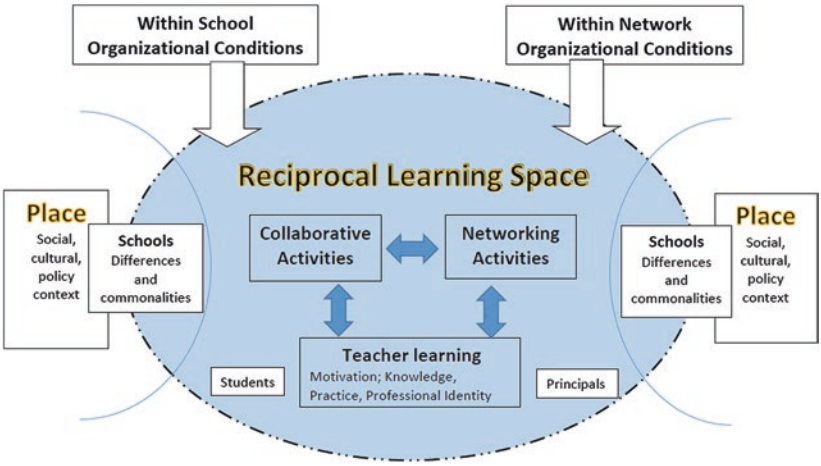

Fig. 7.1 A proposed model of teacher learning in reciprocal learning space

linguistic, or systemic divergences between or among schools in the international setting. As the network operates and develops, participating educators along with external facilitators need to handle cultural and systemic differences, negotiate the partnership or network goals and focuses, and manage communication difficulties. In-person meetings are desirable prior to or at the beginning of the network in order to build strong initial relationships and to enhance mutual understanding. If prior in-person visits are not realistic, then visits during the process of collaborations are still desirable. In addition, the external facilitators of the network need to cultivate the community culture among teacher members and foster teacher participants' informal or formal leadership of the network activities and the teacher community. It is often the case that the external facilitators will not stay within the network forever; therefore, teachers will have to take up the responsibility for the network after the facilitators' departure.

Thirdly, this model suggests that teacher reciprocal learning occurs as teachers participate in collaborative activities between and/or among schools. The forms of activities can be joint curricular or extracurricular initiatives proposed and operated by teachers from participating places. Videoconferences are also desirable because they play a very important role in building the community and directly exchanging information and knowledge. Other forms of communication and material exchanges are also encouraged in order to enrich the substance of the collaboration and mutual learning. In addition to these job-embedded collaborative activities, as the foregoing discussion has suggested, the development of the network also needs specific networking activities that can facilitate sharing and learning beyond one-to-one school partnerships. The proposed model of teacher reciprocal learning in INPLCs intentionally highlights the importance of networking activities in addition to collaborative activities. In previous chapters of this book, I did not particularly differentiate networking activities from the category of collaborative activities, which I intuitively believed encompass all activities between schools, among schools, and in the network. However, the lesson from the early development of the Canada-China sister school network suggests that networking activities actually need to be deliberately designed and organized if a viable network is expected to emerge in time. If school partnerships are the building units of the network and if networking activities are not intentionally supported, then the development of the network might stagnate at the stage of separate partnership relationships over time. The worst case might be that there would be no real network

at all. This would greatly reduce the value of the "network" and limit the potential of the anticipated cross-cultural exchange and learning, in contrast to what a viable international school network can offer. The experience of the China-Canada sister school network suggests that the further development of the network can capitalize on annual conferences or meetings, existing personal connections among schools and involved local education authorities, and shared external facilitators across school partnerships. In addition, a common electronic communication platform is desirable in order to improve participants' synchronized or unsynchronized communications and exchanges.

Fourthly, this model links the impact on teacher learning with the collaborative activities between or among schools and with networking activities. This model proposes four key areas where evidence of learning can be found, including teacher knowledge, teacher practice, professional identity, and motivation to participate. This book has shown that the teachers in the two different places can be mutually influenced by their participation in collaborative activities in the reciprocal learning space. Also, the foregoing discussion suggests that it is worthwhile to examine teachers' prior conditions relating to these four areas in order to better understand the impacts on teachers. Students and principals in the school are likely to be involved in the network, and hence they might be influenced by these collaborative and networking activities too. However, this model opts to focus only on teacher reciprocal learning rather than addressing the impact on other people in the network. This model also suggests that teachers' engagement in the activities in the network and the consequent perceived rewards from the network can also influence the operation of these activities and hence the development of network. In this regard, this model verifies an earlier conjecture that there might be cyclic effects of teachers' experience and learning on the collaborative activities and on the development of the network itself. In addition, there might be some mutual effect between collaborative activities between schools and large-scale networking activities, although the relationship between these two types of activities is not yet evident in the Canada-China sister school network.

7.3 Suggestions for Future Research

More comparative studies on in-service teachers' cross-cultural professional learning need to be conducted. While this book contributes to the knowledge of teacher professional learning in a cross-cultural setting,

little comparative research has been conducted on teacher education in PLCs and networked PLCs. This book has shown that teachers from two different countries may have similar or different reactions to professional learning opportunities outside their immediate professional boundaries. Their motivation to participate might be different; and they may be influenced differently in terms of teacher knowledge, practice, and professional identity. At the same time, organizational conditions that can support or inhibit the development of INPLCs between Canadian and Chinese schools have been contrasted. Future research can look comparatively into these aforementioned aspects in order to enhance mutual understanding and learning with regard to teacher professional learning between and among different countries and education systems.

More reciprocal learning research involving education in the East, the West, or other cultures should be conducted. This research agenda would feature practitioners' direct collaboration and mutual learning, while researchers simultaneously investigate the impact of participants' experiences and reactions. Both the study behind this book and similar earlier studies in this fashion have shown the scholarly and practical value of this kind of reciprocal learning research. Informed by the understanding of relational space, this book has illustrated an approach to reciprocal learning research that focuses on teachers' collaborations and learning in the reciprocal learning space. Future research in this regard might focus on the development process and content of collaborations among network participants and try to establish more robust relationships between these collaborations and the impact of the learning. If an international school partnership or international school network is to be established for the purpose of reciprocal learning and its research, then sufficient core funding provided by international, national, or local agencies and alternative sources should be elicited and ensured to meet the foreseeable demanding organizational requirements. Given the inevitable expense of building and sustaining these kinds of international networks, it might be wise to add some kind of cost-benefit analysis component to future analysis. This cost-benefit analysis would be conducted for the purpose of improving the allocation of funds and other resources in the network or justifying the outcomes of the network. In addition, since this study only deals with Canadian and Chinese education, it would also be beneficial to include more education systems in future reciprocal learning research.

Finally, the evidence of teacher reciprocal learning in this study mainly relies on participants' reports instead of objective observations. Although

teachers and principals' interview data provide valid evidence of learning in terms of teacher knowledge, teacher practice, and cosmopolitan professional identity, future research with observational data is desirable. For instance, in order to discern change, a researcher can observe classrooms and compare teachers' teaching and students' learning before and after teachers have participated in INPLCs. For teacher knowledge and professional identity, prior and post surveys might be good instruments to identify the impact on participating teachers. The reciprocal learning process is more complex than this study was able to assess; therefore, a fuller and deeper investigation of the impact on teachers needs more information from the virtual space. While this study primarily focused on the reciprocal learning space between the two places, I acknowledge that teachers continue to "learn" while they attempt to incorporate new ideas and practices into their teaching. Therefore, more information should be collected related to teachers' instructional practices in classrooms in the future. In particular, evidence of the impact on teaching practice and professional identity might need special attention in future studies. Ideally, a larger and more diverse sample of teachers is also desirable. With the expanding of the Canada-China sister school network, a larger sample of teachers who have similar reciprocal learning experiences is possible. With objective observations from more participants, it may be possible for future research to establish causal claims between participation in the network and the impact of learning. In addition, this study only focuses on teachers, although the data have suggested that other people in these participating schools might be impacted too. Also, it seems that the development in some participating schools is likely to be impacted by these kinds of international initiatives depending on the degree of involvement of the school leadership. Therefore, besides teacher learning and development, future research could look into the reactions, experiences, and impact on participating students, principals, as well as other people within the schools participating in an international school network.

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