

**THE JOURNEY TO EXPERT: TEACHING EXPERTISE ACQUISITION OF
TEN EARLY CHILDHOOD TEACHERS IN SHANGHAI**

A Dissertation

by

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ABSTRACT

China's principal concern for ensuring educational quality has generated an emphasis on teacher professional development efforts -- using the most effective ways to transform its teachers from novices to experts. Changes made in Shanghai, the pioneer and model of Chinese education reforms, have far-reaching effects throughout the entire country.

Through naturalistic inquiry, this qualitative study explores the meaning of teaching expertise and the process by which ten early childhood teachers in Shanghai evolved from novices to experts. Guiding research questions were as follows: How do 10 early childhood teachers conceptualize expert teaching? How do they describe their process of transforming from a novice to an expert teacher? What are the personal and supportive resources that they attribute to their professional development from novice to expert teachers? Narrative analysis on data yielded six consistent and interrelated themes (recognizing self, conceptualizing expert teacher and teaching expertise, attributing professional growth, acquiring expertise, advising other teachers and additional influences from family and life events) with each evoking a central phenomenon: professional engagement. This multi-dimensional concept is critical to teachers' growth as vigorous, dedicated and fulfilled experts.

The 10 teachers, themselves identified as experts, submitted a description of excellent practitioners who love, understand and interact well with children; who have systematic and dynamic knowledge of distinct domains associated with various age-groups; and who are critical thinkers and diligent learners with a strong sense of ethics.

Teacher expertise increases gradually with every step of their careers. This study found distinctive career trajectories for expert teachers--eight key steps with three role transitions and basic strategies. Novice teachers' careers might start or suffer from low points, but, sustained by professional engagement, they can develop personal and supportive resources to advance further.

Findings on how these Shanghai expert teachers developed and crafted their teaching skills have many implications for China's teacher preparation programs at district, regional and national levels. Since China is a member of the global educational community, research findings also have potential for international relevance as well. Application beyond China must acknowledge the cultural and social context of these Shanghai teachers' professional development to expert teachers.

DEDICATION

To my grandparents—Mingsheng Hao [郝明圣] and Shoujun Gao[高守俊].

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CHAPTER I

INTRODUCTION

To improve school education and student achievement, it is commonly acknowledged that classroom instruction quality is critical (National Commission on Mathematics and Science Teaching for the 21st Century [NCMSTC], 2000). Many studies have been conducted to examine teaching quality from an international comparative perspective (An, Kulm & Wu, 2004; Ball, Hill & Bass, 2005; Beishuizen, Hof, Putten, Bouwmeester & Asscher, 2001; Howe, 2006; Ma, 1999; Stevenson and Stigler, 1994; Stewart, 2006; Stigler & Hiebert, 1999). For example, Ma proposed that in Shanghai, China's largest city, most elementary teachers had a "profound understanding of fundamental mathematics" because they had a better subject training start than U.S. elementary teachers. She further maintained Chinese elementary teachers had more time and opportunity to develop their expertise during their professional careers. Ball, Hill and Bass also claim (2005) that most U.S. teachers are deficient in mathematics understanding and skills.

Moving teachers from novice to effective and expert status is a big priority in China (Xu; Salleh & Tan, 2013). The whole society of China has traditionally valued teachers and teacher education (Wang, 2004). Recent government policies have affected those priorities. "In 2007, the Chinese government piloted the Free Teacher Education (FTE) program in the top normal universities with the aim to enlist high-quality young graduates to join the teaching profession and to improve education in underdeveloped rural regions" (Wang & Gao, 2013).

To assist teacher development efforts, some Chinese scholars proposed various strategies which had been widely employed in practice: teachers' ranking and promotion policy; open-classes and expert-teacher-mentoring customs; the exemplary lesson development model; and teaching contest platforms (Huang & Bao, 2006; Li, Huang, Bao & Fan, 2011; Li & Li, 2009; Wong, 2001). In addition, some proposed a more thorough, full-scale method of professional development in China--curricula reform, a "hybrid model of teaching and teacher development" (Paine & Fang, 2006). In this process, effective teaching is identified and disseminated (Huang, 2004). As a traditional but effective strategy, expert teachers and exemplary lessons are normally recommended by municipal or district-based teaching and research offices to general teachers all over the local area that are supposed to adopt good practices according to different teaching contexts. This is a normal practice that takes place across China including preschool education.

Consistent evidence from studies exhibits a remarkably high positive correlation between early childhood experiences and later achievements (Buysse, Castro, & Peisner-Feinberg, 2010; Early et al., 2007; Hyde et al., 2009; NICHD Early Child Care Research Network, 2005, 2010). For example, findings from Howes et al. (2008) suggest that children could experience better academic outcomes under higher-level instruction or better teacher-child relationships.

Based on Howes, Sun and other scholars' studies, it seems we can predict that excellence in classroom instruction might start very early. Some studies indicated that even Chinese kindergarten children had better number sense and mathematics

achievement than their international counterparts (e.g., Sun, 2009). Early childhood education or preschool education (mainly for 0-6 year olds) in China is part of a national basic education system, although not compulsory for all children (McMullen et al., 2005). Early childhood care and education (ECCE) programs cover about a third of children (0-6 years old) through collaboration among health, education and civil administration departments; they “hold a prominent place in China’s goals for economic and educational success” (Trube, Li & Chi, 2013).

As the largest city in China, Shanghai clearly has played a leading role in education reform, along with economic and social transitions within China in several recent decades (Li, 2003; Liu & Fang, 2009; the Organization for Economic Co-operation and Development [OECD], 2010b; Wu, 2000). At the international level, Shanghai students remarkably outscored their American and other countries’ peers on Program for International Student Assessment (PISA) in math, science and reading in 2009 and 2012 (OECD, 2010a, 2013).

In Shanghai, providing appropriate preschool education is regarded as a governmental service. As part of the Three-Year Action Plan in Preschool Education initiated by the municipal government in 2006, Shanghai constructed, renovated or expanded 400 kindergartens in order to deal effectively with the admission peak. There are a total of 1,252 public kindergartens (mainly for 3-6 year olds) and 400,300 preschoolers. Enrolment for 3-6 year-old children for preschool programs in Shanghai is at 98%, already surpassing the new national goal for 2020. More than 95% of parents and caretakers of infants and toddlers can access educational services (such as home

visiting) at least 4 times per year (OECD, 2010b; Shanghai Municipal Education Commission, 2011). Most kindergartens in Shanghai (mainly for 3-6 year olds, although some include 2-3 year olds) belong to the public school system. Nearly all the policies and customs for teachers are consistent from kindergarten to high school.

Furthermore, in past decades the preschool curriculum in China was divided into various subjects and organized like elementary schools (Hoot, Parmar, Hujala-Huttunen, Cao & Chacon, 1996; Vaughan, 1993; Wang & Mao, 1996). In 1998 Shanghai launched “the 2nd-term Curricula Reform” in basic education (OECD, 2010b). Reformers in China are trying to find a suitable way for their country to include Confucian traditions, socialist ideas and western ideas (Mcmullen et al., 2005; Vaughan, 1993). Under the guidance of Shanghai Curriculum Guidelines of Preschool Education, the curricula and teaching materials have changed greatly compared with ones in the past (Shanghai Municipal Education Commission, 2004). In terms of national educational policy, the Guidelines regard learners as more active to participate in developing their curricula. Such practice gives prominence to integration of the curricula, co-construction by teachers and children, and the requirements of individual education. The curricula are enlightened, integrated and open (Shanghai Municipal Education Commission, 2005; Huang, 2011). Teachers have tried to implement the Guidelines in their practical teaching activities. Expert kindergarten teachers in Shanghai are recognized as model teachers in this process across the country.

However, the demand for high quality teachers is urgent throughout the educational system, especially in Shanghai and other places in China. Recently, many

novice teachers from majors other than preschool education poured into kindergarten classrooms in Shanghai. This was done to meet the high demand for teachers due to the new peak in birth rates. Pianta et al.'s study (2005) indicates that when teachers have little formal training (or they are without a degree) in preschool education and have fewer child-centered beliefs, high quality practices in their classrooms cannot be expected. For early childhood classrooms, one practical way to enhance educational quality is to transform existing teachers into more effective teachers. In this process, expert teachers can provide considerable support for novice teachers (Feiman-Nemser, 2001b; Stanulis & Floden, 2009).

Therefore, research on expert teachers in kindergartens is meaningful and necessary. If we find expert teachers' attributes contributing to teaching expertise or professional development that can be borrowed, the results will not only benefit the preschool education in Shanghai, but they also can be the basis for constructing teacher learning theory and teacher education policies all over the world.

At the same time, identifying research gaps can give hints to discover potential study areas. First of all, experts always transform from novices. It is a dynamic process, but many studies only focus on the two opposite ends--novice and expert, or only one of them. For instance, Berliner (1988) proposed five phases of development, but he said little about the trajectory of expert teachers and the factors that push novice teachers to go through all these phases to be experts (Dall'Alba & Sandberg, 2006). Berliner also thought some teachers might never reach the last phase because of limited capability. Second, researchers normally paid much attention to the teaching of teachers or learning

of students, but little attention to the way beginning teachers learn to be expert teachers, which is critical (Kelly, 2006; Lave & Wenger, 1991). Unfortunately, we know little about the learning process of teachers (Lieberman, 1995; Wilson & Berne, 1999). A few studies have addressed it generally, or from a cognitivist perspective (Livingston & Borko, 1989).

Statement of Problem

In the global economy era, education needs an internationalized dimension. At the international level, Shanghai students remarkably outscored their peers from other countries on Program for International Student Assessment (PISA) in math, science and reading (OECD, 2010a, 2013).

Shanghai, the largest city in China, has held an important position in educational reform for decades. Early childhood education there differs markedly from prior Western stereotypes (as teacher-centered, only emphasizing teaching knowledge and skills). And expert early childhood teachers are widely recognized as model teachers across the country. The researcher's personal interactions with many of them through employment with the Shanghai Education Commission have prompted a long-time fascination with the following question: How can they have so much fantastic individual teaching expertise with a passion that lasts throughout their careers? In a typical centralized educational system with collectivist work ethics under the influence of Confucian culture, personal voices of these remarkable teachers tend to be ignored or drowned out (Kim, 2005; Rarick, 2007).

Personal Story

As an insider of early childhood education, I believe the Chinese educational and cultural context involving us all made the discourses richer and more productive. First, Shanghai was developing the “2nd-Term Curriculum Reform” (launched in 1998) when I began my career there. I experienced the whole process from startup to trial implementation to comprehensive popularization. Second, I was familiar with classroom teachers all over Shanghai, especially those top teachers, because they have more opportunities to give open lessons (teachers open their lesson or classroom for their colleagues to observe and comment as a part of lesson study). I had made special reports for almost all of them; reports focused on their teaching and professional growth. Third, as one of a few graduates with a Master Degree in early childhood education, during the first year I worked in Shanghai, I was assigned to the most famous early childhood teacher’s classroom for half a year. I stayed with her every day, observing her teaching and attending their lesson studies. All of this tacit knowledge equipped me well for further interview and study.

Purpose

This study was conducted to listen to the real voices from expert early childhood teachers in Shanghai, mainly through face-to-face interviews and focus groups, to explore the meaning of teaching expertise and the dynamic process of evolving from novices to experts. Such a dynamic process and the resources contributing to the process, might yield very practical applications, as well as very promising topics for future studies. Several research questions guided this study. What are the trajectories that

novice teachers have gone through to become experts? What kinds of resources contribute to their development? How do novice teachers learn to be experts from a constructivism perspective, including a socio-cultural perspective, (Kelly, 2006). This naturalistic inquiry employs some qualitative methods (e.g., narrative analysis, focus groups) that are rarely used to study Chinese teacher development in early childhood education.

Research Questions

The primary purpose of this research was to study the journey of how 10 Shanghai early childhood teachers developed from novices to experts. The guiding research questions were:

1. How do 10 early childhood teachers conceptualize expert teaching?
2. What are the personal and supportive resources that 10 early childhood teachers attribute to their professional development from novices to experts?
3. How do 10 early childhood teachers describe their process of transforming from a novice to an expert teacher?

Significance

The research conducted is based on the analysis of the lived experiences of early childhood teachers in China who have earned the reputation of “expert teacher.” This means that they have earned top awards and recognition in early childhood education in China, a country with 1.3 billion people. Very few early childhood teachers in China have the status of “expert teachers.” According to a policy issued in Shanghai, the proportion for senior positions in elementary schools and kindergartens is between 10%-

15% and not all these teachers are regarded as expert teachers (Shanghai Municipal Personnel Bureau, 2004).

Early childhood teachers are essential to any education system. How these Shanghai teachers developed and crafted their pedagogical practices has implications for teacher preparation programs at the national and international levels. The research is highly significant since developing high quality early childhood teachers can impact the educational quality, and automatically, the future of any country.

Findings from this study are relevant to the development of both theory and practice in early childhood teacher education. First, expert teachers are living models and, through their experiences, they can provide practical strategies for practitioners reflecting and employing best practices by which to acquire teaching expertise. In addition, the results of the study can inspire teacher educators and policy makers as they work to transform early childhood teacher candidates into effective expert teachers. Finally and most importantly, children can benefit from all these efforts in the name of providing high quality instruction. Examination of the career pathways and professional experiences of expert early childhood teachers also can expand existing theories of professional development, teaching expertise and teacher engagement.

Overview of Organization of Dissertation

This dissertation consists of seven chapters. Chapter I provides an introduction, including statement of the problem, purpose of the study, research questions and significance. Chapter II is a review of literature concerning teacher education and professionalism, expert teachers and teaching expertise, along with existing relevant

theoretical frameworks. Chapter III presents methodology: rationale of methods used; data collection and analysis; and the trustworthiness of the research findings. Chapter IV gives demographic information on all 10 expert teachers. Chapter V presents the preliminary findings. And Chapter VI further provides an integrated discussion of findings for each research question, a proposed framework on professional engagement. Finally, the dissertation concludes in Chapter VII with summary, conclusions along with implications and recommendations for future practice and studies in early childhood teacher education.

CHAPTER II

LITERATURE REVIEW

Introduction of Organization

The literature review is organized into four sections. The first section introduces education and reforms in China, more specifically, early childhood education reform in Shanghai. The second section concerns teacher preparation and professional development in general and early childhood more specifically. The third section introduces a specific review of literature on expert teachers and teaching expertise, mainly in the US and China. The fourth section provides the theoretical frameworks for this study.

Education and Reforms in Shanghai, China

China and education system

China has a population of over 1.3 billion people, who consist of 56 national tribes from 32 province-level administrative regions, including 23 provinces, 5 autonomous regions, and 4 municipalities that include Shanghai (National Bureau of Statistics of China, 2006). China has the largest educational system in the world (People's Daily Online, 2007). The number of students who took China's 2013 National Higher Education Entrance Examination (Gao Kao) has amounted to 9.12 million (Wu, 2013).

In China, dating from the 1950's, there has been a highly centralized education system, although China has tried to catch up with the global decentralization trend in education since implementation of the economic and social reforms in 1978. Normally

education systems in East Asia (where the primacy of the collective is stressed over the individual) demonstrate characteristics of centralization. For example, the central governments are responsible for developing, designing, executing and monitoring every aspect of education, including the curriculum, textbooks, administration, funding, student enrollment and employment, as well as, teacher preparation and education (Hawkins, 2000; Leung, 2004; Ngok, & Chan, 2004).

The education system in China consists of four (4) components: basic education; occupational education; higher education; and adult education (demonstrated in Figure 2.1). Further, basic education covers the following four (4) stages: pre-school education; primary schooling (6 years); junior (3 years) and senior (3 years) secondary schooling. Among them, the schooling from primary to junior secondary is free, 9-year compulsory education (The Center on International Education Benchmarking [CIEB], 2013; Xinhuanet, 2003).

Early childhood education in China (mainly preschool education for 0-6 year-old children), especially kindergarten, is part of a national basic education system, although not compulsory for all children (McMullen et al., 2005). Kindertens (Youeryuan [幼儿园], which provide full day programs) normally enroll 2 or 3-6 years old children, so they are different from the one-year kindertens normally affiliated with elementary schools in the U.S (Hu & Roberts, 2013). And, Chinese kindertens have public and private types in terms of funding sources. The former means that the ownership of kindertens belongs to various level governments from the central to local (Hu &

Szente, 2009). In 2012 kindergartens in China accommodated 36,858 million children (National Bureau of Statistics of China, 2013).

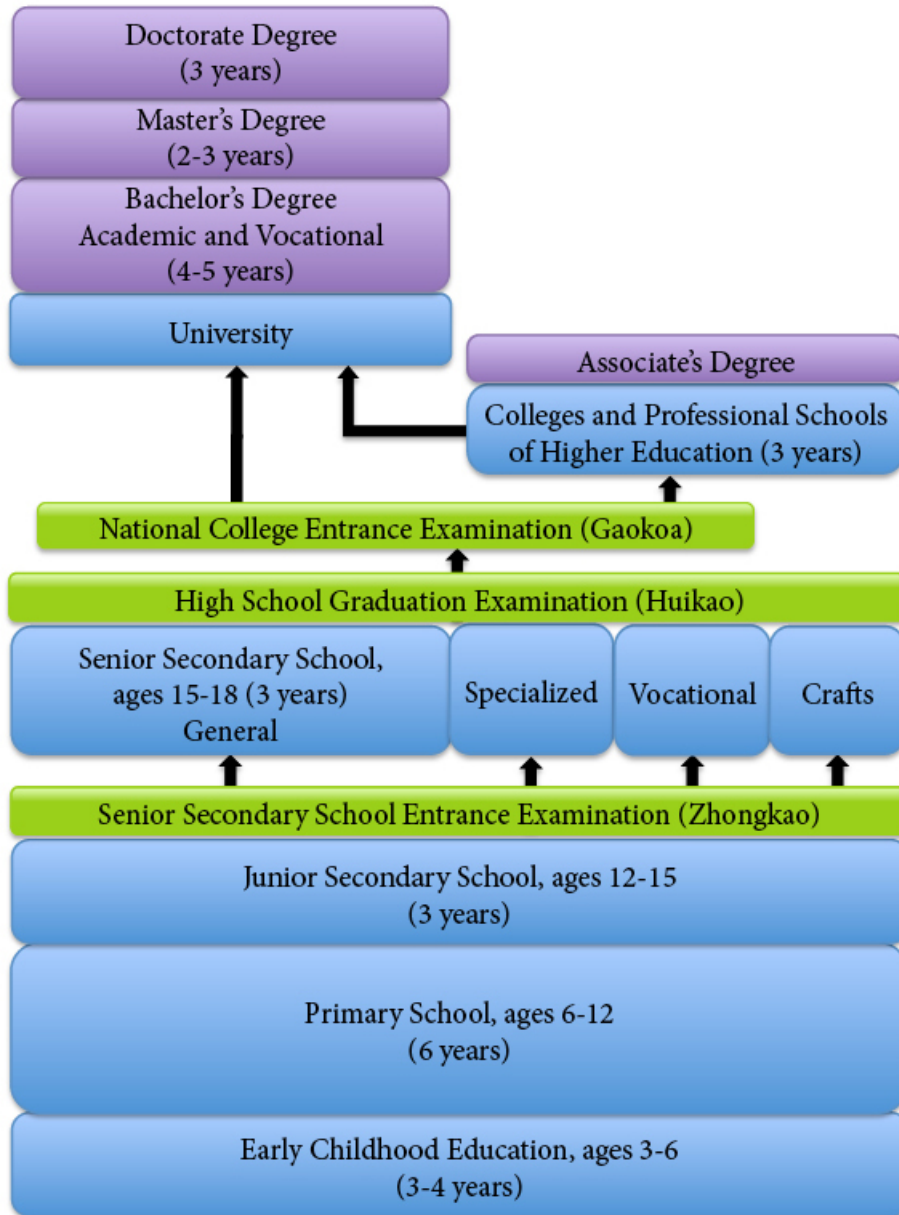


Figure 2.1. China's Educational System at a Glance.

Source. The Center on International Education Benchmarking (CIEB, 2013). Adopted with permission.

Influence of Confucian culture

In retrospect, education in China has undergone a long and arduous course. Confucius (551-479 BC) is a great philosopher and educator of the Spring and Autumn period of Chinese history during the mid-Han dynasty. He was revered as Supreme Sage and Model for Ten Thousand Generations by previous dynasty emperors. He opened the learning doors to all the pupils, regardless of their socio-economic status. He committed his life to teaching because he believed in education's essential function for both societal and individual development. For Confucius the ideal education is to cultivate the whole person—a gentleman. His influence has reached the every aspect of China even beyond the country for 2,000 years (Chen, 2005; Low, 2010; Yang, 1993).

Under the influence of Confucian culture, respecting teachers and valuing education have been a tradition in China (Ko & Adamson, 2011; Marginson, 2011; Ramburuth & McCormick 2001; Tran, 2013). Meanwhile, historically, Chinese used an examination-oriented education system in which the imperial government selected officials according to the results of a series of examinations. These examinations, focused on the *Four Books and Five Classics* (works of Confucius), historical works and classic literature, as well as, the skills of eight-Part Essay (Baguwen), poetry composing, and calligraphy (Dello-Iacovo, 2009). Further, teacher-centered, one-way instillation and rote-memory were the main teaching and learning methods in classrooms. Even in early twentieth century, Western style schools in China continued to demonstrate many characteristics of the traditional imperial methods (Dello-Iacovo, 2009).

Changes in China society

Since the People's Republic of China was established in 1949, education, like every other field, imitated the Soviet system to promote economic development while maintaining socialist ideals (Hannum, 1999; Louie, 1984). In 1966, Chairman Mao Zedong initiated the Cultural Revolution (1966-1976), a turbulence that lasted for 10 years. With a radical leftist standing, it resulted in national chaos, economic disarray, and political cruelty, as well as educational stagnation, or backwardness. During this period, all intellectuals (including teachers) were labeled the "stinking Number Nine" and persecuted. Using politically-biased textbooks, almost a whole generation of Chinese received little education under constant political movements (An, Capraro & Hao, 2011; Hannum, 1999).

To rebuild the devastated country, there are many reform efforts and policies that have impacted China education greatly after the Cultural Revolution. The most important two policies were embarked upon in 1978. One policy was Reform and Open-Up Policy, which changed all of Chinese society. Before that, the communication between China and other countries was extremely limited. This policy impacts education and economics, and has had a tremendous influence on the social and cultural structure of China. This policy also paved the way to the integration of western culture and assisted in furthering globalization while maintaining Chinese traditions (Tsang, 2000). McMullen and his colleagues (2005) argue that China will face challenges to maintain its traditions while seeking a global status. These authors also contend that China must reform its curriculum.

Another important policy closely relevant to education is China's one-child-per-family policy, which was initiated in 1978 to control population growth. It was regarded as an essential measure to aid economic reform and improve living standards (Hesketh, Lu & Xing, 2005). Thus, Chinese children have to face high expectation from their parents as the only child of their family, even from very early years (Hu & Szente, 2009). Additionally, formal education is more valued because the early childhood institutions (mainly kindergartens) can provide socialization settings for those only children in their families (Zhu & Zhang, 2010).

Education reforms in general

Due to the need for a high quality workforce as a result of the 1978 reforms, the educational system received more and more official attention. In 1986 China passed the Compulsory Education Law. To prepare members of society with basic literacy and numeracy, this law states that all Chinese children from the age of six have the right to attend nine years of schooling, from elementary to junior secondary school with free tuition (Law, 2002; Sun, 2010).

Another law that is relevant to education is the 1993 Teachers' Law. This law provides teachers higher social and economic status in society. It also ensures that teachers' professionalism is institutionalized. Teachers should possess academic qualifications and necessary knowledge and skills. Other relevant laws include the Regulations on Degrees (1980), Education Law (1995), Vocational Education Law (1996) and Higher Education Law (1998). All these laws set up a legal framework for China's educational system (Law, 2002).

Accordingly, educational policies were initiated regarding the curriculum. For example, the “Central Committee Opinions on Further Strengthening and Reforming Moral Education in Schools” (1994) emphasizes quality education focusing on whole person development. The curriculum reform “Cross Century Quality Education Project” (1999) was to reduce students’ workload and more non- examination-oriented teaching methods were advocated. The Basic Education Curriculum Reform Outline (Trial, 2001) and the 2003–2007 Action Plan for Invigorating Education (2004) explicitly targeted quality-oriented education. The curriculum has changed greatly from a traditional one to “quality education (suzhi jiaoyu)” versus examination-oriented education (yingshi jiaoyu) (Dello-Iacovo, 2009).

Through efforts over the past 25 years, China has fully attained the goals of making nine-year compulsory education universally available and basically eliminating illiteracy among young and middle-aged adults (Wen, 2012). Now about 4% of the total Gross Domestic Product (GDP) in China, i.e., 2198.463 billion Yuan (Chinese currency), is invested in education. The government promises it will continue to give high priority to developing education (Wen, 2012).

Education reforms in early childhood

The Reform and Open –Up Policy of 1978 not only changed basic education but also had an impact on early childhood reforms (Liu & Fang, 2009). Many western education theories were introduced to early childhood education in China from the outside. The early childhood education reform started with spontaneous experiments in some cities in single subject, and then expanded to the whole curriculum and country

(Zhu & Zhang, 2008). Due to the growing global convergence (Baker & LeTendre, 2005; Paine & Fang, 2006), early childhood education reformers in China are trying to find a way appropriate to their own national circumstances among Confucian traditions, socialist ideas and western ideas like Developmentally Appropriate Practice (DAP), individual creativity, autonomy, and critical thinking (Hu & Szente , 2009; McMullen et al., 2005; Vaughan, 1993; Zhu & Zhang, 2008).

In 1989, the National Education Committee (the former Ministry of Education) issued the first critical measure, the “Kindergarten Work Regulations and Procedures.” The main spirit of it is to emphasize child-initiated activity, individual differences, the importance of play, an integrated curriculum and children’s learning process. The “Regulations and Procedures” were disseminated and implemented across the country quickly (Zhu & Zhang, 2008).

The year of 2010 is regarded as a milestone in the development of early childhood education (Zhou, 2011). A new policy was put forth. The Outline of China’s National Plan for Medium and Long-term Education Reform and Development (2010), provides a blueprint of the modernization of education for the next 10 years.

Universalizing preschool education is among its concrete goals. To achieve this goal, the Outline claims the government has the main responsibility for providing early childhood services and that it will invest more, especially for disadvantaged children. Meanwhile, it calls for improving quality of teachers and programs. Further, all provinces --including Shanghai--are required to issue a Three-Year Action Plan to implement this policy.

Also, in 2010, the China State Council published a new policy, Issues Regarding Current Development of Early Childhood Education (The State Council, 2010). It identified the 10 top priorities in early childhood education. These issues were:

1. Developing early childhood education should assume a more important position in the nation;
2. Expanding early childhood education resources in a variety of ways;
3. Strengthening the building of teacher capacity;
4. Increasing the level of investment for early childhood education services in a variety of ways;
5. Strengthening management of the early childhood education program application and licensing system;
6. Strengthening the security of early childhood programs;
7. Regulating and managing the fees for early childhood programs;
8. Applying scientific care and education to improve children's healthy development;
9. Improving the working mechanism and strengthening organizational leadership; and
10. Developing and implementing early childhood education through a Three-Year Action Plan. (Zhou, 2011)

Each provincial government was requested to submit an action plan to the State Council. The Ministry of Education will monitor the implementation of all these plans.

Shanghai and early childhood education reforms

Shanghai is among the four largest cities in China that has the governmental status of provinces. With about 23 million people, Shanghai is one of the largest cities in the world. It has 1% of China's population, but one-eighth of China's income. As China's business capital and one of most internationalized cities, the Chinese government allows Shanghai to exercise a certain degree of autonomy in policy innovation besides carrying out the central policies. This is an integral part of the country's role in establishing globalization (Ngok, & Chan, 2004). While Shanghai is not the most typical representative of the whole country, as the only comprehensive education reform pilot in China, Shanghai has the ability to introduce and monitor new ideas that have the potential to be used in other parts of the country. In fact, Shanghai is a model city that impacts other changes from the coastal provinces to the interior provinces (The Center on International Education Benchmarking [CIEB], 2013).

After implementing the Three-Year Action Plan in Preschool Education (2006—2008), Shanghai constructed, and renovated or expanded 400 kindergartens, increasing to 4,900, the number of preschool teachers. This was done in order to deal effectively with the dramatic increase in enrollment (Shanghai Local Chronicles Office, 2009). There are totally 1,252 independent kindergartens (1,709 branch campuses, 396 private), 400,300 preschoolers. The enrolment of 3-6 year old children for preschool programs in Shanghai is 98%, the national level in 2009 was only 51% (Zhou, 2011), already surpassing the new national goal for 2020 of basically popularizing preschool education.

And the service has been extended to 0-3 ear old children_ More than 95% of parents and caretakers of infants and toddlers can get more than four times scientific guidance per year. Most kindergartens (about 70%) in Shanghai belong to the public schooling system (OECD, 2010b; SMEC, 2011). Preschool teachers share the same advantages and strengths in professional development as other teachers within this system. Nearly all the policies and customs for teachers run from kindergartens to high schools.

Shanghai has the most developed basic educational system in China, and is the only national area where comprehensive reforms are piloted. As such, Shanghai launched the “1st-Term Curriculum Reform (1988–1997)” and the “2nd-Term Curriculum Reform” (1998–present). The latter piloted in nearly 200 public schools (including kindergartens) first, then fully implemented all over Shanghai now (Tan, 2012).

Shanghai students outperforming their counterparts in the Programme for International Student Assessment (PISA) or the Trends in International Mathematics and Science Study (TIMSS) at least partly indicated success of the curriculum reforms (OECD, 2010b; Tan, 2012).

In the past decades before the reforms, the preschool curriculum was divided into various subjects, and organized like elementary school (Hoot, Parmar, Hujala-Huttunen, Cao & Chacon, 1996; Vaughan, 1993; Wang & Mao, 1996). Under the guidance of Shanghai Curriculum Guidelines of Preschool Education (Shanghai Municipal Education Commission [SMEC], 2004) for the “2nd-Term Curriculum Reform”, the curricula and teaching materials have changed greatly compared to the past. Consistent with the national educational policy, the Guidelines regard learners as the center of the

curriculum, which gives prominence to integration of the curricula, to co-construction by teachers and children, and to the requirements of individual education. The curricula are enlightened, integrated and open (SMEC, 2005; Q. Huang, 2011). Teachers have tried to implement the Guidance in their practical teaching activities. The exemplary case lesson analyzed by Hao, Rackley and Li (2012) is one of those attempts from an exemplary kindergarten which features mathematics education in Shanghai.

In accordance with the action of implement curriculum reforms, Shanghai makes great efforts to improve teachers' capacities. Besides higher education background requirement, all teachers should accomplish at least 240-hour professional development (CIEB, 2013). Furthermore, from 2006 Shanghai initiated two terms of Shanghai Famous Principle and Teacher Educating Project, set up 86 municipal famous principle and teacher education centers to support about 2000 potential master teachers. There are totally 130,000 elementary and middle school (including kindergarten) teachers (Wang & Dong, 2012). In 2010, about 71.7% of them had bachelor's or higher degrees (SMEC, 2011). Recently the kindergarten teachers have increased to 250,000 from 150,000, but Shanghai still faces a shortage of teachers due to a rising Pre-K admissions. The departments of East Normal University and Shanghai Normal University are increasing college enrollments to enrich the capabilities of kindergarten teaching staff (Peng, 2011).

Teacher Preparation and Professional Development

Teacher preparation

It is commonly acknowledged that classroom instruction quality is critical to improve school education and student achievement (NCMSTC, 2000). Actually, before

teachers enter real classrooms, student achievement might be predicted by the preparation level of pre-service teachers. Based on a review of 92 studies, Allen (2003) raised 8 questions on teacher preparation to address critical factors influencing teacher effectiveness: solid subject knowledge; pedagogical coursework; high quality field experience; alternative route programs; teacher preparation strategies; program entrance requirements or selective screening program; accreditation program; and institutional warranties for novices. Further, Kukla-Acevedo's study (2009) on the relationship between teacher characteristics and student achievement indicated that academic performance and subject course hours relevant to overall math and math education of math pre-service teachers could positively predict their 5th graders' math achievement.

Early and Winton (2001) conducted a national survey on early childhood teacher preparation programs at universities and colleges. They found that most programs were designed for children over 5-years-old, lacked sufficient faculty with experience working with diverse populations, and lacked instruction in some key content areas (as for students with physical and educational disabilities).

In China, teacher preparation programs normally mean three or four year programs in high education institutions. Students in these programs must complete subject and pedagogy courses, and field experiences. Liu and Qi (2006) compared the teacher preparation in China and the United States from the following aspects: standards and requirements about program admission, field teaching and graduation, various courses relevant to general education, education foundation and pedagogy, and subject matter (see Table 2.1). China, like the US, has similar programs of admission and exit

evaluation, field teaching, courses about education and pedagogy. However, China requires many more content courses (37.3% versus 8.2%), while the U.S. program requires for more credits in pedagogy and field teaching (9.5%, 3.1% versus 26.7%, 8.2%).

Table 2.1. Complete Program Course Requirements: Number of Units and Percentage of Units by Category

| | TED Program in China | | TED Program in the U. S. | |
|---------------------|----------------------|-------------|--------------------------|-------------|
| | # of units | Percent (%) | # of units | Percent (%) |
| General | 81 | 41.3 | 66 | 45.3 |
| Education/Other | | | | |
| Ed. Foundation | 19 (6) | 12.4 | 17 | 11.6 |
| Pedagogy/Curriculum | 12 (6) | 9.5 | 39** | 26.7 |
| Subject Matter | 73 | 37.3 | 12 | 8.2 |
| Student Teaching | 6 | 3.1 | 12 | 8.2 |
| Total | 193 | 100 | 146 | 100 |

* This is a hypothetical plan based on a student’s selection of 12 units in educational foundation and pedagogy courses.

** Methods courses in the U.S. program include capstone (comprehensive teaching of particular subjects) requirements.

Source. Liu and Qi (2006). Copyright by International Education. Adopted with permission.

Teacher professional development

Professional development means “a comprehensive, sustained, and intensive approach to improving teachers’ and principals’ effectiveness in raising student achievement” (National Staff Development Council [NSDC], 2009). As a the second

part of a larger study, the Status of Professional Development in the United States, scholars from Stanford University (Wei, Darling-Hammond, & Adamson, 2010) confirm effective professional development should involve the following characteristics: being intensive and sustained, embedded in work routine through school- or district-based learning communities; closely relevant to teaching practice and necessary subject-matter and pedagogical knowledge, with district policy coherence across designing, conducting and assessing curriculum. They further examined the professional status in the United States finding that there was progress in the areas of induction supports and content-focused activities, but little progress was seen in terms of intensity. In addition, they found differences among schools in the areas of race and poverty.

Helterbran and Fennimore (2004) emphasize collaboration among teachers, administrators and teacher educators. They advocate three-step professional development for early childhood teachers: first conduct action research in classrooms collaborating with university researchers; second, solve specific questions in practice; last, expand the methods to long-range teaching.

Many studies have been conducted to examine teaching quality at the international level (An, Kulm & Wu, 2004; Beishuizen, Hof, Putten, Bouwmeester & Asscher, 2001; Howe, 2006; Ma, 1999; Stewart, 2006; Stigler & Hiebert, 1999). After analyzing several countries' best teacher induction programs, Howe (2006) found the commonality among them was creating opportunities for novice teachers to learn from experts: observation, discussion and reflection.

Teaching has always been a highly respectable profession in Chinese history, yet, during the Cultural Revolution, attention to teaching was lessened. However, the Teachers Law of China (1994) restored attention to the teaching profession. This was a part of the movement to improve the educational system. Therefore, teacher education became connected to whole society and issues about teacher education were a concern for the government (Wang, 2004). Furthermore, moving teachers' skills from novice to expert level became a focus in China (Xu, 2013; Salleh & Tan, 2013).

Normally, teachers in China have already spent considerable time sitting in those experienced teachers' classrooms with strong subject-matter knowledge before coming on board. Further, they can get systematic induction and continuous professional development at various levels of teacher developing communities through engaging in lesson studies instructed by master teachers (Ma, 1999; Mok, 2003; Seago, 2004; Stewart, 2006).

Some scholars with a Chinese background proposed strategies like teachers' ranking and promotion policy, open-classes and expert-teacher-mentoring customs, exemplary lesson development, and teaching contest platforms (Huang & Bao, 2006; Li, Huang & Yang, 2011; Li & Li, 2009; Wong, 2001). In China's basic education, teaching contests can be regarded as formal professional development activities. There are many teaching contests among teachers younger than 40 years old. These contests are sponsored at different levels-- the nation, a province, a city, a district or a school. Normally winners will have chances to be selected to attend next higher-level contests. Teaching contests are organized in various formats, which might include traditional

classroom instruction, instructional design. The awarded teachers are often asked to give model lessons to others as a way of teacher training (Li & Li, 2009).

Besides, a more thorough and full-scale method of professional development in China is curricula reform (Paine & Fang, 2006). In this process, effective teaching is identified and disseminated (Huang, 2004). As a traditional but effective strategy, expert teachers and model lessons are normally recommended by municipal or district-based teaching and research offices to general teachers all over the local area; they are supposed to adopt good practices according to different teaching contexts.

In East Asia expert teachers play a guiding role in the local teaching culture (Li & Shimizu, 2009). Modern technologies such as the Internet, VCDs, and educational television can maximize their demonstrative values further for meeting the needs of the big population in China. Even schools in rural areas like Gansu province have had successful experiences using Video Compact Discs (VCDs) to enhance teaching quality (Kin, Lee & Wang, 2005).

Some concepts associated with professional development

The first concept is professionalism. In his study Rowe (2006) argues that since teachers are the most valuable resource available to schools, an investment in teacher professionalism is vital to ensure that teachers are equipped with an evidence-based repertoire of pedagogical skills. These skills are effective in meeting the developmental and learning needs of all students.

Teacher professionalism is a way to prepare teachers to meet individual needs of students and the changing demands of the society (Darling-Hammond, 1990). “Professionalism was usually interpreted as an occupational or normative value, as something worth preserving and promoting in work and by and for workers” (Evetts, 2013). Glazer (2008) claims educational professionalism is the result of complex interaction between practice and settings pointing at each other. Darling-Hammond (1990) proposes that there are three (3) principles underpinning a profession like teaching, so practice should be student-oriented and knowledge-based. To pursue professionalism teachers have an obligation to try their best for students’ best interest based on knowledge from research and clinic.

Another concept is engagement. Professional engagement of teachers was defined by Becker and Riel (2000) as teachers making efforts collectively to improve teaching. This definition limited the concept within behaviors. The literature reveals very little focused specifically on this concept. A similar concept -- “work engagement”-- is attracting increasing attention, however. “Work engagement is a broad concept, comprising a variety of multidimensional constructs and experiences, including affects, cognitions, and behaviors” (Sonnetag, Dormann, & Demerouti, 2010, p.25). Schaufeli and his colleagues (e.g., Hakanen, Bakker & Schaufeli, 2006; Schaufeli, Salanova, Gonza´lez-Roma, & Bakker, 2002) have done much research on this topic. According to Schaufeli et al. (2002), work engagement is “a positive, fulfilling, work-related state of mind that is characterized by vigor, dedication, and absorption” (p.74). Further, Hakanen, Bakker and Schaufeli (2006) indicated:

Vigor is characterized by high levels of energy and mental resilience while working, the willingness to invest effort in one's work, and persistence also in the face of difficulties. Dedication is characterized by a sense of significance, enthusiasm, inspiration, pride, and challenge. The third defining characteristic of engagement is called absorption, which is characterized by being fully concentrated and happily engrossed in one's work, whereby time passes quickly and one has difficulties with detaching oneself from work (p.498).

Bakker and Demerouti (2008) suggested a model of work engagement and "job and personal resources are the main predictors of engagement" (p.209). Job resources were "those physical, social, or organizational aspects of the job" (p.211) which could relieve job demands and facilitate individual development, and personal resources were "positive self-evaluations that are linked to resiliency and refer to individuals' sense of their ability to control and impact upon their environment successfully" (p.213).

However, work engagement is not workaholism. Both engaged workers and workaholics highly commit to their jobs, but the former has more positive perceptions of their experiences and achievements (Taris, Schaufeli & Shimazu, 2010). Employing the Job Demands–Resources Model, Hakanen et al. (2006) investigated 2038 teachers and confirmed the two processes: energetic process and motivational process, as demonstrated in Figure 2.2.

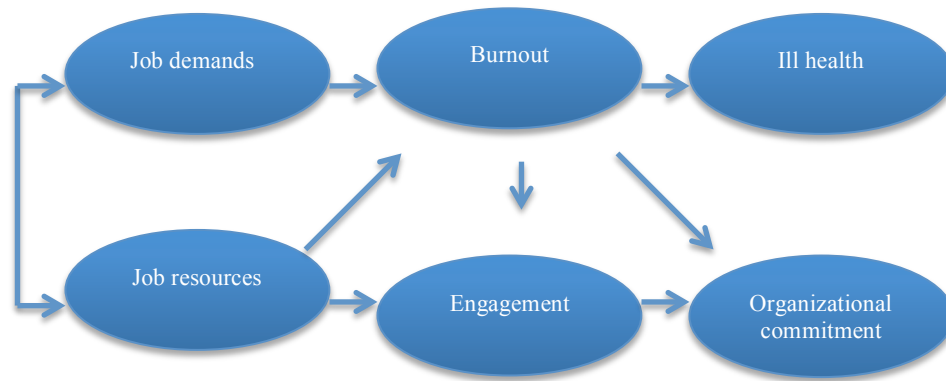


Figure 2.2. Hypothesized Job Demands - Resources Model.

Source. Hakanen and Schaufeli (2006). Copyright (2010) by Society for the Study of School Psychology. Adopted with permission.

The concept professional engagement is closely related to teachers' professional identity (e.g., Connelly, & Clandinin, 1999; Sachs, 2001), which is critical to understand their working lives and decision making mechanism (Day, Elliot, & Kington, 2005; Hong, 2010). Beijaard, Douwe and Verloop's (2004) literature review identified four essential characteristics to a general framework for professional identity:

- Professional identity is an ongoing process of interpretation and re-interpretation of experiences;
- Professional identity implies both person and context;
- A teacher's professional identity consists of sub-identities that more or less harmonize;
- Agency is an important element of professional identity, meaning that teachers have to be active in the process of professional development.

Expert Teachers and Teaching Expertise

Existing studies of teacher expertise cover nearly all the subjects and grade levels of K-12 education in Western countries (mainly the US) and Eastern countries (mainly China). Major findings are discussed in this section.

Definition and criteria

Definition

In the United States

As Turner-Bisset points out, it is difficult to find a definition about “expert teaching” with consensus. Researchers used various terms for “good or excellent teaching and teachers,” such as ““veteran teachers’ (Shulman, 1987)”, ““good enough teachers’ (Cullingford, 1995)” (2001, p.1), or highly qualified teaching, exemplary teachers. Then what is teaching expertise? Authors of articles about this topic seldom give a distinct definition of expert teachers, but we can get hints from their description.

David Berliner (1988b) described characteristics of five phases of teacher professional development, by which we can recognize teachers at various levels of expertise. His study furthered the classic model presented by Dreyfus and Dreyfus (1986). It contains novices, advanced beginners, competent teachers, proficient teachers, and expert teachers. The expert teacher is “a teacher who demonstrates special skills and exhibits a form of artistry in teaching.” They teach intuitively, having an overall sense of the situation such that they can respond fluidly without deliberating. They work unconsciously until there is a specific problem on which to focus their analytical skills. They operate a cut above all other teachers, just as expert musicians and sports

performers do. Another developmental model named the Life Cycle of the Career Teacher covers six ongoing phases: novice; apprentice; professional; expert; distinguished; and emeritus (Steffy, Wolfe, Pasch & Enz, 2000). “Passion, leadership, and impact” differentiated distinguished teachers from expert teachers (p.88). Steffy et al. suggested strategies for professional growth of each phase.

Note here experienced or veteran teachers are not necessarily expert teachers, although expert teachers must accumulate at least several years working experiences with children as a requisite. In Tsui’s paper (2009), expert teachers were denoted as “successful veteran teachers.” For Berliner (1988b) too, only a few teachers can be called as expert teachers. They can respond to the different situations properly with a “rational” intuition. Synthesizing the above findings, expert teachers are experienced teachers who have or show advanced knowledge and skills and aptitude for teaching, or expertise.

In China

Mathematics teachers from two big cities Chongqing (located in southwest China) and Hong Kong (located on the country's east coast), still influenced by the British education system, were reviewed regarding their conception of an “expert mathematics teacher”. With the same roots of the traditional Confucian culture, they share similarities in having strong teaching ability and in-depth knowledge of subject, pedagogy and learners, as well as noble personality and lifelong learning spirit. However, because of widely different economic, social, and cultural backgrounds, Chongqing

teachers expect expert teachers to play multiple roles as researchers and mentors with profound theoretical and curricular knowledge (Yang & Leung, 2013).

Criteria

In the United States

More difficulties lie in finding a coherent criterion of expert teachers. Some researchers perceive that how to identify and select expert teachers among studies is greatly inconsistent (Berliner, 2001; Li, Huang & Yang, 2011; Parmer, Stough, Burdenski & Gonzales, 2005). Palmer and Stough (2005) collaborated with their colleagues to question the similar use of the term “expert teacher” without careful consideration. They reviewed existing studies on the cognitive construct of expertise to identify and categorize selection indicators for them. They verified great variation among those studies and further suggested a rubric covering the following aspects: three to five-year teaching experience, confirmed teaching performance with student achievement and multiple constituencies; and professional group membership with certain certification. Berliner (2004) also contended extensive experience in the classroom was necessary for teacher expertise.

Y. Li et al. (2011) pointed out that it would result in inherent difficulty if researchers determined expert teachers only depending on unclear criteria such as educational background, service years, student achievement or nominations from professionals. And situations in Western countries are more acute because of non-public instructional practices. Furthermore, they proposed that some widely accepted certification could be used.

In China

A study (Gao & Watkins, 2002) comprising interviews (N=18) and surveys (N=450) of school physics teachers shows student achievement or test score is the most critical indicator of teaching excellence and schooling success. Also, Chinese teachers value developing good learning attitudes and habits rather than the learning interest of students. In comparison with existing Western studies, the researchers further suggested that although most conceptions on teaching are universal, there are big differences between Chinese teachers and their counterparts in Western countries regarding the above teaching notions.

National standards on expert teachers

In the United State

Besides individual efforts, both the US and China have their national standards on expert teachers' selection. The National Board for Professional Teaching Standards (NBPTS, 2010) works at identifying "specific knowledge, skills, and attitudes that support accomplished practice, while emphasizing the holistic nature of teaching." NBPTS proclaims Five Core Propositions, which suggest key attributes as fundamental rules by which to measure teaching excellence. They think expert teachers are teachers who are devoted to learners and learning, master subject matter knowledge and content pedagogy, are skilled for classroom management, reflect systematically from educational practice, and belong to learning communities. Need to note here, the term "Highly qualified teachers" in No Child Left Behind Act (NCLB) just mentions basic

requirements for teacher enrollment like degree, certification and subject knowledge (U.S. Department of Education, 2004). They are not identified as expert teachers.

In China

China has an official teacher ranking and promotion system, which can be used to identify expert teachers (Li, Huang & Yang, 2011). Based on this teacher ranking system, there are four official titles for teachers: third-grade (novice) teachers, second-grade teachers, first-grade teachers and senior-grade teachers. Normally teachers are promoted hierarchically from one title to the next after 3-5 years' service through evaluation at school or district levels. Teachers with the senior-grade title can be regarded as expert teachers (Li, Huang & Yang, 2011).

Besides the formal titles for Chinese teachers, two honorary titles (backbone [骨干, guban] and exceptional-rank [特级, teji] teachers) are given to those excellent teachers. Those at least with second-grade title are about one-third of the whole teacher workforce. The latter are those who are outstanding in their teaching and leadership. Right after the Cultural Revolution, the exceptional-rank teacher, an honorary title for some senior-ranking teachers) award for expert teachers was published to provide recognition for outstanding teaching (Ko & Adamson, 2011; Li, Huang, Bao & Fan, 2011). Usually they have taught for many years and have distinguished themselves in pioneering new and successful practices and initiatives that are acknowledged by the authorities and teaching community (Salleh & Tan, 2013). Expert early childhood teachers from the above pool have earned top awards and recognition in early childhood education in China, a country with 1.3 billion people. Very few early childhood teachers in China have the status of

“expert teacher.” ERTs are definitely “expert” teachers (Berliner, 1988b), but also might be “distinguished” or “emeritus” teachers (Steffy et al., 2000).

In Shanghai the criteria of special-rank teachers in basic education (including preschool teachers), which is consistent with the national standards, contains 4 primary requirements, addressing political, moral performance with good attitude, experience (at least 10 years), qualification (senior title), achievements and reputation. The above criteria of special-rank teachers involves little description of teaching quality besides those political and moral requirements, although most special-rank teachers in kindergartens have great teaching expertise and are widely accepted by preschool educators in Shanghai. The criteria for 2011 contain the following main requirements as issued by Shanghai Municipal Human Resources and Social Security Bureau, Shanghai Municipal Education Commission, Shanghai Administration of Civil Service (2011):

1. Fully carry out educational guidelines of the Chinese Communist Party; insist on educating students with top priority given to cultivating their moral integrity, run moral education through the whole process of subject instruction; actively take part in curriculum reform and educational and pedagogical reform, and have obtained obvious achievements, have high reputation and been well-known in municipal education circle;
2. Normally have professional title of senior teacher; especially excellent senior teacher in elementary or kindergarten, should have more than 10 years’ educational and pedagogical experiences;

3. Have the experiences of giving paired-assistance to teachers in under developed areas such as Yunnan, Dujiangyan, or to rural area in Shanghai. These teachers will be recommended first for designation as special-rank teachers; and
4. Special-rank senior teacher should be model of morality and educating, pedagogical specialist. Firmly imply one-vote-down system if morality is violated.

Key attributes contributing to teacher expertise

What attributes does an expert teacher have and demonstrate? As one of the main purposes and research questions, the following studies answer this question with different sides. Evidence shows that there are some key ingredients contributing to expertise, and to differentiating expert teachers from common teachers as well. They include knowledge, performance, and disposition.

Knowledge

In the United States

Many researchers view teacher expertise from a knowledge perspective. Knowledge means knowledge of subjects and learners. Sometimes knowledge is mixed with beliefs. Ertmer differentiated these two terms distinctly: beliefs denoted “suppositions, commitments, and ideologies”, while knowledge was “factual propositions and understandings” (Calderhead, 1996, p.715; as cited in Ertmer, 2005).

Glaser and Chi (1988) claim experts have better domain knowledge and various representation of it than novice. More contributions come from Shulman (e.g., 1986, 1987) who is well known in education because of his series of articles related to teacher

knowledge, especially for three categories of content knowledge. He analyzed related research literature, and then proposed his views on teacher knowledge: (a) subject matter content knowledge; (b) pedagogical content knowledge; and (c) curricular knowledge. His comparison between ancient and modern teacher standards is inspiring. However, the three forms of teacher knowledge (propositional knowledge, case knowledge, and strategic knowledge) which are all important in this area, are not as popular as his three categories of content knowledge (Shulman, 1986). They support analysis of expert teachers' teaching activities. Later on Shulman (1987) expanded the knowledge base of teaching to learner knowledge and educational contexts and goals.

Regardless of teacher expertise discussed generally or exclusively in mathematics teaching, researchers articulate their points mainly based on the knowledge that expert teachers have. Turner-Bisset (2001) focused on knowledge bases for general expert teaching, which included various knowledge on subject, curriculum, general pedagogy, models of teaching, learners (in cognitive and empirical/social aspects), "self" (p.16) or personal identity, educational contexts, educational ends and pedagogical content. Nearly at the same time, Berliner responded to Scherer's consultation with expert teachers' possessing of "case knowledge" to deal with various classroom problems (Scherer, 2001). Similarly, in a recent reflection of teacher expertise, Schoenfeld (2011) insisted on studying "the growth and change of teachers' resources, goals, and orientations" (p.337). Here resources mainly include teachers' knowledge.

Bransford, Brown and Cocking (2000) listed seven defining attributes of

expertise in teaching which can be generalized as a kind of functional knowledge of teaching and learning. The knowledge regarding teaching is “patterned, organized, easily retrievable, flexible, substantial and practical” (pp. 155 – 157).

For special educators cognitive knowledge and skills might be more useful in meeting the needs of students with different disabilities. Using interview, videotaping, observations, simulated recall and field notes to collect data from 19 participants Stough and Palmer (2003) proclaim that knowing students in depth helps teachers understand them well academically and emotionally, and meet their needs better.

However, how do expert teachers view their own expertise? A study (Beijaard, Verloop & Vermunt, 2000) using questionnaires for 80 experienced secondary school teachers explored these teachers’ self-perceptions of professional identity then and as a beginner from a personal knowledge perspective. Most teachers combine subject matter, didactical and pedagogical expertise together, and the first two types of expertise appear more in their perceptions. On the other hand, during different periods their perceptions differ significantly. Many of them experience shift from subject matter expertise to didactical or pedagogical one.

In China

How knowledge components distinguish expert teachers from others is also a research focus in China. Based on examination of the subject matter knowledge of 32 expert and non-expert teachers in elementary school using questionnaire, Li, Ni, and Xiao (2005) found that there existed significant differences in understanding of math knowledge and subject nature between these two types. Comparing with non-expert

teachers, expert teachers have profound understanding of math knowledge, including in-depth conceptual understanding and structured knowledge organization. They are prone to consider math subject and learning with the view of “problem solving,” while their counterparts prefer “mastering knowledge.”

Ma (1999) proposed the concept of “profound understanding of fundamental mathematics”, which is necessary for accomplished mathematics teachers, to differentiate the real levels of elementary teachers in China and the United States, regardless of their formal education years. She interviewed 72 Chinese and 23 American elementary school teachers using four (4) questions indicating subject matter knowledge and pedagogical content knowledge. Generally, Chinese teachers answered these questions in an anticipated mathematics teacher way, while their American counterparts showed relative deficiencies, that is, the U.S. teachers did not equipped with essential mathematical knowledge to teach.

Performance

In the United States

Other researchers represent their results from demonstrations of teaching behaviors in practice and relevant abilities, skills. Kennedy (1987) presented four (4) views of how expertise influences the actions of professionals. She defined expertise as technical skills, the application of principles and theories, critical analysis, or deliberative action. Borko and Livingston (1989) compared three (3) student teachers with expert teachers in secondary and elementary schools to examine the nature of pedagogical expertise. They assumed cognitive schemata of them were different.

Experts' schemata were more “elaborate, interconnected, and accessible” than novices’, and they had better “pedagogical reasoning skills.” They interviewed those teachers prior and after each lesson for a week, and analyzed their lesson plans as well. The findings show novice teachers spend more time and are less effective than expert teachers. On the expertise that underpinning the expert teachers, Beishuizen (2002) identified five (5) major dimensions of generally excellent teachers. Expert teachers can be good at representing relative subject, leading classroom interactions, observing and responding to students with affection, and improving them.

Westerman (1991) focuses on the most prominent differences of their thinking and decision making, which include if they can integrate prior knowledge into current learning effectively, how they deal with student behavior, and if there exists dynamic interaction among different stages of decision-making. His subjects are five (5) highly qualified elementary school teachers and five (5) undergraduate student teachers. Criteria for choosing expert teachers are if the teaching of expert teachers and research goals match each other, and the goals are listed as integrating curriculum, promoting reflection and developing a problem solving orientation. The expert teachers chosen did well in these aspects. From a prototype view, after going through psychological studies on expert performance in various domains, Sternberg and Horvath (1995) recognized three aspects which made differences on teaching between experts and non-experts in solving problem: domain knowledge, efficiency of problem solving and insights for solutions. In a word, expert teachers solved problems more effectively and creatively with more knowledge and insights than novice ones.

Other researchers discussed effective or expert teaching. Kyriacou (1997) summarized characteristics of effective teaching as follows,

- Has clear teachers' expectations and directions;
- Establishes task-oriented classroom climates;
- Makes use of a variety of learning activities;
- Encourages pupil participation and attending quickly to pupils' needs;
- Delivers a well-structured and well-organized lesson;
- Provides pupils with positive and constructive feedback;
- Makes good use of questioning techniques. (p.120)

Comparatively speaking, Marzano (2010)'s framework is a simple but clear attempt to cover the key ingredients contributing to teacher expertise. Two critical factors are determiners of expertise: "a well-articulated knowledge base and deliberate practice" (pp.216, 219). On one hand, according to Marzano, knowledge base is a prerequisite to be an expert. Moreover, knowing specific strategies for various situations is more important. Marzano adopted Leinhardt's term "lesson segment" (Leinhardt, 1990) to classify those strategies. He set up a framework (see Figure 2.3) that identified nine segments altogether, and divided them into three categories: segments involving routine events (segments 1 and 2), academic content (segments 3, 4 and 5) and issues that must be addressed as they occur (segments 6, 7, 8 and 9 around the biggest square in the figure). Meanwhile, Marzano stated, "deliberate practice is the vehicle that transforms knowledge into behavior" (pp.217-239). Teachers should conduct deliberate practice, while having clear goals, criteria and inspiration.

Segments Involving Issues That Must Be Addressed as They Occur

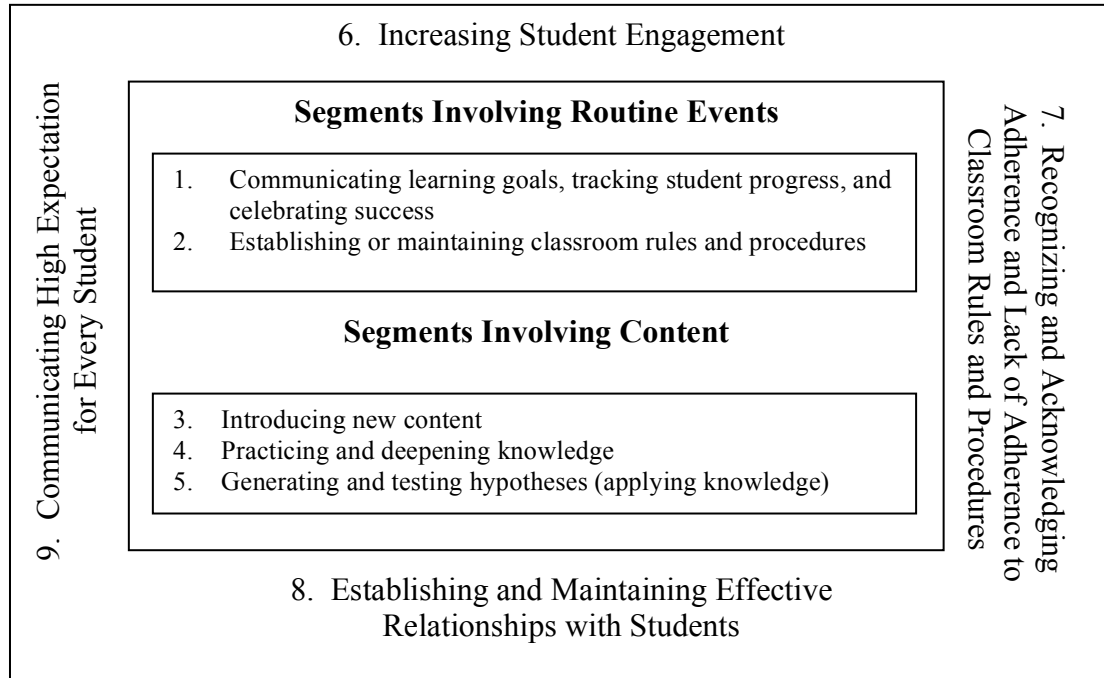


Figure 2.3. Categories of Lesson Segments.

Source. Marzano (2010). Copyright 2010 by Solution Tree Press. Adopted with permission.

In China

Focusing on school mathematics Li and Ni (2009) compare dialogues in Chinese elementary classrooms between novice and expert teachers by teaching observation. The findings indicate expert teachers work together with students to explore the solution for problems via “analytical and comparative questions”, while novice teachers often ask simple questions without incorporating students’ logic into teaching.

Another example from China was given by Li, Huang and Yang (2011). Li et al. selected five Chinese expert math teachers to characterize their teaching expertise from

prototype view. These teachers were asked to express their reflections and comments based on their and two other expert teachers' typical teaching videos. They found six central tendencies among their teaching like employing student-centered approaches, emphasizing students' critical thinking and motivation with solid subject content and pedagogical content knowledge.

Other attributes

In the United States

Other attributes mentioned by researchers include disposition, engagement, orientations, attitude, sensitivity, and personality. Murray (2007) claims the term "disposition" may give hints for later research as a guiding hypothesis. Many researchers are trying to "infuse, teach and assess dispositions in systematic ways within their teacher education programs" (Shiveley & Misco, 2010, p.9). Among these efforts, Shiveley and Misco (2010) proposed a four-step process: define the conception, determine the way to operationalize the definition best, determine the assessment types for desired competence levels, and analyze the data for possible revision.

Through comparing with novices and experienced non-expert teachers, Tsui (2009) found that engagement was the most important cause to assign teachers to different levels. What do teachers engage in? They engage in exploration, experimentation, problematizing and challenging tasks. Briefly, expert teachers always try their best to complete common tasks with high self-expectation. Additionally, in Schoenfeld's explanation, teachers' goals are established based on orientations, which include belief, values, preferences and so on (2011, p.337).

Still other scholars target this problem using various other perspectives (e.g., Johnson & Jackson, 2006; Smith & Strahan, 2004). One is a prototype view to examine roles expert teachers play in different contexts. For example, Smith and Strahan (2004) find several central tendencies for expert teachers: confidence in themselves and profession, regarding classrooms as communities of teachers and students, close relationship with students, children-centered instruction, school communities' leaders, masters of subjects. These tendencies can be categorized into behavior, practice and attitude. About the methodology, the authors mention that for the complexity of teaching a case study is used. The data of three participants with National Board certification are collected by in multiple ways: interviews, surveys, classroom observations, and artifacts review. Then they referred to Strauss and Corbin (1998)'s method to analyze the data.

Research from other areas than school education emphasizes sensitivity to learners' need. An interesting research project conducted by UK scholars (Johnson & Jackson, 2006) tries to learn lesson from other-skill areas (singing, tennis, flight pilot) for data collecting and grounded theory for data analysis. The results indicate that awareness of learners' needs in information-processing, crucial feedback based on performance, and needs-driven skill training constitute characteristics of other-skill teaching expertise.

In China

Lian (2004) examined the characteristics of novice, proficient and expert teachers. Their study indicates that there are differences among three types of teachers--teaching strategies, achievement goal orientation and personality characteristic. Expert

teachers emphasize lesson planning before class, evaluating and reflecting after class. They are featured as emotionally stable, rational, pragmatic and confident, with critical thinking, professional commitment and satisfaction.

Development of teaching expertise

Employing schema theory and cognitive comparison of teachers with different levels, Berliner (1988a, b, 2001, 2004) identified five stages of the development of teaching expertise as novice, advanced beginner, competent teacher, proficient teacher and expert teacher. He further pointed out six differences between novices and experts in teaching. However, in reality, what kinds of strategies have been used to develop teachers' expertise? Training programs and promotion practices are the two main ways to teaching expertise.

Training programs

In the United States

The past decades witnessed significant achievements in teaching expertise at the levels of both theory building and program development. Ball and Forzani (2009) asserted that “complex practice can be named, taught, and learned”, so training curriculum should shift from knowledge-focused one to practice-focused one. To combine campus coursework and field experiences more closely, Zeichner (2010) proposed a new teacher education epistemology for pre-service teachers, which involves combining academic, and practitioner and community expertise into “hybrid spaces” for training programs. He gave some examples. The new trial either included P-12 teachers themselves or representative samples of their work (e.g., writing or research papers,

which maybe electronic), and community-based knowledge as well. These maybe integrated into courses, or mediated instructions and classroom experiences. Further, Darling-Hammond (2010) examined existing research and found that much of evidence showed that teachers with more preparation had more confidence and success.

Based on broad literature and her experience in this area, although Feiman-Nemser (2001a) criticized the current teacher training programs, three promising examples inspired her to suggest a conceptual framework for teacher training programs. For preparing, inducting and developing teachers, their central tasks of professional development were different. For example, at induction, teachers should know the context of teaching, should be able to design responsive instructions and generate a learning community in the classroom, then have a successful repertoire (of approaches to curriculum, instruction and assessment) and derive feelings of professional identity.

Among the three examples, the first one was Descriptive Review made by Pat Carini team in 1986. Teachers met together to discuss a particular student with learning difficulties to help the teacher of this student view and support him or her in a positive way with recommendations from the group. Participants of this project confirmed this was helpful to gain insights of all children. The second one was “Community of Learners” project carried out at the end of 1990s. Also through group discussion, but including experienced, beginning and special teachers, teachers conducted conversations monthly on subject, teaching, learning, professional community, plus off-work every two-week meetings and a 5-day summer retreat. From the directors’ views, the efforts enriched both learning abilities of teachers and students. The third one was “Summer

Math for Teachers.” This project tried to make teachers understand learning and mathematics well from a constructivist perspective by a 2-week summer workshop focusing on problem solving in small groups. Teachers also had a chance to conduct student interviews and videotape observation, and finally give a lesson based on the interview. More compelling, staff members would visit classrooms of those teachers to help their instructional experiment based on what they had learned in summer. According to program directors, teaching behavior changed significantly within half to three years.

In their literature review, Willson and Berne (1999) recommended the Cheche Konnen Project for science learning. The project director Rosebery and her colleagues found that teachers “doing science” in a scientific community could be engaged in curriculum reform actively and correctly after the traditional training model for teachers had failed.

In early 2000s, researchers began to critically examine professional development programs. “Using multiple conceptual perspectives and multiple units of analysis of a situative perspective” (p.4), Borko (2004) tried to map the research terrain on the professional development (PD) of teachers. First, she proposed that there were four elements in any professional development system: PD programs, teachers, facilitators and context. Next, she maintained that there are three phases of program research. Phase 1 only focuses on an individual program and the first two elements (PD programs, teachers) in it. Phase 2 focuses on one program with multiple facilitators and sites. Phase 3 expands to program comparison covering all four elements. All phases are necessary

and complementary to each other.

In China

Comparatively, Chinese teachers received better early training on their subject knowledge such as mathematics (Ma, 1999). Preservice teachers took much more content courses than their American counterparts (Liu & Qi, 2006).

According to a teacher professional development policy issued in 1989, Shanghai elementary and secondary teachers need to complete “240” and “540” training during certain period. The former requires all classroom teachers, except for probationary teacher, to have 240 training course hours within 5 years. The latter was established for high-rank teachers or those who pursue that rank. For them 540 credit hours are mandatory, which include 300 hours specifically invested in research and publishing (Paine & Fang, 2006).

Promotion practice

In the United States

Through a large-scale survey across the United States, Garet, Porter, Desimone, Birman and Yoon (2001) generalized several core features of effective in-service teacher promoting activities. They put stress on subject matter, they engage teachers in active learning and they align with other learning opportunities. These features in turn determine the effect of several structural features, such as activity form, participation and duration. For example, teachers took part in different activity groups according to identical school, subject or grade level. These features were similar as the promotion

practices of teachers in China discussed later in this study.

Facing the shortages of current professional development opportunities for teachers, Lieberman and Mace (2010) called for “public” practices using online social networking for teacher learning. They referred to many other countries which offer much more practice-based teacher promoting. Such initiatives provide intensive activities, shared work space, regular curriculum meetings, collective lesson study, teachers’ networks, and teacher leadership development. All of these activities focused on teacher collaborating and learning effectively.

In fact, besides pre-service and in-service teacher training programs, for most U.S. in-service teachers, “learning from being told and by doing” (p.765) is regarded by some researchers as one of the main ways to improve their teaching quality (Li, Tang, & Gong, 2011). Similar suggestions have been made for England as well. For example, results from a large-scale survey questionnaire, interviews and the “learning logs” of trainee teachers using an “expansive-restrictive” analytical framework indicated that, due to the weakness of England’s current teacher education system, (1) colleges should be oriented toward more expansive-learning and need to more closely integrate broader development strategies; (2) teachers’ practices and professional identities needed to be changed to fit their professional development (Lucas & Unwin, 2009). Changes are taking place in the United States. For example, President Obama’s 2009 stimulus package focused new efforts on beginning teachers and expert teachers, career ladder programs, and collaboration time for teachers, etc. (Darling-Hammond, 2010).

In China

In sharp contrast, Chinese counterparts seem to make progress mostly through “learning from example and by doing.” There are many teacher training strategies implemented in China, including a school-based apprenticeship approach, school-based teaching research, teaching research activity organized by municipality, and teaching contests (Huang, 2006). All of these strategies are integrated into teachers’ routines and many open-classes are conducted.

Additionally, some scholars of Chinese background (Li, Huang, Bao & Fan, 2011) thought an effective mechanism in China to promote teaching expertise would be the teachers’ ranking and promotion policy. They affirmed that this policy was only a part of the teachers’ promotion practice in China. “It functions as an important mechanism in specifying aspects of teacher’s professional expertise valued for promotion and supporting teachers’ professional development” (p.4). A case profile of a Chinese mathematics teacher was provided to illustrate his journey of professional promotion. After his teaching excellence was recognized, he gradually grew to be a senior teacher and finally a special-rank teacher.

A few Western scholars have also recognized China’s coherent system for helping teachers develop professionally. For example, Stewart (2006) thought Chinese pre-service teachers had more opportunities to obtain stronger subject-matter knowledge and observe excellent teaching. New teachers were mentored in a professional development system.

Teaching expertise of early childhood teachers

In the United States

The ability to understand and apply Developmentally Appropriate Practice (DAP) has a dominant influence on expectations for teaching expertise in early childhood education. Since its original publication by the National Association for the Education of Young Children (NAEYC) in 1987, extended through the 1996 revised version, DAP has been one of the most powerful documents guiding the field of early childhood education in America. According to the latest version by NAEYC, in its simplest form, DAP is the “practice that promotes young children’s optimal learning and development.” It is regarded as “a framework for best practice” or “a set of guidelines” in early childhood education (Copple & Bredekamp, 2009). According to McMullen and his colleagues (2002, 2005), early childhood education and teacher education programs in the United States embraced DAP standards widely. However, because of the non-centralized educational system, every state has its own minimum standards for different level teachers, and the quality of teachers and educational practices vary greatly. More description on DAP was given by NAEYC:

- Developmentally appropriate practice requires both meeting children where they are—which means that teachers must get to know them well—and enabling them to reach goals that are both challenging and achievable;
- All teaching practices should be appropriate to children’s age and developmental status, attuned to them as unique individuals, and responsive to the social and cultural contexts in which they live;

- Developmentally appropriate practice does not mean making things easier for children. Rather, it means ensuring that goals and experiences are suited to their learning and development and challenging enough to promote their progress and interest; and
- Best practice is based on knowledge—not on assumptions—of how children learn and develop. The research base yields major principles in human development and learning (this position statement articulates 12 such principles). Those principles, along with evidence about curriculum and teaching effectiveness, form a solid basis for decision making in early care and education. (Copple & Bredekamp, 2009)

NAEYC (2009) claim one of its position statement as “Recognizing teacher knowledge and decision making as vital to educational effectiveness.” It lists six items which comprise “what tomorrow’s teachers should know and be able to do” as follows:

- promoting child development and learning;
- building family and community relationships;
- observing, documenting, and assessing;
- using developmentally effective approaches to connect with children and families;
- using content knowledge to build meaningful curriculum; and
- becoming a professional.

As professionals, tomorrow’s teachers are expected to: develop a professional identity and occupational ethics; learn continuously and collaboratively; do reflective

and critical thinking; and demonstrate informed advocacy for the field. These standards reflect the baseline for future teachers. These also are the expected attributes of all expert teachers.

Through “meta-analysis or a comprehensive review of the research literature”, Sheridan, Edwards, Marvin and Knoche (2009) found there was not much research on the process by which early childhood novice teachers acquire expertise. They, along with Hattie and Timperley (2007), recognized that more empirical studies needed to be done in this area, as in forms of professional development and related strategies (e.g., feedback and reflection).

In China

Outside of the United States, early childhood educators are widely affected by DAP, both its beliefs and practices (McMullen et al., 2005). With more opportunities of attending international conferences and workshops, along with reviewing educational publications, Chinese scholars are also quite familiar with this term. On the other hand, absorbing concepts from other cultures, especially those from Western countries, always draws criticism; therefore normally scholars in China do not adopt a whole concept and related terminology from abroad, only its key ideas. In some senses, DAP is both addressed and not addressed by expert early childhood teachers in Shanghai. They normally not often talk about it, but the basic ideas of it can be found between the lines in their articles or speeches, and are manifested in action (Hao, Rackley & Li; Huang, 2011; Wood, Williams & McNeal, 2006; Xu & Hong, 2011; Zhu, 2007).

Development of expert teachers is currently a hot topic in teacher research in China. Chinese scholars are apt to discuss this problem theoretically and generally. According to Lin, Cao and Jiang (2007), for development of expert teachers the motivation is reward of profession; the connotation is specialized knowledge and pedagogical skills; the main way is teaching reflection and novice training; and the condition is adjusting to challenge and personal ability. Emphasizing the crucial function of teaching behaviors, Liang's (2008) comparison between novices and experts focuses on the ability of educational activity design, teaching behaviors in the activities, assessment of the educational process and the result (cognitive, physical, and social).

China too, has conducted several empirical studies on early childhood teacher training (e.g., Li & Cao, 2009; Fang, 2009). Applying the newest research paradigm of effective teaching, researchers in Zhejiang province selected 6 kindergarten teachers from two types--novices and experts. All of the participants were interviewed using a semi-structured method, and their perceptions of collective teaching design in science education were examined. The data indicate that expert teachers are easily distinguished obviously from novice teachers in three aspects--content, organization and strategy of thinking activity (Li & Cao, 2009). Employing non-participatory observation and structured interviews, Fang (2009) conducted comparative research between novice and expert teachers on instructional behavior for role-play with 4-5 year old children. He confirmed that significant differences existed in their instructional identity, emotion and attitude. Comparatively, the behavior of expert teachers was far more appropriate.

Summary of research on teacher experts and teaching expertise

Research focus

1. Researchers identify many attributes of teacher expertise, which can be categorized into knowledge (of subject, pedagogy, students and context), performance (good teaching behavior in practice), dispositions (engagement, or orientations and goals), role-playing ability in various contexts, and sensitivity to learners' needs. In brief, informed by the past 20 years' research tradition, many scholars are still interested in the topic of attributes and development of teacher expertise, but with some new characteristics. Knowledge bases of teacher expertise still occupy an important position, although they must be combined with application techniques in order to become more "conditionalized" to various situations (Bransford, et al., 2000, p.31).
2. Complex practice can be learned (Ball & Forzani, 2009). Two main ways are adopted most often to develop teacher expertise: training programs and promotion practices. Different from past emphasis on designing and experimenting with new ones, researchers go on stressing training programs for pre- or in-service teachers with more assessments and reflections (Borko, 2004; Darling-Hammond, 2000; Feiman-Nemser, 2001). More discussions come from an international perspective (as from Li and his colleagues' (2011) studies on promotion practices of Chinese in-service teachers. Many now see teachers somewhat differently from the traditional view; teachers are not just passive receivers of certain training, they are active learners too. Teacher learning is the

process of helping novices become expert teachers (Kelly, 2006; Lave & Wenger, 1991), so Kelly (2006) suggested replacing the term teacher development with teacher learning.

3. Commonly used standards by researchers to identify and select expert teachers are questioned, thus some scholars suggest alternative criteria. A comprehensive proposal includes teaching experience, social nomination-recognition, teaching performance, and professional and group membership (Palmer et al., 2005).
4. Several famous scholars' past studies (published before 2000)--but basic and classic--are cited in this study because of their foundational influence in this area, for instance, Shuman (1986, 1987) and Berliner (1988a, 1988b). Besides that, those literature reviews on reflective and comprehensive characteristics have high citation frequency (Borko, 2004; Darling-Hammond, 2000; Feiman-Nemser, 2001; Willson & Berne, 1999). All of these articles focus on training programs. Although published in 2005, the study "Identifying Teacher Expertise" (Palmer et al., 2005) is cited with relatively high frequency. Technology integration in education is still a discussion and research priority. Terms like "teacher belief" connected with technology are certainly not new, but they still garner significant interest and research attention (Ertmer, 2005; Judson, 2006).
5. Some relatively new areas that relate to expertise include professional identity, collaborative learning, knowledge transfer, technology integration, and cultural relevance (Judson, 2006; Kelly, 2006).

Adopted methods

Many researchers of teacher expertise use the case study as their basic method. Some seem to use qualitative research methods most heavily, some use quantitative research methods, while some use both methods together (such as concurrent nesting strategy, which is to articulate a problem from multiple perspectives).

For studies on key attributes contributing to teacher expertise, comparisons among teachers with different levels of quality (especially between novice and expert teachers) are employed by most researchers. If participants are expert teachers, data collection methods used teacher interviews, mixed with field (classroom) observation, videotaping, document analysis, and survey questionnaire. Some of them use stimulated recall strategy based on teaching videos (Li, Huang & Yang. 2011; Stough & Palmer, 2003).

Revelations from existing studies

Identifying research gaps can give hints to the discovery of potential study areas. First of all, experts always transform from novices. It is a dynamic process, but many studies only focus on the two ends, or one of them. David Berliner (1988) proposed five phases of development, but he said little about the trajectory of expert teachers and the factors that push novice teachers to go through all these phases to become experts. What's more, he thought that some teachers might never reach the last phase because of a lack of intelligence.

Second, researchers pay much attention to the teaching of teachers or the learning of students, but for beginners how to learn to be experts is critical. Unfortunately, we

know little about that process (Wilson & Berne, 1999). In terms of methodology, focus groups, narrative analysis and the grounded theory method are rarely included in current research.

Therefore, the dynamic process of growing from novice to expert, and the resources attributed to this process, might be promising topics of future studies. Relevant research questions might relate to the trajectories that novice teachers go through to become experts, contributing factors to that process, novice teachers' developmental growth from a constructivist (including socio-cultural) perspective (Kelly, 2006) or expert teachers' personal perceptions of their development. Employing the aforementioned rarely used qualitative methods can enrich the answers to such questions.

Theoretical Frameworks

Expert teacher selection model

The models of teaching expertise are pertinent to a discussion of early childhood teacher professional development. The first one is an expert teacher selection model. Palmer, Stough, Burdenski and Gonzales's (2005) study provided a framework for expert teacher selection. They identified four criteria by which to select expert teachers that fall under one or more of the following marker categories: (a) years of experience in a specific teaching content area and with a particular population of students; (b) social recognition or nomination by school administrators, teacher educators, school principals or other constituencies (other teachers, university personnel, students, and parents); (c) professional or social group membership (membership in an educational organization, enrollment in a teacher education class, or having taught at a prestigious school, status as

a mentor teacher); and (d) performance-based criteria, including normative and criterion-based selection (e.g., student achievement).

A prototype view on teaching expertise

Another relevant model of teaching expertise comes from Sternberg and Horvath (1995). They suggest a prototype view on teaching expertise, through which teaching expertise is regarded as a category structured by the similarity of expert teachers to one another rather than by a set of necessary and sufficient features. They consider the benefit of this view is that it enables researchers to understand teaching expertise holistically, with consideration of general factors and social judgments. Based on psychological research Sternberg and Horvath maintain that the content of the expert prototype should cover knowledge, efficacy and insight. They were inspired by Rosch's cognitive psychology research (1973, 1978) about natural language concepts. Rosch proposed that similarity-based categories exhibited a graded structure in which some category components are better exemplars of the category than others, and a prototype can represent the central tendency of category components or exemplars.

Sternberg and Horvath (1995) define the prototype as “the central tendency of feature values across all valid members of the category” (p. 10). It is the category's summary representation. Three properties are associated with prototype-centered categories: (1) various category members may favor the category prototype on different features; (2) features are weighted differently to compute the overall similarity to the prototype; (3) features contributing to a category prototype are often correlated with each other. Thus, they view teaching expertise as “a natural category, structured by the

similarity of expert teachers to one another and represented by a central exemplar or prototype with reference to which decisions about the expert status of a teacher are made” (p.14). Meanwhile, prototypes vary depending on the population of expert teachers (from elementary versus middle or high school, or majored in mathematics versus social studies), so the prototypical expert teachers differ from each other accordingly.

Social constructivism perspective

Social constructivism also provides a useful perspective to review teaching expertise. From that perspective, individuals construct reality socially, culturally and historically. Social phenomena are context-specific, inquiry of which is inevitably imposed by both researchers and study context (Lincoln & Guba, 1985, 2000). To be an expert teacher is a learning process. Some academics profess that constructivism is a theory about learning (Chee, 1997; Fosnot & Perry, 1996; Fox, 2001), and further learning is an active social process (Ernest, 1996; Jones & Brader-Araje, 2002).

Vygotsky is regarded as one of the main founders of social constructivism (Ernest, 1996; Powell & Kalina, 2009; Sjøberg, 2007) because he asserted, “The social dimension of consciousness is primary in time and fact”, “the individual dimension of consciousness is derivative and secondary” (Vygotsky, 1978, p.30). However, it is difficult to find an explicit definition for constructivism or social constructivism (Sjøberg, 2007), but four paradigms of constructivism--information-processing theory, weak constructivism, radical constructivism, and social constructivism--were distinguished by Ernest (1996). Claiming himself to be a social constructivist, he regards

persons as ones in conversation. According to Ormrod (2004), social constructivism is a perspective suggesting people work together to construct knowledge. While Palinscar (1998) contended “social constructivist perspectives focus on the interdependence of social and individual processes in the co-construction of knowledge”. His position objects to the phenomena that cognitive models only focus on personal learning and which potentially deprives students of necessary support from others and educational system (Lave, 1996).

Summary of the Chapter

In short, the Reform and Open –Up Policy of 1978 not only changed basic education in China but also had a radical impact on early childhood reforms. As China’s business capital and one of most internationalized cities, Shanghai launched the “1st-Term Curriculum Reform (1988–1997)” and the “2nd-Term Curriculum Reform” (1998–present). Great efforts are made to improve teachers’ teaching expertise too.

Existing literature identify many attributes of teacher expertise, which can be categorized into knowledge, performance, dispositions, ability to role-play in various contexts, and sensitivity to learners’ needs. Researchers also claim complex practice can be learned. Two main ways are adopted most often to develop teacher expertise: training programs and promotion practices. However, we know little about the process by which an individual novice learns to be an expert teacher. In terms of methodology, focus groups and narrative analysis method are rarely included in current research about professional developments of Chinese early childhood teachers.

This study adopted an expert teacher selection model as the primary framework for sampling. Then, a prototype view on teaching expertise and a social constructivist perspective were employed for further exploration.

CHAPTER III

METHODOLOGY

The primary purpose of this study was to explore the journey of 10 Shanghai early childhood teachers developed from novices to expert teachers. The following research questions guided this study:

1. How do 10 early childhood teachers conceptualize expert teaching?
2. What are the personal and supportive resources that 10 early childhood teachers attribute to their professional development from novices to experts?
3. How do 10 early childhood teachers describe their process of transforming from a novice to an expert?

Rationale for Methodology

Naturalistic inquiry was the primary methodology used in this study. Naturalistic inquiry is a comprehensive and inclusive methodology that involves philosophical, conceptual and operational levels. This methodology was suitable for addressing the research questions in this study as little is known about the development of early childhood teacher expertise in China. This study utilized the characteristics of “operational naturalistic inquiry” (Lincoln & Guba, 1985, pp.39-44) as seen in the Figure 3.1:

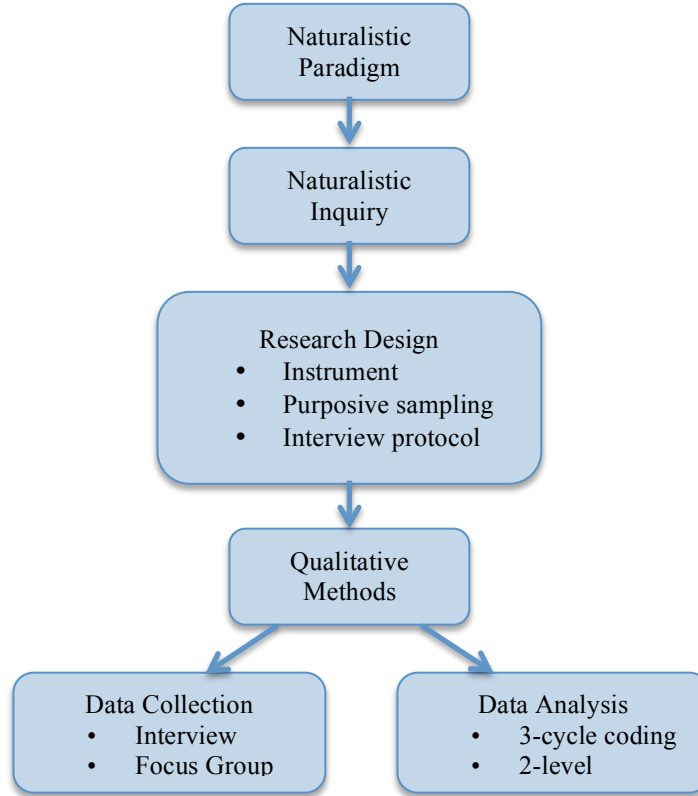


Figure 3.1. Overview of the Methodology.

Qualitative research methods are appropriate for this study given their sensitivity and adaptability. The purpose of qualitative research is to understand “how people interpret their experiences, how they construct their worlds, and what meaning they attribute to their experiences” (Merriam, 2009, p.5). Expert teachers and teacher-researchers possess rich experiences, as well as their own unique developmental trajectories. Given the centralized educational system and traditional collectivistic culture in China, individual teachers’ voice normally is hardly heard. Qualitative methodology, especially naturalistic inquiry, allows a researcher to capture the voice of

expert teachers and to capture important stories of their working lives (Lincoln & Guba, 1985). Additionally, early childhood programs in Shanghai are widely recognized as stellar teaching models across China. As an editor for the website, Shanghai Preschool Education Net, I had many chances to talk to these expert teachers and to review their lesson plans. Each of these teachers was regarded as a superior teacher. As a result, I could conduct my interviews for this study based on these experiences as I had “tacit knowledge” before beginning my study (Lincoln & Guba, 1985, pp.195-198).

Narrative analysis was the basic strategy I used to analyze the data. Narrative, for the purpose of this study, means “a brief, bounded segment of interview text” (Riessman, 2008, p.61). Several elements made this a narrative study. First, the interviewees were not sampled randomly, but were purposely chosen using criteria such as experiences, reputation, and availability. Second, I exclusively focused on the “told”, not “the telling,” in that I reported my results to represent, as much as possible, the viewpoints of my participants. Third, although these expert teachers and I co-constructed narratives, as the interviewer I deliberately tried to disappear behind these narratives. Fourth, while “cleaned up” speeches were used in the results to support my findings, their original meaning was maintained. Fifth, my analytic procedures were consistent with Riessman’s description of thematic analysis, which she claims as the most straightforward among various types of narrative analysis; I used, “...a method for identifying, analyzing and reporting patterns (themes) within data” (Braun & Clarke, 2006, pp.53-76). Finally all the data were inductively derived to produce six themes which formed the basis of further analysis.

Ethical Considerations

“All research is concerned with producing valid and reliable knowledge in an ethical manner” (Merriam, 2009, p.209). For ensuring internal validity, “member checks” (p.217) were employed to rule out misinterpreting. In addition, I adopted several strategies to avoid possible ethical issues. First, with the approved consent forms from the Institutional Review Board (IRB), I called each teacher first to explain the purpose, topic and procedure of the interviews, asked for their permission of the interviews and consulted the proper places and times best for them to attend the interviews. Second, before the interviews, I emphasized that they had the right to withdraw at any time, and that all information was confidential with pseudonyms. For this consideration, I had to abandon an ideal participant as one of three cases. She committed to do it at first, but when I tried to reach her, she withdrew due to a family accident. All informants signed the consent forms issued by Texas A&M University IRB. Third, all relevant persons were coded as pseudonyms in transcripts. Finally, in the description of the report, I tried to keep the anonymity of the participants although it is quite difficult for purposive sampling study (Ponterotto, 2010).

Interview Protocol

Sampling procedures and selection criteria

Expert teachers as participants

Qualitative researchers choose the sample that will provide the most valuable information (Birks & Mills, 2011; Merriam, 2009). For this study, purposive sampling was used to select subjects to increase the “scope or range of data” (Lincoln & Guba,

1985, pp.40, 199-202). Following Palmer et al. (2005)'s guidelines in selecting expert teachers, four factors were considered to conduct sampling. These include: (1) teaching experience; (2) teaching performance; (3) professional and group membership; and (4) social nomination-recognition.

1. Teaching experience. Ten expert teachers were selected and participated this study. Each had at least ten years of experience (Ball, 1993).

2. Teaching performance. All 10 expert teachers met teaching performance criteria as described by Berliner (1986) and from the DAP principles (Copple & Bredekamp; NAEYC, 2009). Although it is difficult to assess student achievement in preschool, these teachers came from the municipal or district-level exemplar kindergartens, from which students graduated to high quality elementary schools.

3. Professional and group membership. All 10 teachers held teaching certification in early childhood education and are mentors assigned by the district or municipal administrative departments of education. Except for one, the remaining nine teachers held a senior rank. Five of the ten teachers were exceptional-rank teachers.

4. Social nomination-recognition. These teachers had high reputations as preschool educators, denoted by exceptional ranks or through municipal teaching awards. For example, there are contests for public school teachers in China such as "Young and Middle-Aged Teacher Excellence Selection", through which many quality teachers have been identified. All of these 10 teachers entered into this competition and received the first prize. Their teaching videos are recommended to teachers in Shanghai and all over the country as exemplary lessons. For example, the teacher who was given

the pseudonym “Psychologist” is an example of a teacher of an exemplary kindergarten in a central district in Shanghai. In general, China urban public schools are superior to rural schools with respect to quality. “Psychologist” won the first place in this teacher competition as well as nomination to a SRT.

For this study, the director of Shanghai Municipal Preschool Teaching and Research Office recommended the major participants. Given China’s centralized educational system, the custom of having classes open to observation and other effective in-service teacher education programs (Mok, 2003; Seago, 2004; Steward, 2006), together these indicators combined to confirm that the ten kindergarten teachers who were recommended by the Shanghai Municipal Preschool Teaching and Research Office were truly exemplary. The teachers were contacted individually for in-depth interviews. I began with the teachers who were ranked most highly or the most well-known to see if they would share their experiences with me. One nominee could not commit to the interview, but she recommended to me another teacher who met all the selection criteria described above.

Teacher-researchers for triangulation

A second group of 10 teachers, all, who were teacher-researchers from preschool teaching and research offices in various districts, were used to triangulate the data obtained from the previously described expert teachers. In China, teacher-researchers are also teacher educators. Most of them have rich teaching experiences; those with less classroom experience had advanced educational degrees such as doctorates or Masters Degrees. Their daily job was to visit kindergartens or public schools to observe

instruction with the goal of enhancing teachers' attitudes and teaching skills, so call had substantial experience in observing in the field.

Teacher-researchers in China have many opportunities to observe expert teachers' lessons and attend various seminars related to the latest theoretical developments in the field of education. They are very familiar with teachers, especially expert teachers. Therefore, they have knowledge of overall characteristics of the teachers in their districts as well as mainstream educational theories. Ten of these teacher-researchers were invited to two focus groups (see Appendix 2 for focus group questions) with the assistance of the director of Shanghai Municipal Preschool Teaching & Research Office and the senior director of a district preschool teaching & research office. The municipal director had 30 years of experience in early childhood education and was herself an exceptional-rank teacher.

Positionality

One characteristic of qualitative research is that human beings serve as the primary instrument for data collection and analysis (Lincoln & Guba, 1985; Merriam, 2009). With a Masters Degree in early childhood education, I have had a wide spectrum of experience, ranging from being a kindergarten teacher, to being a teacher educator and researcher, and being a curriculum developer, project director and program evaluator. I had focused on early childhood instruction for almost 12 years in Shanghai. Before I came to the United States, I was a senior educator and researcher with the Preschool Information Center of Shanghai Education Commission. I also was an online editor for an early childhood government portal website, through which I had the privilege to visit

schools and observe expert early childhood teachers all over Shanghai. Thus, I can be regarded as an insider as well as a researcher on this topic. As all the data for this study were collected in Chinese, I also served as translator.

I regard myself as a co-constructer of these narratives. As an instrument of this investigation and as an insider of the early childhood education community in China, I believe I made the participants comfortable given my familiarity with the environment. At the same time, the familiarity between these teachers and me together with my prior values and experiences might lead the bias that data obtainment and interpretation just focused on their bright side, but ignoring the dark side.

Data collection

Data collection methods included individual interviews and focus groups. The entire process lasted for nine months (from December, 2011 to August, 2012) and occurred during the 2011 winter break and 2012 summer break, which aligned with the U.S. academic schedule. Only one interview was conducted during the winter break as Chinese teachers were very busy with activities at the end of the semester. The two-month summer break (from July to August) is an academically less busy time for Chinese kindergarten teachers, although kindergartens are still open for children.

The two primary data sources (see Figure 3.2) were (1) individual, face-to-face interviews with 10 expert teachers, (which were complemented by calls, emails or online video calls) and (2) two focus groups consisting of a total of 10 teacher-researchers, which were used for triangulation. In total, there were 306,383 words (in Chinese), 340 single-spaced pages, 15 transcripts, and 1,261 minutes of audio recording. In addition,

documented accomplishment artifacts were collected as supplements to the interviews. These artifacts included teaching videos, published books and articles, lesson plans and reflections of exemplary lessons, notes, and e-mails or chat logs of other online correspondence (such as QQ, an instant message tool) between the participants and myself.

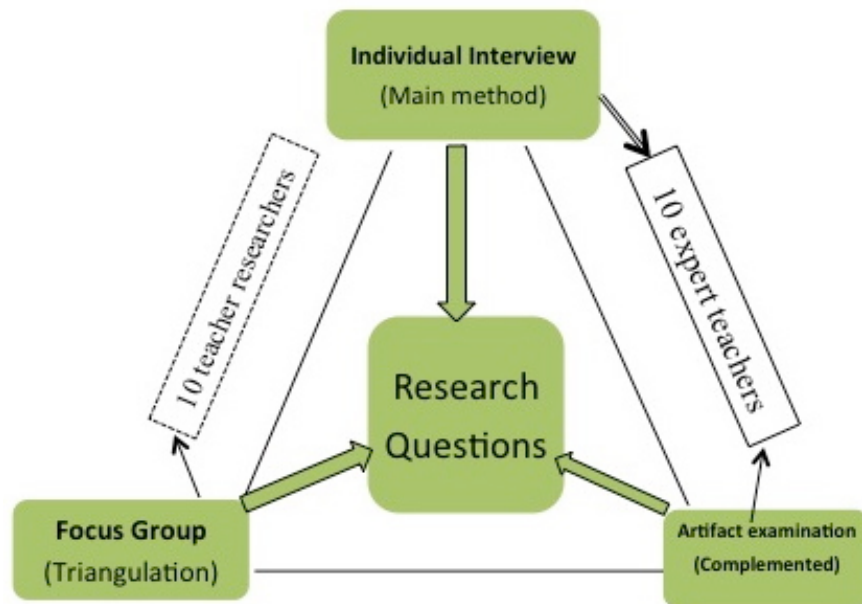


Figure 3.2. Overview of Data Collection.

Individual interview

Interviewing can be structured or unstructured (Lincoln & Guba, 1985). A semi-structured, open-ended questionnaire was used for each interview. The questions were similar for all these interviews, but varied in wordings and orders, and adjusted according to the effect of the last interview and the context of next one (Merriam, 2009, p.90). Interview questions (see Appendix A for more questions) included questions such

as: “What is teaching expertise in your view?” “How can you become an expert teacher?” Given the nature of qualitative research, questions were listed, but follow-up question techniques were also employed.

All of the interviews were audio-recorded (with prior permission) and field notes were taken during the interviews. Each participant was interviewed one or two times. All of the participants had at least one face-to-face interview. I conducted second interviews with three teachers for the following reasons: two of the teachers were initially interviewed via telephone or an online voice chat tool because of time and distance issues, but the data yielded through these methods was not particularly rich. In the third case, the teacher’s first interview audio recording was missing due to unexpected equipment failure. To complete my data collection for these three participants, I therefore conducted a second interview with each of them. I interviewed most of the participants individually in their kindergarten offices, but one interview was conducted at the home of a teacher while another was conducted in a quiet corner in a superstore cafeteria.

Each interview lasted an average of one and a half hours in total and all of the interviews ranged in length from one to three hours. These interviews were followed up by calls or emails for further clarification. I wrote down word by word all the transcripts in Chinese from the audio records. Occasionally, a few teachers spoke Shanghai dialect, which I also included. The transcripts used for the final analysis were translated into English.

Focus groups

Focus groups were used to verify the data obtained from the expert teachers and the teacher-researchers. “A focus group study is a carefully planned series of discussions designed to obtain perceptions on a defined area of interest in a permissive, nonthreatening environment” (Krueger & Casey, 2009, p.2). In fact, it is “an extension of the standard interview” (Birks & Mill, 2011).

I invited ten teacher-researchers in Shanghai who were recommended by two senior teacher-researchers; one was the director of the Shanghai Municipal Preschool Teaching and Research Office and the other was the district director of the Preschool Teaching and Research Office. Two separate focus groups were conducted, one with six participants and the other with four teacher-researchers. I contacted the directors to discuss the feasibility and appropriate procedures for the focus groups. These ten teacher-researchers met at the conference hall of the Municipal Teaching and Research Office in the downtown of the city during one of their routine meetings right before the fall semester. Each focus group lasted about half an hour (see Appendix 2 for focus group questions).

Additional information for the interviewed teachers and other expert teachers were obtained from prior online data, including the Shanghai Preschool Education Net (www.age06.com) that supplemented the current study. I also examined teaching artifacts such as lesson plans, teaching reflection writings, teaching videos, comments from their colleagues or parents of children, and teaching portfolios as supplemental data.

Analysis of Data

I used narrative analysis as the main data analytic method (Riessman, 2008) to address the research questions. For data analysis I employed three coding cycles (Saldaña, 2013) and two-level-comparison (Ayes et al., 2003), as is illustrated in the Figure 3.3.

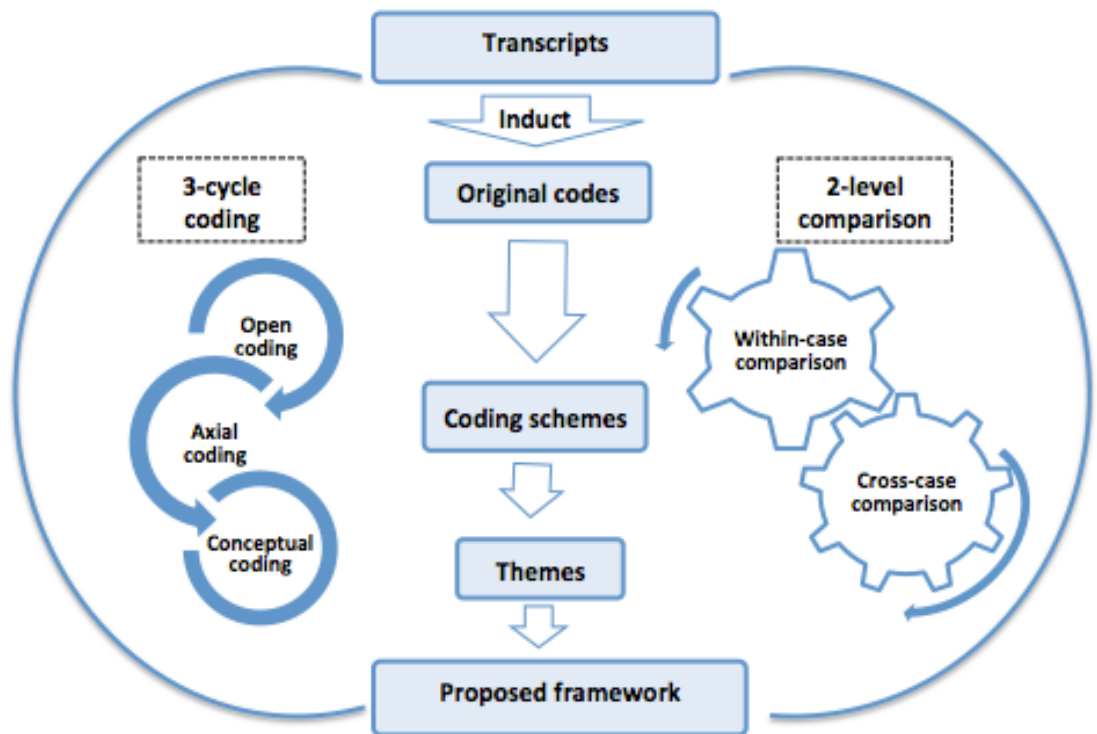


Figure 3.3. Overview of Data Analysis.

To code the transcripts, I used open coding, axial coding and conceptual coding. I supplemented the coding with memoing and diagraming techniques (Birks & Mills, 2011; Lincoln & Guba, 1985). As part of open coding, I broke the data into “the minimum meaning unit” (Coffey & Aakinson, 1996, p31.). I coded all the transcripts one

line after the other line in their original language--Chinese, then translated the codes into English. Categories were then constructed, resulting in ten coding schemes in English that arose across all 10 expert teachers. In this process, all interview transcripts were compared with each other several times to avoid overlooking. I reviewed them constantly during the analysis and write-up. As no new information was being generated beyond this point I determined that I had reached a point of saturation with these sample participants (Mason, 2010). Finally, I reduced and combined these categories into several “themes” (Cresswell, 2012, p.152).

Trustworthiness

To improve credibility Lincoln and Guba (1985) suggested triangulation as an effective technique. Triangulation is “the combination of methodologies in the study of the same phenomenon” (Denzin, 1978, p.291). Gliner (1994) describes triangulation as a method of highest priority in determining internal validity in qualitative research. This study used triangulation by various data sources and methods of data collection (Jick, 1979; Meijer, Verloop & Beijaard, 2002). I compared the results from two or more different methods of data collection (interview and focus group) and two data sources (interviews with members of different interest groups--expert teachers and teacher-researchers).

Member checking is regarded as the most critical technique for pursuing credibility of data (Lincoln & Guba, 1985). I provided copies of the interview transcripts to participants after the interviews to review and further confirm confusing records or interpretation through face-to-face conversation, emails or phone calls.

Peer debriefing is another way to establish credibility (Lincoln & Guba, 1985). I invited a very competent Chinese graduate student who majored in English as a Second Language (ESL), Curriculum and Instruction, and who was familiar with both the educational systems and cultural backgrounds of China and the United States, and who was also fluent in two languages--Chinese and English, to code part of the transcripts. She was an ideal disinterested debriefer as she knew about “both the substantive area of the inquiry and the methodological issues” (Lincoln & Guba, 1985, pp.308-309). I randomly assigned four out of ten previously coded interview transcripts, which ranged from 20 to 40 pages to her. She coded half of the pages of each transcript copy for validation. Finally she listed all her categories and sub-categories in English. The results indicated consistency (categories and sub-categories) between her analyses and mine.

CHAPTER IV

PARTICIPANTS

This chapter focuses on the main participants in this study—ten expert early childhood teachers from Shanghai, China. It provides a brief profile of each teacher’s professional development trajectory.

Demographic Information of Expert Teachers

Details about expert teacher interviewees are shown in Tables 4.1 and 4.2. Each expert teacher received a pseudonym based upon certain aspects of their individual narratives. These pseudonyms were coded as abbreviated names.

“Thinking in terms of metaphors and similes” is one of the “analytic tools” for qualitative data analysis suggested by Corbin and Strauss (2008, pp.83-84). This technique helped me to understand the experts and get a vivid overall picture of them. For example, one of my interview questions to provide a metaphor for expert teachers; they responded to it very differently as “sunshine”, “flower fair” or “psychologist.” When I was considering their code names, I adopted these metaphors. For others, I tried to find a proper pseudonym based on their description or perceived characteristics of those teachers who did not respond to this question directly. For example, “Master Admirer” (MA) had a macroscopic perspective of preschool education and in responding to interview questions. Also, she mentioned that a “real master” should have rich knowledge of both theory and practice as her ideal image for an expert teacher. Dark Horse (DH) stood out despite being assigned to an under-performing, restricted

Table 4.1. Participant Demographics Matrix 1

| # | Pseudonym ^a | Abbr | G ^b | Title | Rank | Edu ^c | NSG ^d (Yes/ No) | Work /teach (yrs) | IK ^e (Yes/ No) | M ^f (Yes /No) |
|----|------------------------|------|----------------|--|------------------------|------------------|----------------------------------|----------------------|---------------------------------|--------------------------------|
| 1 | “Fashion Designer” | FD | F | Vice-director | Senior, Exceptional | B.A. | Y | 30/30 | No | No |
| 2 | Sweet Smiler | SS | F | Vice-director | Senior | B.A. | Y | 19/18 | Yes | Yes |
| 3 | “Yunlong Liu” | YL | F | Vice-director | Senior, Exceptional | B.A. | Y | 24/10 | Yes | Yes |
| 4 | Good-will Hunting | GH | F | Vice-director | Senior, Exceptional | B.A. | Yes | 29/27 | No | Yes |
| 5 | “Psychologist” | P | F | Head of teaching & research group | Senior | B.A. | Yes | 21/21 | No | Yes |
| 6 | Graceful Achiever | GA | F | Vice- director | Senior | B.A. | Yes | 21/18 | Yes | Yes |
| 7 | “Master” Admirer | MA | F | Director | Senior, Exceptional | B.A. | Yes | 29/13 | Yes | Yes |
| 8 | “Sunshine” | S | F | Director of child care and education section | Senior | M.Ed | Yes | 17/17 | Yes | Yes |
| 9 | “Flower Fairy” | FF | F | Director of child care and education section | Senior | B.A. | Yes | 16/16 | No | Yes |
| 10 | Dark Horse | DH | F | Director | Senior, Exceptional | B.A. | Yes | 24/16 | No | No |

Note:

- Double quotations of names: indicate the name was derived from interviewees’ metaphors on expert teachers.
- G: gender
- Edu.: the latest educational degree
- NSG (Normal School Graduate): if had graduated from early childhood education normal school or not
- IK (Initial Kindergarten): if their initial school was an exemplary kindergarten or not
- M (Mentored): if was mentored as a novice

Table 4.2. Participant Demographics Matrix 2

| # | Abbr | District | CK ^a | SAR ^b (year-old) | Awards | Training involved |
|----|------|-----------|-----------------|--------------------------------|--|---|
| 1 | FD | Down town | Yes | 3-6 | Shanghai Model, Shanghai Outstanding Educator, Shanghai Top 10 Teacher | Advanced District Backbone Teacher Training Class |
| 2 | SS | Down town | Yes | 3-6 | Best Shanghai Nurturer, 1st prize of Young & Middle-Aged Teacher Excellence Selection | Shanghai Master Teacher Education Center |
| 3 | YL | Down town | Yes | 3-6 | Shanghai Top 10 Teacher, Municipal Imparting Knowledge and Educating People Model | Advanced Shanghai Backbone Teacher Training Class |
| 4 | GH | Down town | Yes | 3-6 | | Shanghai Master Teacher Education Center |
| 5 | P | Down town | Yes | 3-6 | 1st prize of Young & Middle-Aged Teacher Excellence Selection | Shanghai Central Group of Young Teachers |
| 6 | GA | Down town | Yes | 3-6 | Best Shanghai Nurturer, 1st prize of Young & Middle-Aged Teacher Excellence Selection, district awards (2) | Shanghai Central Group of Young Teacher, Shanghai Master Teacher Education Center |
| 7 | MA | Suburban | Yes | 2-6 | National Teacher Excellence | Advanced Shanghai Backbone Teacher Training Class |
| 8 | S | Suburban | Yes | 3-6 | 1 st prize of Young & Middle-Aged Teacher Excellence Selection, Young Star Teacher | Shanghai Famous Principle and Teacher Educating Project, Shanghai Backbone Education Research Training, Teacher and Educator Training, District Potential Master Teacher Training |
| 9 | FF | Suburban | Yes | 3-6 | Best Shanghai Nurturer, 1st prize of Young & Middle-aged Teacher Excellence Selection, Shanghai My Favorite Teacher | District Master Teacher Education Center, District 240 Training |
| 10 | DH | Down town | Yes | 2-6 | 1 st prize of District Teacher's Professional Ethics Speech Contest, Shanghai Outstanding Educator, National Excellent teacher, District Teaching Steed Cup (3) | Shanghai Top Hundred Teacher Training Project |

Note:

- a. CK (current kindergarten): if it is an exemplary kindergarten or not
- b. SAR (students' age range): the age groups they have taught

resources kindergarten, she was awarded the district Teaching Steed Cup three times.

Her responses were reminiscent of the Chinese saying about beautiful lotus, which “rises unsullied from mud”.

The demographic characteristics of these teachers are quite different. However, as shown in Tables 4.1 and 4.2, there are some commonalities across the ten (10) teachers. For example:

1. All teachers were females aged between 30-50 years old;
2. All of them had a bachelor’s degree, and one of them had a master’s degree;
3. Their average working or teaching experiences were 23 or 19 years, respectively;
4. Most of them taught children in the 3-6 year old age group;
5. Many of them worked in downtown kindergartens, a few in suburban ones;
6. Most of them received the 1st prize of the Young & Middle-Aged Teacher Teaching Excellence Selection and had senior ranks; half of them received the honor title of exceptional-rank teacher;
7. Most of them attended advanced training classes or centers at municipal level;
8. All teachers originally graduated from an early childhood normal school or college; and
9. Most of them entered an exemplary kindergarten and had mentors at the beginning of their careers, or transferred to an exemplary kindergarten later.

Profiles of 10 Expert Teachers

Fashion Designer (FD)

FD has the longest working as well as teaching experiences (30 years) and almost the highest reputation among all these expert teachers, not only because of her excellent teaching, but also because of her personal style and standards. She's a special-rank teacher in a downtown exemplary kindergarten, having a distinguished teacher studio. When I asked for a metaphor for expert teachers, she responded with "fashion designer", that is, expert teachers are just like a fashion designer who tailors specifically for individuals according to their unique characteristics and expectation. They "let every kid make progress to some extent on his or her original base." She's a fashion designer in many aspects (e.g., dressing style, information technology application). It will be not a surprise if someone from another province speaks to her, "I am your fan, I am so excited to talk with you fact to face" in professional workshops or seminars.

In many aspects she could be a big exception. She graduated from a district early childhood normal school and then was assigned to a kindergarten that was located in a squatter area (economically poor) with very low quality (inadequate facilities and non-professionals). No mentors, no effective support from her director and colleagues at that time. However, after four years of near-silence, she made a great coup by being included in the 1st-term Young & Middle-Aged Teacher Excellence Selection. Then she was officially transferred to the best kindergarten in this district by convention. Of course, she experienced some ups and downs, but this contest totally changed her career.

Sweet Smiler (SS)

SS kept on smiling all through the interview. She looks young and her voice is very sweet too, however, she has been teaching in the classroom for 19 years in a downtown exemplary kindergarten. She has received many prestigious awards, including Municipal Best Gardener, the 1st prize of Young & Middle-Aged Teacher Excellence Selection, and just from a year before the interview, she began to work as a vice director. She thought she had gotten good opportunities: e.g., co-teaching with an experienced teacher from very beginning; then, in the second year, the kindergarten invited an exceptional-rank teacher to mentor her specifically in dance teaching, which lasted for 5 years. She said, “Mentoring is critical to my professional development.” Naturally she got many opportunities of open lessons. Although she did not admit she was an expert teacher, she is quite confident in music education, “there’s almost no failure in my open lessons.” While, different from regular teachers, she does not like trial teaching, but she is good at thinking and learning from observing others’ teaching. She treasures the working team and traditional research atmosphere in her kindergarten.

Yunlong Liu (YL)

“Yunlong Liu” is a Chinese actor who writes, directs, and acts by himself, so YL thought an expert teacher should be such a multi-talent person that one can teach, research, write and provide administration to programs or offices. YL is a special-rank teacher with 24 years of working experiences. Like SS, she graduated from the municipal normal school of early childhood, entered an exemplary kindergarten and had good directors, and co-teachers. Most importantly, she has the determination to try her

best for everything she does. She said, “I just steadfastly take every step.” Thus, it is no surprise that she grew smoothly, almost without lows in her career. Further, she is not only a good practitioner, but also good at research, writing and administration.

However, one big difference distinguishes YL from other teachers. She got instructions all through the process from many theoretical specialists at the municipal level including university professors, teacher-researchers in teaching and research office. She has taught the children of three teacher-researchers in the Shanghai Preschool Teaching and Research Office, “This is a trust from them, so, as a result, they know me in-depth. That’s why I can ‘worm’ myself into the team of good teachers so early.”

Good-will Hunting (GH)

Based on her 29-year working experiences, GH can always gently capture kids’ hearts as well as know their problems. "Expert teachers should know not only kids’ heart, but also problems as well", she stated. She’s a exceptional-rank teacher now, although being a kindergarten teacher she was quite upset, after she failed the national college entrance examinations twice. Also she did not want to teach mathematics. However, now she likes math education and is a mathematics specialist.

She felt lucky to enter a downtown exemplary kindergarten and co-teach for five years with an excellent teacher, who was very good at math education and became a exceptional-grade teacher within three years. Meanwhile, she stated, “I am willing to follow and listen to kids,” and “I am very diligent. I am not smart, but work hard to do it,” “I am a person having a very unyielding sense of responsibility.” Also, she was bold to try, to open many lessons. Being a mother was a big turning point for her, “mother love

came.” Further, she could share parenting experiences, even unsuccessful ones with other parents. When she talked about how her daughter learnt to play French horn, how to prepare middle school and college entrance exams, I enjoyed the great benefit of her stories as a parent of a girl the same age.

Psychologist (P)

P thought expert teachers should better understand kids’ inner thinking, like a psychologist, then give diagnosis and measures. Actually she thought much deeply about what differentiated a professional kindergarten teacher from normal people. She had already worked in downtown kindergarten classrooms for 21 years and would go on. She’s satisfied with the role as a good teacher and head of Teaching and Research Group in her kindergarten. At the same time, she was nominated as the director of a subject (science) education center by the district education bureau.

Five years ago I interviewed her as an editor of an early childhood education net, right after she got the first prize of Young & Middle-Aged Teacher Excellence Selection. I have always appreciated her teaching style--witty and passionate--but at that time I knew nothing about her confusion accompanying the award. Like GC she believed she was born to be a kindergarten teacher. She liked to read, not only within preschool education. There were always some books, especially books about spiritual life, helping her to overcome one obstacle after another in her path.

Graceful Achiever (GA)

GA looks young and delicate, but has already achieved a lot in her career of 21 years experiences with music education. I was impressed when I first saw her several

years ago. The words “love”, “enjoy”, “interests” have high frequencies in the interviews. Even asked about her specialist, she responded as “I feel my favorite is music education of early childhood” using a soft voice. She could live a more comfortable life, but she transferred herself from an elementary school to current exemplary kindergarten in downtown. She owed her success to her mentor, an exceptional-rank teacher, as whose last disciple. Now she is mentoring young teachers as what her mentor did for her.

Master Admirer (MA)

MA has a macroscopic perspective for addressing preschool education and the interview topics. She mentioned a master as her ideal model for expert teachers who had systematic, wise and innovative thought along with effective practice in education. MA sighed and noted “It’s the good time to be a teacher now. I am really grateful for working under such a great background of education” because there is high-speed development in Shanghai, where a heavy investment in education which is highly valued by the government. She emphasized the first step of a teacher was critical from her experiences: a good (exemplary) kindergarten and a professional director, so she got a very good start and enjoyed success one after another. She became the director of that kindergarten many years later, then some lows followed up. She transferred to the current district located in a suburban area to be a director.

Sunshine (S)

S mentioned “sunshine” which was aligning to the school motto: “Smile at growth mistakes, care for those around you, share things around you.” For me, her smile looked like sunshine. She’s a 17-year classroom teacher with a Master’s Degree, which

is unusual in China. She thought the first open lesson for English teaching had a large impact on her. The memory of an experienced teacher's suggestions from an emotional development perspective was fresh to her. She participated in the Young and Middle-Aged Teacher Excellence Selection for the second time because she was not satisfied with the 3rd prize. Finally she got the 1st prize of this award. The words she gave to novice teachers were that they should resist loneliness, have down-to-earth nature. "Do it first and then gain experience gradually," she added. That's what she has done.

Flower Fairy (FF)

The name of FF came from a popular Japanese cartoon of the same name "Flower Fairy". It was a metaphor for expert teacher given by an expert teacher, who was a vice director with 16-year teaching experiences and responsible for a branch kindergarten. FF said, "Like sunshine, she gives seeds, experience a lot, continue learning, not perfect, love others." About her process to be an expert, she affectionately narrated many stories on her early childhood, her family (especially her father who had died the year before), and her schooling experiences. She is one of a few expert teachers I know who claimed from a very young age that she wanted to be a teacher. She has all the advantages of being a good teacher: has supportive parents, was a top student (the president of student union) of the Shanghai Early Childhood Normal School, was assigned to an exemplary kindergarten, had supportive directors, although her first open lesson was a total failure. During the instruction she stumbled. When the children could not answer her question--which was inappropriate for their age group--she simply kept repeating the same question. Although it was included in her lesson plan it was not

developmentally appropriate. When students still could not answer she realized her questioning was problematic.

Dark Horse (DH)

DH stood out from a very ordinary kindergarten unexpectedly and got the prize of the District Teaching Steed Cup 3 times, just like a dark horse. She is a director of an exemplary kindergarten with 24 years of working experiences. The kindergarten locates in the downtown, many kids come from the consulates around there, so it has international department. That's why DH has an international vision to review preschool education.

From the very beginning, she worked very hard, so she got recognized soon and transferred to an exemplary kindergarten. She posed extra pressure on herself. She said, "As long as there are experimental classes available, I would apply to attend." She was so devoted that she had to ask for leave for half a year due to over fatigue, which also gave her a chance to better reflect and adjust her priorities later. Currently she is a mom of a preschool girl and is happy to play her multiple roles in life.

CHAPTER V

THEMES

A Tree Diagram of Themes

Respondents in the study verbalized significant features of artful practice in teaching. Six themes were identified that designate distinctive elements of teaching expertise and transition to expert. As articulated below, these themes emerged throughout the participant narratives.

From the interviews with the 10 expert teachers six themes emerged (see Figure 5.1). The themes include: (1) recognizing self; (2) conceptualizing expert teacher and teaching expertise; (3) attributing professional growth; (4) acquiring expertise; (5) advising other teachers; and (6) additional influences (from family and life events). Their interrelationship is shown in the Figure 5.1.

These themes are consistent with each other. For example, the expert teachers' conceptions on an expert teacher and teaching expertise (Theme 2) are similar as descriptions of their own self-recognition (Theme 1). When I asked them to describe themselves, their responses almost mirror their descriptions of an expert teacher. For example, P states expert teachers should have subject matter knowledge appropriately associated with particular age groups, have better methods to deliver instruction to children, and better understand how children think. Meanwhile, P stresses that her own teaching specialty is that her ability to acknowledge and accept children unconditionally. She is not influenced by whatever skill deficiencies or other limitations children may present. Similarly, the articulated expertise acquisition experiences are consistent with

their attributions to professional growth. These expert teachers acquired expertise through their professional growth and through additional influences such as support from family member, birth of a child, and illness or death of a spouse or parent. Based on their own positive and negative experiences, as well as their educational perceptions, they gave suggestions for educating other teachers.

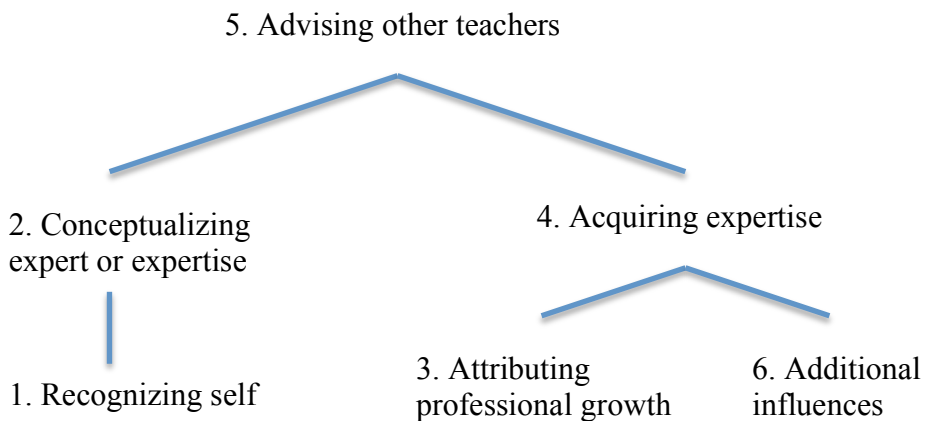


Figure 5.1. A Tree Diagram Indicating Interrelationship of Themes.

Source. Adapted from Saldaña (2013). Copyright 2013 by Johnny Saldaña. Adapted with permission.

Data Summary Representation of Six Themes

This section provides a summary representation of each theme. Within each theme, I combined responses from all ten teachers into one table for comparison and summary. Then I grouped the responses into categories and counted the frequencies of within each category to obtain the central tendency.

I mainly applied their strategies of induction with comparison as suggested by Lincoln and Guba (1985). They list several strategies for data processing and advocate

“analytic induction” with constant comparison, which is best suitable for naturalistic standing (pp.202-204, 333-336). Comparatively, enumerative systems, which require frequency counts, were “peripheral” (p.336) in this study, although some scholars (e.g., Myers, 1997) hold “The importance of an idea is revealed in the frequency with which it appears in the text” (p.319). Here, frequency just plays a supplementary role in my analysis. Actually Lincoln and Guba do not exclude “quantitative summaries” (p.319). On the contrary, they are included in the files of “data reduction and analysis products” for confirmability (initially proposed by Halpern, p.319).

Besides summary representation of each theme, I incorporated thick descriptions from the original data sources (mainly interviews). Thus, these central tendencies can be understood better within the various contexts underpinning them.

Theme 1. Recognizing self

Expert teachers have a clear view of themselves which as reflected in the following aspects: their personality, self-affirmation or self-position, values on preschool education and children, professional emotion and decision, their teaching specialty.

When asked if they were an expert teacher (see Appendix D Table 1), most of them said “no” except for FD who responded clearly with “should be”, and DH who admitted “yeah” with a humble attitude. Two teachers did not like the title “expert teacher” and were even a little scared of it.

In self-description of their personality (see Appendix D Table 2), expert teachers seem to have a sense of high responsibility and ambitions; they try their best to do things well. Also, they are confident, positive, imaginative, stable, practical and approachable.

Some teachers talked much more about themselves than others. For example, FF describes herself as ambitious, diligent, taking things seriously and highly responsible. FD describes herself as confident, devoted, attentive, imaginative, balanced, introverted, positive, serious (about the job), and determined. She sees herself as confident and HJ (one of her mentees) feels the same way. In fact, FD was explicit in her remarks about the sense of confidence:

I believe I can do better. If an activity is not ideal, we often think, “Whoops! What happened for this activity?” OK, next time I believe I can get it done well (tapped the table with her fist). “Why can’t I do it well?” If we have it done at one blow we will “Yeah!” It’s impossible we cannot do it well, otherwise who else can do it?! We must do it well. (FD)

In terms of self-affirmation, most of them admit they are good classroom teachers and are satisfied with that, with a few of them claiming they are ordinary. A few note that they have good introspection skills or reading habits. YL said:

I feel like I am an ordinary teacher or just a good teacher...I think I did quite well in reflecting and adjusting. As long as you have convinced me and I have realized I have this problem, I will seldom commit this mistake again. Further, I can transfer reflection into a way of thinking. (YL)

The teachers think that knowing children well is important; they value their students’ emotional, social and cognitive development. “It’s not necessary to let preschoolers learn too much knowledge. Make them joyous. Let them feel the happiness of the world and

then go on learning in elementary schools with positive emotion” (FD). SS also is proud of her students who are studious, devoted and creative.

Participants prefer having a good relationship with colleagues. They wish to lead fulfilling lives; although two of them (FD and GH) claim that they accept their fates peacefully (just like a Chinese saying, they will do their part, God will take care of the rest). However, many of their interview responses indicate that both of them are positive and very serious about their work. MA stated her values about preschool education,

As a teacher in modern era, teachers must have distinct teaching ideas. We must organically combine kids’ personal, emotional, and social development with cognitive development. Furthermore, we should pay much more attention to kids’ emotional development, good character and social ability. I think it is a feature of preschool education. These ideas must be set up firmly. It should be nurturing people, especially for young children. (MA)

When making professional decisions about a teaching career, most of the experts just followed their parents’ or middle school class tutors’ suggestions, although two of them (FF and S) mentioned their early childhood experiences of getting along well with their peers, which encouraged them to choose an early childhood teaching career. FD and GA already were special-rank teachers, but neither of them initially wanted to be a kindergarten teacher at all. GA complained, “Mom, I have to do my least favorite thing!” when her mom accompanied her to an interview for a normal school admission, where she would be trained to be a kindergarten teacher. FD even had tried several other careers. However, they all went back to kindergartens and finally found satisfaction

there. GA emphasized the career was “difficult”, but there was much fun with young children. There’s an interesting difference between FD and GA. Both of them thought they were competent as kindergarten teachers, but FD thought she could do other professions as well as teaching, while GA assumed this was the only thing she could do well.

Considering teaching specialty (see Appendix D Table 3), expert teachers acknowledge themselves as children-centered (focused on respecting, acknowledging, and knowing children), having certain teaching ability, skills, or experiences in some specific domains like music, math, play or language. For example, FD states,

I think in the process of teaching, I respect learning characteristics of kids, take advantage of teaching moments, and address the totality of children; these are features and ideas of my teaching. All teaching behaviors associated with above ideas are my teaching specialty. Thus, generally much attention is paid to kids’ feelings in my classroom. (FD)

Theme 2. Conceptualizing expert teacher and teaching expertise

Conceptions about expert teachers and teaching expertise include (1) a definition of teaching expertise; (2) characteristics or traits of expert teachers; and (3) a metaphor about expert teachers. Metaphors about expert teachers are discussed in Participants’ section.

Almost all (nine out ten) of interviewees mentioned excellence in teaching when they defined or discussed “expert” or “expertise”, including five teachers who emphasized good interaction with children (see Appendix D Table 5). Further, most

interviewees valued knowing students holistically. GH said, “I like to go to kids to observe them constantly. You must be sensitive to capture kids’ problems, then you will have inspiration to design activities.” Teachers also think that subject-matter knowledge or domain knowledge, especially corresponding to various age groups, is important. They should be quite flexible in their interaction with children. In fact, thinking ability (reflecting, summarizing and analyzing) carries too much instructional weight. These ideas are consistent with the their own teaching expertise (also see Appendix D Table 3). For example, FD proposes that expert teachers must have the ability “to deal with change.” That is, “A teacher can deal with change. He or she can employ professional knowledge to solve problems under expected or unexpected situations when facing the various responses and status of children in classroom.” YL listed five abilities she thought an expert teacher should have:

1. Accept or understand children. Be an equal partner of children to create safe, pleasant class culture;
2. Observe and analyze kids accurately. Observe children what and how they play, what happens and how to solve it. Notice the best and worst cases;
3. Design activities and interact with children. Activities should include interesting process, valuable contents and focused experiences; and
4. Reflect and adjust activities. Reflect matter-of-factly, effectively; reflect on all the work you have done (focusing on lesson plans and practical application, student performance, inputs from other teachers and parent involvement). (YL)

The two interviewees viewed expert teachers from two different perspectives. GA thought expert teachers should have both advanced nature (more capable and innovative) and ordinary nature (practical and operational). AM thought they should be good at both theory and practice.

Two other teachers added morality, and three others added sensitivity as defining characteristics of expert teachers. Other teacher traits included having educational values and ideas, having learning skills and having a positive impact on other teachers.

Theme 3. Attributing professional growth

Professional growth was mainly attributed to personal resources and supportive resources. Personal resources include talents, attitude, motivation, efforts, ability or skills, professional literacy and health condition. Supportive resources include team, environment, opportunities or platforms, research-based programs or projects, and significant persons in their careers.

Most teachers contend that they are personally serious, devoted and enterprising, that they have a diligent, studious and persistent attitude toward their work. Others exhibit more affective responses toward children such as passion, pride and calmness (see Appendix D Table 7). They value a positive attitude, motivation (including needs and professional interests) and efforts (including lots of practice, open lessons, reflection, and thinking). Some professional growth is also attributed to one's personal nature, such as talents and born ability; however, the core concept in their discourse is professional engagement. From attitude and motivation to practical efforts, nearly all

indicators point at this core concept. For example, DH responded to the question “what kinds of factors are crucial for you to become an expert teacher” with recall of her efforts and passion for the job as a novice teacher in a low rank kindergarten:

I feel this is very, very important. There’s a saying that don’t suspect the beauty of light in the dark. When you just start out, you are idealistic, but your passion is wearing off when you meet some things and people around you. I was assigned to a second-grade kindergarten after graduation, where little tasks and no mentors were available, so you were very easy to be frustrated. When I tried home visits, I was so worried if others would laugh at my efforts that I kept the visiting records in the drawer, not telling my director and co-teacher (Smiling). I was in such a work status. I worked very hard to have things well done, but did not want to be said that I worked too hard. (DH)

From all above descriptions, an image of the developing expert kindergarten teacher can be gleaned: a passionate person who is devoted to one’s work with confidence, and very serious about doing a good job and always improving. This enterprising teacher remains diligently studious and persistent with her responsibilities, not only doing more (i.e., open lessons) willingly, but also “wanting to get things done well” (DH) through constant reflection. Meanwhile, having a calm and frank attitude, one can balance work and life well. Even standing out among colleagues, one still honors their students, team and kindergarten and remains open to collaboration.

Among supportive resources for professional development (see Appendix D Table 8), interviewees emphasized opportunities or platforms they can get, like good mentors, contests, open lessons and advanced training. SS said,

Opportunities are very important. Opportunities here mean, take me for the example, the first year of my career I co-taught with Teacher Z (SS's current director). This was a very good start. I interacted with such an excellent teacher closely every day. Then since the second year the kindergarten invited a special-rank teacher to mentor me for about five years. It was very helpful, because she's good at dance teaching, her special expertise. I admired her greatly. (SS)

As teachers acquire expertise, they also value the professional environment around them. These include the curriculum, assignment to a particular kindergarten (whether good or rising), the lesson study atmosphere (on-going systematic cycle—preparing, sharing, reviewing and improving instructional plans and delivery). For example, the curriculum provides the basic framework in which the expert teacher does her work. The kind of kindergarten can either enhance or retard a teacher's professional development, especially regarding the provision of learning opportunities. The lesson study atmosphere provides valuable teacher training and related materials.

A third group of supportive resources is the team. The teacher's team mainly consists of their colleague, along with outside specialists and administrators. They conduct lesson study within the team. Also the team provides emotional support, especially for novice teachers. When a teacher is going to give open lesson, all team

members will provide assistance. It is an everyone's best interest when an open lesson is well received.

A fourth group of supportive resources consists of research-based projects or programs. They help teachers develop a more professional attitude about their teaching responsibilities. They expose teachers to research findings related to their work, and show them how to apply theoretical findings to their everyday practice. Research-based projects or programs also expose teacher to other experts whose focus is early childhood education.

Finally, several expert teacher participants listed several other resources that support teacher development. Among those are the experience gained from daily practice, observation of other teachers' lessons, providing mentoring to other teachers, and various media (integrating children's books, cartoons, movies and songs into lessons to enrich lessons).

During the interview, I posed these questions to each expert teacher: Are there any persons who are very important in your career development? Who are they and why? All teachers listed several significant persons who gave extra guidance and support to their careers. Administrators at several levels played a critical role in interviewees' professional development (see Appendix D Table 9). Among them, the most significant persons for almost all of the teachers were their kindergarten directors. These directors were viewed as professional and fair. They willingly spent time visiting classrooms, observing lessons, and giving constructive comments and suggestions. Along the way the directors trusted and encouraged their teachers, and gave them opportunities for open

lessons and contests depending on their performance. YL listed all three directors who were significant persons for her growth since she became a kindergarten teacher. FD said, “The director is quite critical to growth of a good teacher.” SS also valued encouragement from her directors after her first failed open lesson as a novice teacher:

I knew I gave a poor performance, so I felt very sad. After school I stayed in the classroom playing the piano to let off steam. My directors were very nice. They did not interrupt me. They came to me after I finished. They told me, you gave a good lesson and you would be a good teacher in the future. Today’s problem was because of your deficient experiences. You’d better go home now. You were really good. Their words have influenced me until today. I felt like I must be worthy of my directors’ trust, I would be a good teacher, so I worked harder and harder. (SS)

Additionally, administrators in district education bureaus mainly gave opportunities or platforms (i.e., award, contest recommendation) or even spiritual support. FD felt down for some time, so she planned to transfer to another district, then the Chinese Communist Party secretary in the district education bureau came to visit her specifically on Teacher’s Day,

On September 10, Secretary W came to our school to give regards to teachers. My directors received her. A call from the director asked me to meet her. She said I came especially to see Teacher FD. “Sit down. I have a word for you. Write down my phone number. Call me directly if you need help. Our district is very nice, don’t leave. The ¥2000 is my sympathy money and wish you a happy

Teacher's Day. Reach me directly as needed, I will solve it for you." Then she told my directors, "You should provide a very good development platform and space for Teacher FD. She's our talent. What you are supposed to do is to serve her." I was astonished (laughed). She's intended to back me up, to help me. I was very grateful for that. (FD)

The second group of significant persons was teacher educators or teacher-researchers. Most of them came from the normal university affiliated with China's Ministry of Education and municipal or district teaching and research offices. From the professors in the university, interviewees mainly got inspiration in their way of thinking, or views. Comparatively, teacher-researchers in teaching and researching offices, regardless of municipal or district, could give high positive impact if they can stay in classrooms and communicate with frontline teachers for certain period.

The third group of significant persons included exceptional-rank teachers, experienced teachers or childcare workers, teaching and research group leaders; they promoted interviewees' careers greatly. Retired special-rank teachers were normally hired back by their prior kindergarten or district and focused on teacher mentoring. They had invaluable experiences in early childhood education. They knew children very well and had various effective strategies to deal with expected and unexpected accidents among children. It was almost a scary experience under their instruction because they were very strict and had sharp eyes to find out problems, but interviewees could really benefit from the process. Finally all the resources mentioned by expert teachers were

visualized in Figure 5.2; the size and boldness of the words indicate frequency mentioned by expert teachers; and the inside dark area are personal resources.

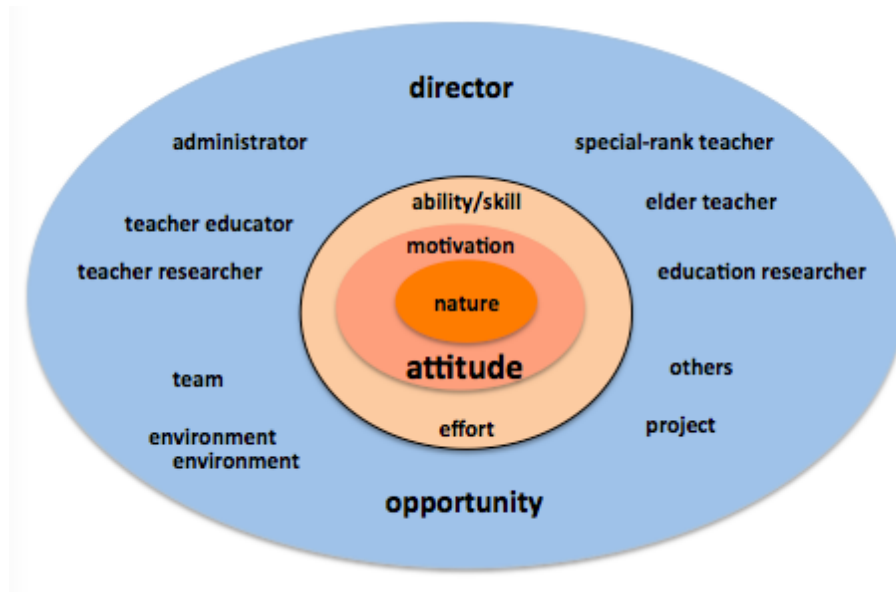


Figure 5.2. Resources for Teaching Expertise Acquisition.

Theme 4. Acquiring expertise

To acquire teaching expertise normally required several key stages or stepping-stones with various strategies. Teachers also discussed prerequisites for being an expert teacher.

In terms of prerequisites for expertise (see Appendix D Table 10), most interviewees acknowledge that natural gifts or talents play a role, but they are not

enough. Other resources such as way of thinking, attitude, efforts, and environment seem more important. GA states:

It is possible to be born to be an expert teacher. He or she has born understanding and wisdom, but I believe it is absolutely not enough. There must be some proper environments, some proper people, then the most important is he or she has the fittest developing channel. Your channel will be changed depending on the space and people around you. Many people have helped me. Also the environment has changed me. If I did not transfer to the kindergarten, I might go on a different way. I believe environment can change people, so do teams in which people are involved. (GA)

Role transition is the most influential event for almost all teachers (see Appendix D Table 11). One novice might transfer from a regular teacher to a group leader (e.g., head of teaching and research group), then to a director of childcare and education department, to a vice director or director. Also an individual might transfer several times in one's career. In this process, a teacher gets more and more responsibilities, while being able to affect more children and teachers around them with a higher-level perspective and a broader vision. Personal life experiences can also be viewed as a part of transition. One female teacher (GH) mentioned her role transition from being teacher to a mother, through which she could devote herself to her teaching job more emotionally than just out of a sense of responsibility.

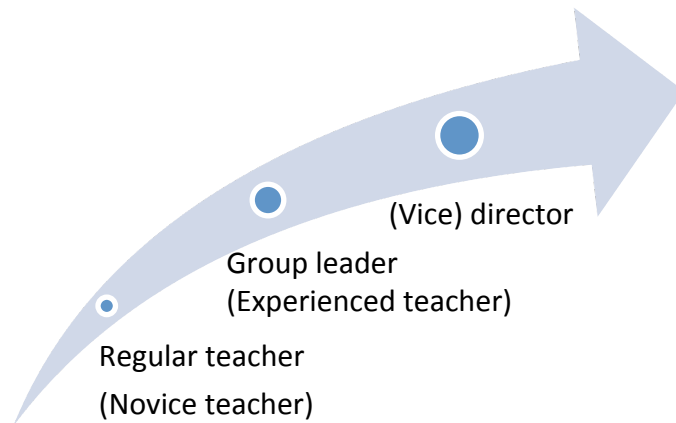


Figure 5.3. Role Transitions Due to Position Changes of Expert Teachers.

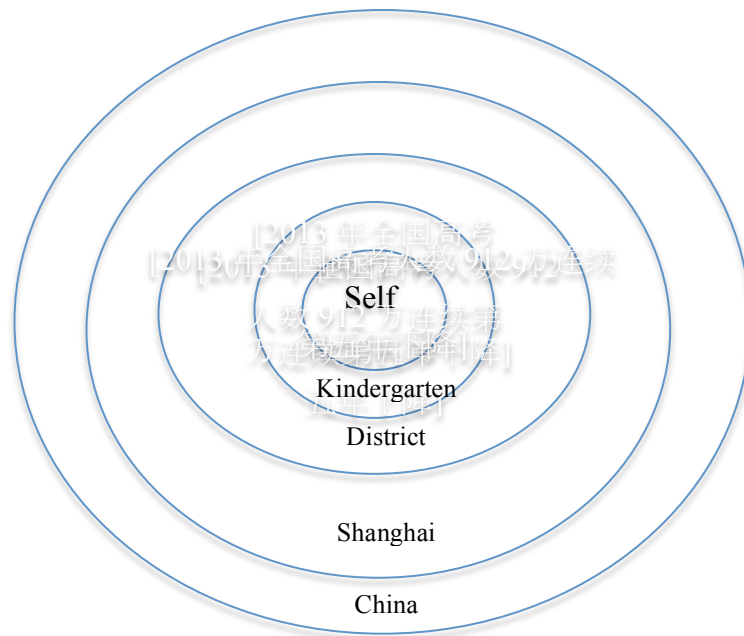


Figure 5.4. The Conditional Matrix: Disseminating Expertise From Expert Teachers.

Source. Adapted from Strauss and Corbin (1998). Copyright 1998 by Sage Publications. Adapted with permission.

With the development of teaching expertise and a professional reputation, expert teachers gain opportunities, recognition and promotion; meanwhile, following their role transitions (novice-experienced teacher or group leader-director or vice director; see Figure 5.3), they give back to other teachers and students based upon their accumulated experiences, skills and talents, proceeding from the close to the distant; that is, from their kindergarten to local districts, to Shanghai, and to all of China (see Figure 5.4). Thus, their impact is far-reaching. For example, they are constantly invited as guest speakers to many provinces in China. A few of them even have reputations in other Asian countries (such as Singapore) and in the international community (especially by participating world conferences on early childhood education, such as the 65th World Organization for Early Childhood Education, OMEP World Conference held in Shanghai, 2013).

Meanwhile, entering or transferring to an exemplary kindergarten also made a big difference in teachers' development. Most of them were lucky enough to work in an exemplary kindergarten as a beginning teacher. Still a few teachers might work in a rising kindergarten, an elementary school or even a quite low-quality kindergarten. However, as long as they stood out from the rest, they were recruited by those exemplary kindergartens very soon.

Participating teaching contests successfully as well as giving open lessons, (regardless of success or failure), the process itself evidently promoted their professional development. GA recalled, "From beginning I endlessly gave open lessons, endlessly. That stage was just open lessons, burnishing teaching skills forever." The most influential competition was Young & Middle-Aged Teacher Teaching Excellence

Selection held every four years. Almost all of these interviewees were first prize holders of this contest in various years. Many teachers, such as FD and P, found that they encountered many career problems after winning the prize of a teaching competition. They still had many issues with classroom management or teaching skills. However, they made a comeback soon through practicing, reading, and reflecting.

Advanced training opportunities (mainly at the municipal level) were highlighted by most interviewees. Quite often, right after these interviewees got the big prize in a teaching contest, they faced bottlenecks in their professional development. Fortunately, those advanced training opportunities seemed to be extremely important in helping them to start anew. And being instructed by certain professors or teacher-researchers under the projects or programs pushed them to review and reflect their thinking and practice. Further some teachers valued what research projects brought to them as a PI or core member.

Nomination to a certain title (“special-rank teacher” or higher) inspired interviewees to explore their potential. Other influential events included leading curriculum reform, writing papers, having special early experiences and experiencing traumatic incidents such as student mortality (for example, illness detected by teacher at school resulted in student’s immediate death when taking to hospital by grandparents).

Graduating from normal school or college with a focus on early childhood education was not mentioned as a turning point by most of them. For example, DH thought it did not matter too much for teacher career. GA seemed to hold this view. However, GA was employed at a primary school after graduation and did a good job

there, but she finally transferred to an exemplary kindergarten, which she really preferred. A few others thought a major in early childhood education to their subsequent teaching careers did matter. For example, YL claims, “I think the pre-service teachers should study in this major, which can lay the foundation of understanding the career briefly.”

All key steps in their careers are demonstrated in Figure 5.5. For example, in her narrative, GH shared her two major role transitions: (1) being a mother and (2) being appointed as a vice director.

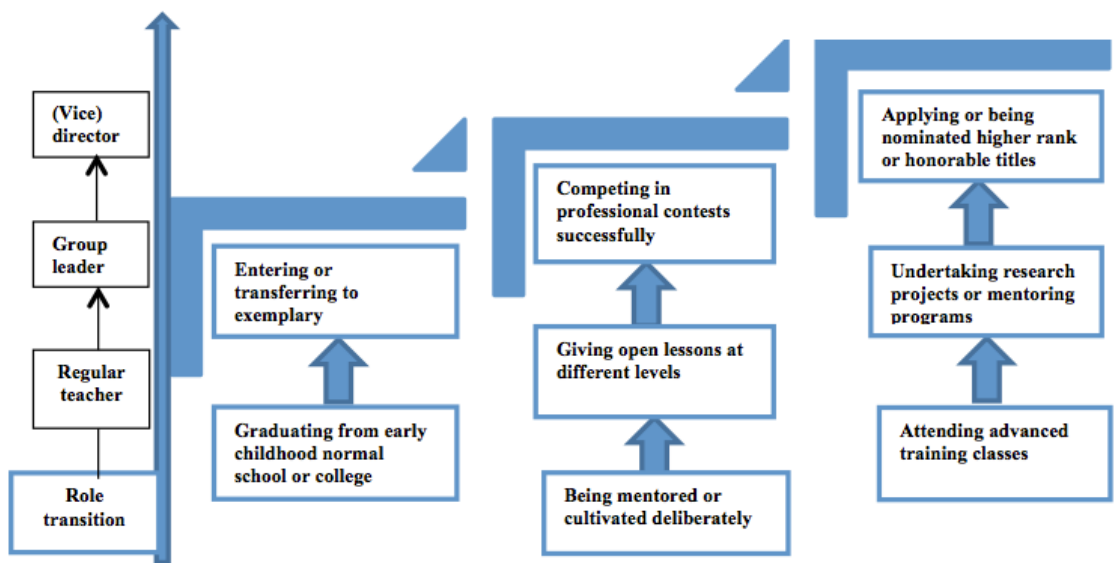


Figure 5.5. Key Steps of Professional Growth.

For a time I did not want to go on being a kindergarten teacher any more. It might be my transition after my daughter was born. Mother love came. I had

been a responsible teacher before, after that I transferred to the standing of parents. ***I was not only a teacher, but also a mom, so the relationship between parents and I was much closer than before.*** Since I did everything for kids from a mother's perspective, other mothers absolutely would appreciate her extra efforts.

Administrators began to put me in an important position as a vice director, ***to appreciate me with lots of opportunities.*** That is, giving you a platform, so you were not a regular teacher anymore. It was stressful. You needed to instruct other teachers at the kindergarten level. (GH)

She also shared several key steps in her career trajectory from novice to expert: (1) being observed and commented on by a municipal teacher-researcher, (2) receiving advanced administrative training and (3) Being nominated as a district top talent.

Schaufeli (a teacher-researcher in the Shanghai Teaching and Research Office) wanted to study the new curriculum for the “2nd-Term Curriculum Reform” focusing on how to integrate math activities into other areas. ***She sat in my classroom for two years from middle group to senior group.*** Every Wednesday she came to our kindergarten to observe my half-day teaching activities. ***I made great progress in these two years.*** She's very nice.

This was a big challenge for me. She worked in the Shanghai Teaching and Research Office, a leader of Shanghai preschool education. She sat in my classroom to observe individualized learning in kindergarten regional activities, a collective activity, and then analyze them with you. ***I grew up very quickly in the***

profession because of more opportunities. For visits from a specialist, I needed to prepare carefully to do well. Our director Z and the exceptional-rank teacher X instructed me too. Then Teacher H let you give lectures and open lessons at various levels. *To undertake such activities many specialists will come. The one who benefits most is you.* (GH)

GH received advanced administrative training as a new member of the municipal master teacher education center and undertaking a municipal-level research project.

I was among the 1st-term students of the Shanghai master teacher education center of Teacher F for two years. She invited many specialists to give us theoretical lectures. *I applied for and received an approval to initiate a municipal-level research project* under the support of the Shanghai Famous Principle and Teacher Education project (Students from the center had priority to apply it). *I felt more confident* with this research project (smiled). (GH)

GH's additional career development was fostered by her nomination as a district top talent. She confronted both pressures and opportunities due to the nomination.

Our district has a top talent honor, which is the pool for future special-rank teachers. At first I did not want to apply because I had failed in 2008. However, our kindergarten communist party secretary recommended me to the district. *The honor itself did not give me much stress, but the stress came from me. Since I was a top talent, the district invited mentors for me* at my request, including my first mentor Teacher X, director Z and Teacher H at municipal-level.

Teacher H provided me many platforms such as giving open lessons and lectures, then they instructed me. I trusted them. *There's pressure, but opportunities for learning too.* You should amount to something. I attended many lectures and other training activities, again and again. I feel like people should have pressure, so you will make progress. *You will not go backward as long as you still aspire to achieve.* I am obedient, diligent. I cannot sleep when I think of something (relevant to work), playing in my mind like a movie. I take it very much to heart. (GH)

The most popular strategy to be an expert is to learn, from various people and their surroundings (see Appendix D Table 12). For example, to learn from others (mentors, various voices, parents), books, life or family events, and previous failures. FD stated, "The especially important factor is learning, learning ability which is generally spoken by us all. A teacher must learn from books. She must learn from colleagues in practice and from kids in practice." SS started her job from imitating her mentor's teaching, which brought remarkable changes. Both DH and YL proposed being mentored or mentoring others was a good way to learn.

Many interviewees mentioned, "To think," further "to reflect" and "to question" the educational practice as a way of thinking. DH thought, "It is by accumulating cases that an experienced teacher excels to become an expert teacher. Only when she understands, reflects and refines cases well, she can be an expert teacher." "To write" was also based on thinking and reflecting. FD commented herself, "I am a person who is

very skilled at reflection, sitting there to think and think. I am a thoughtful person. Never stop thinking, but with fun.” She also states:

In the learning process the ability of thinking, reflecting is indispensable, which is reflecting ability what we talk about normally. People should have a habit of reflecting. Further, let you be full of confidence in the reflection. Confidence is very important. (FD)

Also, several interviewees emphasized practice and giving open lessons. Practice here means routine work requiring basic skills and classroom management skills. SS states, “I feel my growth is impossible without practice. I have good mentors along with many opportunities for practice. Practice opportunities are open lessons. I grew out of giving constant open lessons.”

Others included preparing lessons carefully, seize opportunities, conducting research, communicating with colleagues, and self-affirmation after practices. FD claimed herself “I am a person who likes to gloat over my own success” for several times. Following the topic on reflection she stated,

Reflect my failures? No. Everybody has failure. Success will not make a whole lot of sense without failure. Actually it is impossible. I liked to gloat over my own success when I was young because I am kind of an introverted person. I was often intoxicated with, ‘Hey, this is a good sentence I said just now’, “Wow, I got this kid today” (smiled). This kind of happiness could influence me for one or two months. That is likely to be the case for the pain of failing. (FD)

Theme 5. Advising novice teachers

Expert teachers gave suggestions on teacher education based on their experiences. They talked about prerequisites of new potential teachers and effective fostering strategies.

Interviewees have prerequisites for novice teachers who might develop into experts (see Appendix D Table 14). The first one is a positive attitude, which includes displaying enthusiasm for people around them, loving children and their careers, while at the same time “being ordinary” and self-directed, being devoted to their job and being modest. Many teachers include “efforts”, which can be merged into the category attitude. For them, it seems to mean trying your best, being willing to try new and /or different content, methods and materials. GA stated:

We have many interns from the E Normal University. When they enter classrooms, my biggest worry is their interaction with children, if they can accept children; this is the most important thing. I realize I work sedulously because I like children. I tell them in simple words: “don’t let me see you standing in the classroom. You should squat to play, communicate with children.” Only then can you really understand and listen to children. You are at the same lever. Thus, you can be a good teacher. After that I will talk about teaching with you gradually. It must be that you like children, like teaching first, you are easy to accept teaching ideas. (GA)

Participants believe there are some indispensable inborn qualities to be an expert teacher. For example, FD, YL and FF all talked about playability. These individuals

display a bright, cheery and high-energy personality, as well as an easy and open friendliness. These characteristics could be nurtured later, but was quite difficult when it is personally unnatural. FD stated:

He or she must be very emotional, not too reasonable. Actually I am quite logical, but I am willing to be an emotional person, because this kind of people is imaginative, full of playability, that is so-called childishness. Right? If a person cannot play with children, children will not like him or her, even if he or she loves them. (FD)

These expert teachers think novice teachers do need to develop other important skills--language skills (including writing and verbal expression) and thinking skills (especially thinking in-depth or to a level of good understanding). Other important ideas relate to teacher values. YL even spoke of Chinese Three Gates critical for female teachers. That means, if they cannot smoothly go through the tests of love, marriage, and child rearing, their careers might be affected negatively. Problems in either of these areas might inhibit teacher concentration and performance, relationships with students, parents and colleagues, and the longevity and employment as a teacher.

For suggestions given to the novice teachers, interviewees have different ideas based on their perspectives (see Appendix D Table 15). Having the right attitude (liking the job, being serious) is the first priority, followed by having an understanding of teacher's role and what the job will specifically entails for them, and then they need much practice teaching for their work to be both effective and pragmatic. Teachers should commit to on-going learning from multiple sources: formal education,

colleagues, practice, books and educational media. They really suggested that novices choose a good kindergarten (one which has supportive director and collaborative colleagues) and develop positive relationships with people with whom they interact on the regular bases. P warns novice teachers that a kindergarten teacher must do much more than simply teaching children to sing and dance. She stated:

Don't assume kindergarten teachers too perfect. Just like what have been said in *The Art of Mind* (a popular TV series in China), "sometimes are critical" (for kids' development), but only sometimes. Don't think a lot of the teacher role. Should be humble. However, we know what so-called "help constantly", that is, what we often and mainly do is to help each kid grow. I think this sentence gets teachers and kids closer to each other. It also indicates the meaning of inspiring, supporting and comforting. You should have a relatively reasonable and objective understanding about it.

Furthermore I will tell them to like a job. I was ignorant to be a kindergarten teacher. However, doing what you like to do is a kind of happiness, liking what you are doing is to cherish your good fortune. Only in that way will you read, be serious, work hard, think, upgrade, that is, gain something. (P)

To educate novice teachers, interviewees value establishing good environments (see Appendix D Table 16). Three of them mention giving teachers time for open lessons or platforms; and two talk about building teams to improve the overall quality of the teaching staff. DH stated, "Give young teachers opportunities, visions, but also time." She gave some examples to show that it is important not to rush things so to avoid too

much pressure. Expert teachers also suggest it's more productive to support novices in a gradual, step by step way than to overburden them with too many requirements and too high expectations at the same time.

In order to help novice teachers develop their instructional capability, FD, GH and GA think it is most effective to show them how to teach by simultaneously demonstrating and explaining their lessons. FF suggests some strategies in detail. For example, recording and reviewing videos of mentors and mentees, reviewing mentors' notes; paying attention to every child, asking novice teachers to fill forms with all children's names and recite them to prepare teachers to become very familiar with their students.

GA and DH talk about teaching and research meetings or conducting lesson study (weekly) as a part of routine work. DH also insists on reinforcing basic skills such as the best spots for teachers standing in the classroom (for visual oversight) or writings of lesson plans and the relevant preparations. SS advocates being mentored sooner rather than later.

Theme 6. Additional influences from family and life events

Besides personal and supportive resources for professional growth, some teachers mentioned additional influences from their family and life events. Not all teachers talked about their families and lives during the semi-structured interviews, although a few of them addressed them heavily in interviews (see Appendix D Table 17). For that reason these resources are just listed as additional ones. Among them six (6) teachers explicitly mentioned the influence from their families or lives. Their family

members could give big help to their work. For example, GH and FF' husbands helped them make teaching and learning materials. GH and FF also shared their child-rearing experiences with other parents. Almost all of these teachers had a supportive family behind them and led a colorful life, which stimulated ideas for their teaching. Full of emotion, FF recalled how each step on her way her father had helped her:

Three years later it's time to graduate from the normal school, and then I had two choices again. I could go on studying for an associate degree, or go to work. My father was a strange person; he would like to show me my direction clearly. Of course he passed away, but he casted an enormous influence on my life. He let me go to work. He said you could learn a lot in practice. My father knew me well that I would never concentrate on my study too much. If you like to play, to do something, you'd better go to work. Learn what you want in practice, but you still need to study. You can work in weekdays and study in weekend, only then you would find it's important to study, because practice requires it. (FF)

Also, these teachers can draw inspiration from their own lives. FD often connected her perception of life with work. For her a small gathering of friends could be an origin of a reflection article. Understanding of the relationship with her husband could be incorporated into reading instruction. She stated:

My husband and I...Recently I gave a lesson. There's a picture book called *The Destined Couple*. Really great! It's the last volume of *The Love Trilogy*, written by a woman writer.

The first one is *A Crocodile Fell in Love with a Giraffe*; the second one is *Move Here and There*. This is the love trilogy. I have had the first two volumes before, this time I gave a lesson on *The Destined Couple*. All felt funny. How could make children accept the crocodile and giraffe were the destined couple, although they denied at first? However, finally children said they really matched perfectly (got delighted). My husband and I are the destined couple.

When I walked imaginatively in the street with him, Ah, (I saw) a setting sun, red, very beautiful. My! Sometimes the sun between high buildings are quite impressive, especially we used to seeing the one in fields. I spoke to him how strong my feeling was, but he just “Ok, let’s cross the road.” I said why it could be so big. He said how big it was. I said had you seen just now? I was going to be mad at him, right? Actually we were crossing the road. Later he said, you know, if I looked at it with you we must had been hit by motor vehicles. Hey, I think this is the destined couple. (FD)

DH’s husband is a doctor, so they notice different facets of their daughter when they raise her. From those experiences DH is inspired to improve teaching behaviors in her kindergarten. She states:

For example, when my 4-month-old daughter got a shot she did not cry at first. I said, “Baby is so brave that you don’t cry for shot,” which are common remarks spoken by female kindergarten teachers. However, my husband was calm and said, “This is pain sense delay. She will cry after the needle is pulled out.” When she’s one year old she got two shots. She did not cry for the first shot. I said alike

remarks again, so did the nurse, which is a typical example of women thinking, “Baby is so brave that you don’t cry for shots.” My husband said “there’s no kid in the world not cry for shots only if he’s an idiot.”

Thus this made me reflect our classes of 2-3 years old kids. For instance, when they cry for blood test, we often feel it’s a shame to cry. Actually cry is a normal way to release pressure, so I tell teachers never only reward those kids who do not cry with stickers. As long as they get the shot we should give stickers to them regardless of crying or not. (DH)

Finally, how do teachers, themselves identified as experts, describe expert teachers based on these six themes? Summarily, they submit this description: excellent practitioners who love, understand and interact with children, who have systematic and dynamic knowledge of distinct domains associated with various age groups; who are critical thinkers and diligent learners with noble morality. Teacher expertise increases gradually with every step of their careers. This study found distinctive career trajectories of expert teachers, which comprised of eight (8) key steps along with various developmental strategies. Novice teachers’ careers might start from low points, but, sustained by professional engagement, they can exploit supportive resources and make qualitative leaps in teaching expertise.

Teachers’ Professional Engagement

All of the transcripts coded indicated a significant focus on teachers’ professional engagement. Triangulated responses from the focus groups of teacher-researchers confirmed the central nature of professional engagement as a construct. As such,

professional engagement was the central organizing construct in this study. In keeping with Strauss and Corbin (1990), the concept *professional engagement* had the “analytic power” to “pull the other categories together to form an explanatory whole” and “account for considerable variation with categories” (p.146).

Professional engagement meant that teachers continually used multiple strategies and all possible resources available to them in order to develop their teaching expertise to its highest level with the goal of providing the best instruction possible to their young students. They constantly strived to become better teachers. They looked for new ways and new opportunities to become better professionals. Professional engagement included behavioral, emotional, and cognitive properties. For example, “I worked very hard to have things well done” (DH, behavioral property); ““Wow, I got this kid today.’ This kind of happiness could influence me for one or two months” (FD, emotional property); “I felt like I must be worthy of my director’s trust, I would be a good teacher, so I worked harder and harder” (SS, cognitive properties). As a result, the concept of professional engagement permeated across all six themes, as well as across all 10 teachers, and became the central phenomenon of this study. As suggested by Strauss and Corbin (1990), this phenomenon was the construct around which the six themes could be organized and encapsulated the process apparent across the six themes.

CHAPTER VI

DISCUSSION

The purpose of this naturalistic inquiry was to explore the developmental paths of early childhood teachers as they transition from novice to expert in Shanghai, China. This chapter provides responses to specific research questions; the responses reported here are based on findings from multiple data sources and analytical methods. The chapter includes the conceptual framework, which emerged from ten coding schemes and six themes. The resultant findings suggest a productive path for the most effective professional development of novice teachers and provide credible recommendations for further study in the field of early childhood education.

Responses to the Research Questions

Question1. How do expert early childhood teachers conceptualize teaching expertise?

Expert teachers who participated in this study strongly agree in their responses to this question. And their opinions are consistent with findings cited in the literature review. For example, the two most significant attributes of teaching expertise recognized by researchers are (1) knowledge (of subject, pedagogy, students and context), and (2) performance (good teaching behavior in practice). In the literature, attributes of expert teachers often overlap. Knowledge of children and content domains overlap with knowledge and performance. Despite the use of different terminology, there is general agreement in the overall description of an expert teacher. This is shown in Shulman's (1986) "subject matter content knowledge," Stough and Palmer's (2003) "knowing

students in depth,” Hattie’s (2002) “leading classroom interactions,” and “observing and responding to students with affection.” Similarly, most of the teachers in this study view experts as excellent practitioners in interacting with and teaching students, who have rich knowledge of children and content domains.

However, in contrast to primary school and middle school teachers, for kindergarten teachers, there are no distinct subjects. Domain here means the combination of content areas and subjects. Content areas were adopted in new currently used teaching materials of the “2nd Term Curriculum Reform”. Prior to the Reform (in the 1990s) these areas were simply called subjects, which included math, science, painting, physical education, language and music. Further, their knowledge of domain normally is associated with age groups. Knowledge of children is not limited academically or emotionally, but encompasses all of children’s development, especially their age-related physical, cognitive and social development. Expert teachers, the ten participants emphasize, can implement knowledge dynamically into practice. In addition, they prefer the expression “interact with” rather than “teach” children when they talk about practice; this distinction is made to emphasize that teaching is not a one-way kind of input; rather, teachers and children should work together.

Secondly, an important shared concept of the teacher participants is that experts are reflective, critical thinkers as well as lifelong learners. This is highly consistent with the statements of Confucius. Confucius said, “He who learns but does not think, is lost! He who thinks but does not learn is in great danger.” Further, he said, “I reflect on myself three times a day.” Confucius himself was an expert teacher. He was claimed to be

Exemplary Teacher for All Ages in China. About himself he said, “Never be contented with my study, and never be impatient with my teaching.” He taught all students equally but according to their aptitude, and taught students by his own examples.

Thirdly, expert teachers are expected to have noble morality. Osguthorpe (2008) contends that we want teachers of “moral character,” because we expect them to “teach fairly, respectfully, magnificently, honestly, and compassionately.” China has a long tradition of valuing morality in teachers. The Ministry of Education of the People’s Republic of China (MEPRC, 2013) recently released the Guidance of Establishing and Improving Long-term Mechanisms of the Construction of Teachers' Morality in Schools, which mandates that morality be a core component of teacher assessments, having the priority of "one-vote veto" (depending upon the seriousness of a morality issue, it just take one person’s vote to veto a teacher’s career advancement). If a complaint is made by parents or peers that a teacher has done mean or inappropriate things to students, then he or she will lose the opportunity to apply for higher titles or honors or even their jobs.

Triangulated evidence (achieved by collecting responses from two unrelated focus groups of teacher-researchers) indicates that they highly agree with the ten study participants of expert teachers regarding the characteristics of expert teachers. Teacher-researchers, though place much emphasis on teachers’ ability to connect theory with practice and the research capability of expert teachers, although they too give priority to practice. “Research” here means lesson study that is closely relevant to practice. Teacher-researchers not only expect outstanding performance by expert teachers themselves, also they expect them to have the ability to demonstrate and transfer

teaching knowledge and skills to other teachers. One reason is that teacher-researchers come from different districts in Shanghai. As such, they normally focus on the regional development of preschool education. They hope that a few well-placed expert teachers can serve as teaching models to recruit future teachers and to encourage the development of all teachers within a given district.

Thus, in Shanghai early childhood teachers' views, an expert teacher is an excellent practitioner in loving, understanding and interacting with children, with systematic and dynamic content knowledge associated with various age groups. At the same time, he or she is a highly reflective thinker and diligent learner with noble morality.

Question2. What are the personal and supportive resources that 10 early childhood teachers attribute to their professional development from novice to expert teachers?

Professional growth was mainly attributed to personal resources and supportive resources. Personal resources include talents, attitude, motivation, efforts, ability or skills, professional literacy and health condition.

As one component of personal resources, disposition was defined by Wilkerson and Lang (2007) as “teacher affect--attitudes, values, and beliefs that influence the application and use of knowledge and skills” (p.2). They also affirm that measuring disposition is both necessary and possible. The nature and characteristics of expert teachers include an affective facet and a cognitive facet. Here, the former covers attitude and motivation; the latter covers ability and skills. Efforts belong to the behavioral facet,

but are closely related to the affective facet as well. All are derived from teachers' professional engagement (Becker & Riel, 2000; Hanrahan, Ryan & Duncan, 2001).

Supportive resources include team, environment, opportunities or platforms, research-based programs or projects. Among these, expert teachers in Shanghai primarily value people or occasions that allow them to learn new things, have “growth” experiences and demonstrate their skills. These include mentors, contests, open lessons and advanced training. There is a tradition in Chinese public schools (including kindergartens) called master-apprentice model. Normally, prior to the beginning of a coming semester, each new teacher will be assigned to an experienced teacher (master or mentor) according to his or her specialty and interests. New teachers are instructed thoroughly and deliberately. They observe and are observed in the classroom, with critical but practical feedback and suggestions for improvement by their mentors (Guo, 2005; Hu, 2005; Tsui, 2009). Furthermore, China's new trend of school-based teacher training makes mentors central to teachers' professional development (Crasborn, Hennissen, Brouwer, Korthagen & Bergen, 2010; Wang, Odell & Schwille, 2008).

Various contests, especially teaching contests, are a good opportunity for young teachers to stand out, as well as for administrators to cultivate and select high quality teachers. Departments of educational administration at different levels (school, district, city, province and nation) have organized various contests and competitions as strategies for teacher development (Li & Li, 2009). Another career booster is open lessons. As part of lesson study, open lessons, together with lesson planning and reflection, are used widely and routinely in Asian countries like China, Japan, and Indonesia to improve

teaching skills as a central part of professional development. Although for lesson study teachers focus only on a few cases, those occasions give rise to an important learning community among them, which is extremely meaningful both personally and professionally (Miyakawa & Winsløw, 2013; Pang & Marton, 2003; Richmond & Manokore, 2011; Saito, Harun, Kuboki & Tachibana, 2006).

Supportive resources also are provided by the environment. Environmental assets include the curriculum, assignment to an exemplary or rising kindergarten, and the lesson study atmosphere. Berliner (2001) claims researchers should pay more attention to the context in which expert teachers work; for example, their working conditions can be a “powerful influence” among supportive resources. Assignment to a particular kindergarten is the most important one of their working conditions.

Exemplary kindergartens are an important system in early childhood education in China. Kindergartens normally are designated as various grades (Grade 1, 2 and 3) according to the quality of teaching, curriculum, environment, which includes spaces for special classes, equipment and manipulatives, and other resource provisions. Exemplary kindergartens are at the top end and are entitled to demonstrate and instruct ordinary kindergartens (Moyles & Hua, 1998; Zhang & Tang, 2010; Zhao & Hu, 2008).

In addition, the kindergarten team is regarded as a part of environment or context. It is a professional learning community contributing to effective teaching and learning. As Borko (2004) said:

The powerful collaboration that characterizes professional learning communities is a systematic process in which teachers work together to analyze and improve their

classroom practice. Teachers work in teams, engaging in an ongoing cycle of questions that promote deep team learning. This process, in turn, leads to higher levels of student achievement. (Borko, 2004)

Among supportive resources, significant persons (not limited to mentors) hold a special place. In China educational administrators, especially professional directors in kindergartens, play the most important supportive role in teachers' careers. This is inevitable in terms of official-standardized traditions existing in China for a long time. Different-level administrators are gatekeepers of the highly structured educational system. They determine a teacher's opportunity to apply for a certain title, participate in a contest, or even give an open lesson to advance within the educational system. The educational system mirrors the whole administrative system in China. Thus, professional opportunities are given by supervisors but not achieved by an individual. Almost all of the expert teachers who participated in this study are members of the Communist Party of China, so they are supposed to strictly comply with the hierarchy.

The second group of significant persons includes full-time teacher-researchers in municipal and district teaching and research offices, which are quite different from the West. As part of the three-level (city-district-school) curriculum management policy (Guo, 2009), normally teacher-researchers are selected from kindergartens with an excellent teaching reputation. Their daily job is to conduct lesson study (planning, observing, discussing lessons) with teachers in kindergartens to enhance the overall teacher quality in the city or a district. They can be regarded as initial gatekeepers of opportunity for professional development of teachers.

The third group of significant persons is special-rank teachers, whose expertise has been documented by teachers' ranking and promotion policy. They are teachers who have high reputations in teaching with many years of experience (Li, Huang, Bao & Fan, 2011). They are often invited to instruct young but promising teachers as mentors after retirement.

Triangulated evidence from the two focus groups of unrelated teacher-researchers reveals their agreement with expert teacher participants regarding Question 2, which asks about the relative contributions of personal and supportive resources. Teacher-researchers think expert teachers are first supposed to have the following *personal resources*: they have high motivation with practical problem-solving skills; strong love for children, career and life; impressive critical thinking ability, in-depth knowledge and teaching skills. Teacher-researchers also agree that *supportive resources* are primarily provided by kindergartens (director, mentor, platforms) and districts (cultivating plans, platforms). Indeed, several expert teachers mention the positive impact of full-time district-level teacher-researchers, especially those who can spend time in the classroom with them. Slightly different from expert teachers, teacher-researchers based on their roles emphasize the importance of planning at the district level.

In summary, multiple resources (personal, supportive resources and additional influences) help teachers develop teaching expertise. *Personal resources* differ greatly from person to person and determine a teacher's disposition toward professional engagement, which is comprised by one's attitude, motivation and intrinsic nature. *Supportive resources* come from outside the teacher and include all things provided by

others to support professional growth. Here these resources are categorized as (1) opportunities (good mentors, competitions, open lessons and advanced training), (2) environment (curriculum, rising kindergarten and research atmosphere) and (3) participation or access to research-based projects or programs. In addition, significant persons in their careers—various level administrators, teacher educators or teacher-researchers in university or college and experienced kindergarten teachers--hold a special place in their professional development.

Question3. How do 10 early childhood teachers describe their process of transforming from a novice to an expert teacher?

Early childhood teachers describe their transformation process in ways consistent with several scholars' findings that experts are "made not born" (Ericsson, Prietula & Cokely, 2007; Marzano & Tree, 2012). However, based upon their own experiences, most of the expert teachers admit that it is quite difficult to acquire teaching expertise without having certain personal pre-dispositions or talents. Beyond personal characteristics though, for most expert teachers there are specific steps along the path from novice to expert. Eight shared stepping-stones of their career development are identified:

1. Graduating from early childhood normal school or college;
2. Entering or transferring to an exemplary kindergarten;
3. Being mentored or cultivated deliberately;
4. Giving open lessons at different levels;
5. Competing successfully in professional contests;

6. Attending advanced training classes;
7. Undertaking research projects or participating in mentoring programs; and
8. Applying or being nominated for higher ranks or honorable titles

These eight stepping-stones are compatible with Berliner's five stages, including (1) novice, (2) advanced beginner, (3) competent teacher, (4) proficient teacher and (5) expert teacher (Berliner, 1988; Dreyfus and Dreyfus, 1986). The eight ones here are much more contextualized to reflect the experiences of early childhood teacher development in Shanghai than the five in Berliner's model. Nor are they as linear as Berliner's five. For example, it might be possible for an expert teacher to be noticed and (2) transferred to a better kindergarten, then (3) cultivated deliberately *only after* (5) she/he has won a contest.

For novice teachers, acquiring teaching expertise is both an individual and a group experience, of which the most important three (3) strategies are learning (from various people and their surroundings), thinking (or reflecting), and practicing (e.g., giving open lessons). This part of China's teacher development efforts reflect Wisconsin's inquiry-oriented elementary education student teaching model, which encourages teachers to actively reflect on their knowledge, contexts and role (Zeichner, & Liston, 1987). In fact, China uses practice, especially deliberate practice as one of the defining activities by which novice teachers gain proficiency as experts. This model described by (Ericsson, 2008) as action targeted particular tasks with immediate feedback, followed by time to solve problems and refine performance. Open lessons are a clear example of deliberate practice. Before an open lesson, teachers make a lesson

plan in detail, conduct a trial teaching session, get feedback from colleagues and specialists, reteach and revise, until the finalized open lesson is conducted.

Triangulated responses from the focus groups of teacher-researchers confirm the stepping-stones and strategies identified by expert teachers as ways by which novices acquire teaching expertise and promotion. Sometimes, the terminology used by teacher-researchers varies from that used by the expert teachers, but they all emphasize the same general path to professional development and advancement (giving open lessons, conducting presentations, receiving awards and advanced training, being mentored or cultivated deliberately, and participating research projects). Teacher-researchers acknowledge that in China's education system, opportunities for professional development depend upon bottom-up hierarchical recommendation, especially at the district level. Both expert teachers and teacher-researchers agree that district teacher-researchers are critically important gatekeepers in this process.

In short, from initial graduation from a early childhood normal school to working in an exemplary kindergarten environment, to being deliberately mentored and much targeted practice, to accessing to advanced training, competitions, research efforts and nomination to higher rank, the paths to expert teacher status are quite similar. All participants in this study agree that on going learning, deliberate practice and critical thinking are among the most effective strategies for reaching that status.

A Proposed Framework for Professional Engagement

As stated in Chapter V (Themes), six (6) themes emerged from the data: (1) recognizing oneself, (2) conceptualizing the expert teacher and teaching expertise, (3)

attributing professional growth, (4) acquiring expertise, (5) advising teachers, (6) Influence from real life occurrences and family. I arranged the themes and categories into a proposed framework (see Figure 6.1) based on a model put forth by Stough and Palmer (2003), who were originally influenced by Strauss and Corbin (1990).

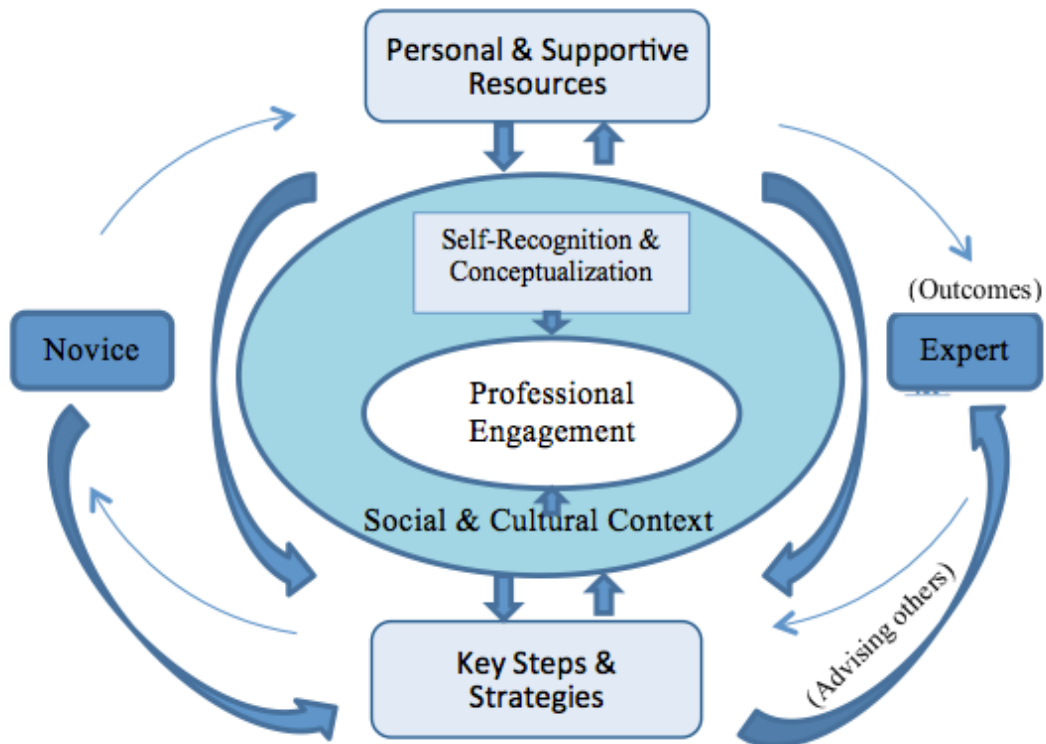


Figure 6.1. A Proposed Framework Centered on Professional Engagement.

Both themes--self-recognition and conceptualization of expert or expertise--function as intervening conditions that could influence causal conditions (personal and supportive resources), which together with additional influence from family or life events impact the strategies (key steps and role transitions) used to acquire teaching expertise. Especially, better supportive resources (e.g., enough computer access in job)

can also directly promote expert teachers to help their peer teachers (Becker & Riel, 2000). As outcomes of these noted conditions and actions, novice teachers gradually grow up to become expert teachers. Then they begin to mentor or educate other teachers, sharing their rich experiences and advanced training as model teachers. From these mentoring experiences, expert teachers also can grow and achieve an expanded sense of success. These components of the framework bilaterally interplay among each other. These experiences can help them adjust their understanding of the contributions of professional growth to a teacher's development. They may also learn the importance of employing new strategies for career advancement.

These themes and categories are consistent, interrelated and they all support the central phenomenon—professional engagement. Research on teachers' professional engagement does not appear frequently in teacher development literature. However, Tsui's (2009) work maintains that engagement is the most important path by which to reach the level of expert teacher. Becker and Riel (2000) define engagement in terms of specific behaviors, a more complete and parallel to professional engagement may be found in work engagement. As such, professional engagement may be regarded as an active work state of teachers with emotional, cognitive and behavioral facets (Schaufeli et al., 2002; Sonnentag et al., 2010).

The study of expert teachers in Shanghai reveals that professional engagement, which is imbedded in their self-recognition and conceptualization, has always been the main working state of those expert teachers. It emerges gradually from every step of their careers, and goes through the whole journey. The trajectories of expert teachers are

not identical, but covered eight similar stepping-stones with role transitions and three basic strategies. All these steps did not always start from the peaks, rather valleys, but sustained by professional engagement expert teachers could still exploit potential advantages of adversity for qualitative leaps. Naturally they stood out among their peers as a result, which in turn inspired them to invest more efforts into professional engagement.

The framework that emerged from the data of this study borrowed ideas but differs somewhat from the two related models. Connecting with Bakker and Demerouti's (2008) work engagement model (see Figure 2.2 in Chapter Literature Review), job resources are equivalent to supportive resources. In teacher profession, supporting opportunities, good environment, and significant persons in teachers' careers should be pursued to increase professional engagement. Their model does not address the importance role of personal resources and additional influences from family and life events. However, teachers differ greatly in both of these areas.

Similarly, the participants of Stough and Palmer's (2003) study are expert teachers although in special education. Their model and the framework of this study have a similar structure. However, the foci are different: one is to examine the instructional decision making of expert special teachers; the other is to explore the evolving process of expert kindergarten teachers from novice to expert. So the two studies have two different central phenomena: teacher concern about student performance versus professional engagement of teachers. Actually, all ten early

childhood expert teachers valued “childhood as priority” throughout their interviews, which is the original strength of their professional engagement.

Need to note, we should consider the social and cultural context of these Chinese expert teachers behind the phenomenon of teachers’ professional engagement. We cannot ignore the influence of Confucianism. In China there is a fine tradition of respecting teachers (Ko & Adamson, 2011; Ramburuth & McCormick, 2001; Tran, 2013), so it helps teachers get a positive identity and sense of accomplishment. What’s more, kindergartens serve “a major socialization function” in China because of missing peer interaction at home, so the “only child” policy and economic development in recent decades make people more willing to invest in education, with high expectations for their children (Lee, 2012; Zhu & Zhang, 2008), which in turn enhances teachers’ social and economic status.

Not only China (including Hong Kong and Taiwan), some other “Confucian” education countries like Japan, Korea, Singapore, demonstrated “nation-state steering and control” over education (Marginson, 2011) or “the centralized educational system” (Tan, 2013), which can be regarded as a double-edged sword. The system might be less flexible, but educational policies issued by the governments from the central to local are highly consistent, so good experiences of models can be popularized to the rest area of country quickly. In Shanghai, 3-6 years old education is a part of the public service system. Most full-time teachers of this age group can share the similar benefits as their primary school counterparts (Hao et al., 2012). This might not be the fact in other areas especially rural villages across large areas of the country (Hu & Roberts, 2013). Early

childhood education and services are quite deficient for migrant children in urban area too (e.g., Luo et. al, 2012; Wang, L., & Holland, T. (2011). The inequity status has drawn attention from scholars and the society.

CHAPTER VII

SUMMARY, CONCLUSIONS AND RECOMENDATIONS

Chapter VII provides an overview of this qualitative research project conducted in Shanghai, China, including its summary and the conclusions that are drawn from those findings. Implications for policy makers, as well as for teacher educators of (both pre-service and in-service) early childhood teachers are given, with related recommendations for further research.

Summary

At its core, this study focuses on ways to ensure quality early childhood education. To obtain such quality, one must also focus on those who facilitate children's early learning experiences—the teachers. In this case, the focus is on China and its kindergarten teachers. Specifically, this study listens to the real voices of ten expert early childhood teachers to explore the meaning of teaching expertise and the dynamic process of evolving from novices to experts.

Prior to 1978 China's communication with other countries was extremely limited. However, the Reform and Open –Up Policy of 1978 changed all of Chinese society. These policies not only changed basic education in China but also had an impact on early childhood reforms (McMullen et al., 2005; Tsang, 2000). As China's business capital and one of its most internationalized cities, Shanghai launched the “1st-Term Curriculum Reform” and the “2nd-Term Curriculum Reform” (OECD, 1020b; Tan, 2012). Within both, great efforts have been made to improve teachers' expertise. Existing literature identifies many specific attributes of teacher expertise, which are

categorized as knowledge, performance, dispositions, ability to role-play in various contexts, and sensitivity to learners' needs (e.g., Borko & Livingston; Johnson & Jackson, 2006; Kennedy, 1987; Ma, 1999; Mazano, 2010; Murray, 2007; Shulman, 1986, 1987; Smith & Strahan, 2004; Tsui, 2009; Turner-Bisset, 2001). Researchers claim that a complex practice such as teaching can be learned (Ball & Forzani, 2009). Two main ways that are adopted most often to develop teacher expertise are training programs and promotion practices (Borko, 2004; Darling-Hammond, 2000; Feiman-Nemser, 2001; Li et al., 2011). Significantly, though, there is a gap about how novices learn to be proficient to a point that warrants the label "experts." To develop large numbers of extremely good teachers, it is necessary to understand how their growth process works. Acquiring such personal and professional knowledge requires in-depth information obtained from those who are intimately familiar with the process—expert teachers themselves. To bridge that gap, this study adopted an expert teacher selection model as the primary framework for sampling (Palmer et al., 2005). Then, a prototype of teaching expertise from a social constructivist perspective was employed for further exploration (Ernest, 1996; Ormrod, 2004; Rosch, 1973, 1978; Sternberg & Horvath, 1995; Vygotsky, 1978).

As noted, this naturalistic inquiry employs several qualitative methods (in-depth interviews, focus groups, and artifact examination) that are rarely used to study teacher development in China early childhood education. I purposely sampled top 10 teachers in Shanghai (Lincoln & Guba, 1985). The data were collected during the time period from December 2011 to August 2012. All interviews were conducted in a natural environment

such as teacher offices and their homes. As required, research integrity was achieved through triangulation, member checking and peer debriefing (Denzin, 1978; Lincoln & Guba, 1985; Mijer et al., 2002). As an instrument of this investigation and as an insider of early childhood education in Shanghai, I have had a wide spectrum of citywide educational experiences for decades. My contextual knowledge--familiarity with them and the environment--helped to make the participants comfortable enough to speak frankly.

Narrative analysis with multiple coding cycles, and within/across-case comparison approaches to data analysis yielded six themes: (1) recognizing self; (2) conceptualizing expert teacher and teaching expertise; (3) attributing professional growth; (4) acquiring expertise; (5) educating other teachers; and (6) additional influences (from family and life events). These themes are consistent and interrelated, with each evoking a central phenomenon, Teacher Professional Engagement (TPE). Defined as a multi-dimensional, active working state, that is, with all potential resources, teachers try their best to improve teaching quality for young children. It is critical to teachers' quality and development as vigorous, dedicated and fulfilled experts (Bakker & Demerouti, 2008; Becker & Riel, 2000; Schaufeli et al., 2002; Sonnentag et al., 2010).

How do teachers, themselves identified as experts, describe expert teachers? Summarily, they submit this description: excellent practitioners who love, understand and interact well with children, who have systematic and dynamic knowledge of distinct domains associated with various age groups; who are critical thinkers and diligent learners with noble morality. Teacher expertise increases gradually with each and every

step of their careers. This study found distinctive career trajectories of expert teachers, which comprised eight (8) key steps along with various developmental strategies. Novice teachers' careers might start from low points, but, sustained by professional engagement, they can exploit supportive resources and make qualitative leaps in teaching expertise.

This study of expert teachers in Shanghai reveals that, for most of their careers, they had been highly engaged in their profession. TPE emerged gradually with every step of their careers, throughout the entire journey. TPE sustained their motivation to teach and to improve their teaching, to seek many opportunities to practice and advance, often despite obstacles, role conflicts, role transitions, and personal challenges. Their trajectories, admittedly, were not identical, but included eight similar stepping-stones with three role transitions, and three basic strategies. Then, due to TPE they stood out among their peers, which in turn inspired them to invest even more effort into their professional engagement.

Conclusions

Consistent evidence from studies exhibits a remarkably high positive correlation between early childhood experiences and later achievements. It is imperative to have teachers who are well versed in early childhood education, so they can foster high quality early experiences. To transform novices to experts, Teacher Professional Engagement is indispensable. TPE is that teachers continually use multiple strategies and all possible resources in order to develop their teaching expertise with the goal of providing the best instruction to their young students. With emotional, cognitive and

behavioral properties, it is an active working state critical for novices to acquire expertise and become vigorous, dedicated and fulfilled expert teachers.

Thus, teacher education should focus on inspiring teachers' professional engagement throughout their careers. This study indicates some relevant conditions and paths for fostering TPE. First, teachers must have positive recognition of themselves (**Theme 1**) and must have clear definitions about their professional aspirations (personal definitions of "expert teacher" or "teaching expertise", **Theme 2**). The similarity and difference between their self-image and aspirations drive them to continuously improve. Teachers must be able to recognize themselves within their characterization of ideal teachers as confident and energetic, imaginative, stable, practical and approachable. In this study, our experts say teachers should view themselves as excellent practitioners: they know how to teach; they love and understand children. They know how best to interact with them. They have mastered their subject matter and they have good teaching skills, which they use appropriately depending on the children's age group. They are critical thinkers and diligent learners who observe and embody good, moral behavior. Participants in our study say these ideas and characteristics must be internalized to be an expert teacher.

Secondly, our experts attribute professional growth as expert teachers to three main causes: (1) personal resources, (2) supportive resources (**Theme 3**) and (3) additional influences from family and life events (**Theme 6**). For example, novice teachers must be able to draw on their personal resources. These include talents, attitudes, motivation, efforts, abilities or skills, professional literacy and health condition.

However, in the course of their careers they are not alone. Supportive resources are provided by many parties--various level administrators (especially kindergarten directors), teacher educators or teacher-researchers in universities or colleges and experienced kindergarten teachers. All are vital mentors or provide essential support for professional growth. While both of these main resources are clearly important, our experts identified additional influences (shown as intervening variables in Figure 6.1) that have the capacity to have significant positive or negative impact on teachers' professional engagement.

Thirdly, professional engagement is a multi-dimensional state. Besides high motivation and positive self-image (emotional dimension) and educational beliefs (cognitive dimension), It also has a behavioral dimension. The most effective and basic behaviors that novice teachers need to demonstrate in order to acquire expertise (**Theme 4**) are: to **learn** (commit to on-going learning); to **think** (reflect critically and positively); and to **practice** (practice deliberately and frequently, such as giving open lessons and competing in teaching contests). Based on the trajectories with eight key steps shared and reported by our participants, novice teachers should try to access many and varied professional opportunities: mentorship, open lessons or competitions, advanced training, research/lesson study, certification or nomination to higher ranks, and assignment to exemplary kindergartens (high-quality with great resources) or what one expert teacher labeled as “rising” kindergartens.

Finally, according to suggestions from our expert participants (**Theme 5**), novice teachers who expect to be experts in the future should have the appropriate attitude and

understanding of the profession, which includes enjoying and being serious about the job, but also recognizing its limitations. For example, teachers must know that they cannot fill all students' educational needs alone. Each child comes to school with his or her individual set of personal resources and issues. The role of the family remains undeniable and important. Those who educate/mentor novice teachers should establish good environments (learning communities) and provide various opportunities with appropriate expectations for new teachers' development. In addition, our experts maintain that novice teachers learn from, and respond better to, demonstration and explanation.

Limitations

Inevitably, this study has limitations. One limitation of this study is about sampling. There was one ideal teacher who committed to be a participant at first, but when I tried to reach her half a year later, she withdrew due to a family accident. Additionally, although there are a few male teachers in Shanghai preschools, none of them were included in my study. All my participants were female teachers.

Another limitation was derived from time issue. The district teacher-researchers had a routine meeting at the conference hall of the Shanghai Teaching and Research Office in the downtown before the fall semester, which offered a good chance to conduct focus groups involving attendees from various districts all over Shanghai. I conducted two focus groups during the break and right after the meeting, so had to limit the time to half an hour for each group, rather than one and a half hour in the original plan.

Last is the possible bias. Both participants and I focused on the bright side of their side, but ignored their dark side with or without intention, which can enrich the image of a person. I touched a little bit about the latter in my interview questions, but except for a few more familiar teachers, most of the participants said little about it.

Implications for Professional Development of Teachers

Broadly speaking, this study was conducted to find out how do we get novice teachers to become great teachers. Our expert teachers in Shanghai help us to find many answers. One school of thought suggests that teachers are “made not born.” That is to say that supportive resources (located outside of teachers themselves) are most important to teacher development. They are generally institutional resources which are invested in teachers’ development, such as professional opportunities, mentoring, much practice achieved by participating open lessons and contests. Another school of thought suggests that teachers are “born not made”. That is to say, the teachers themselves--their own personal resources--are the primary contributor to their professional development. Such resources include personal intrinsic qualities such as motivation, attitude, dispositions or personality and special talents. Experts in this study do not simply choose a side in this debate. Rather, they bring a holistic perspective to the notion of developing teacher expertise. They strongly maintain that all three components (personal resources, supportive resources and additional influences from family and life events), working synergistically, make significant contributions in this area. Our study clearly highlighted the centrality of one important concept, Teacher Professional Engagement. It is the glue that fosters the development of increased teacher expertise.

Therefore what is the path to Shanghai kindergarten teachers' professional engagement and professional development? There is little qualitative research since Shanghai launched the Second-term Preschool Curricula Reform. Our findings provide many implications for professional development of teachers. Implications for various relevant groups are as follow:

For policy makers (multiple levels)

1. Reconsider the concept of support. Support for teachers does not only mean funding; it should be a combination of financial (funding), social (spiritual backing), and administrative (policies) support.
2. Provide the following supportive resources which are critical to attract and retain teachers:
 - Selection of supportive, professional and fair directors;
 - Early assistance for novice teachers;
 - Opportunities for teachers at different levels, such as open lessons, competitions, advanced training and nomination to higher ranks; and
 - Career ladder and promotion possibilities for expert teachers: special-rank teacher (including teacher-researchers), special-rank director, and distinguished teacher studio director.
3. Adopt effective systems relevant to teachers' professional development, such as:
 - Mentoring program;
 - The basic education lesson study system;
 - Professional title assessment and promotion system;

- Ranking and grading system for kindergartens; and
- The system of teacher-researchers, especially full-time teacher-researchers [专职教研员]

For teacher educators (of pre-service and in-service teachers)

1. Inspire teachers to have a strong sense of “self” including:
 - Positive self-image and aspiration (“know yourselves”, “always strive to do well”);
 - Disposition (positive attitude and energetic, approachable, creative, imaginative personality); and
 - Balance between work and life (recognize the impact of additional influences from family and life events).
2. Develop and craft pedagogical practices through “the to-do list” of teachers,
 - Interact with real children to understand them in depth;
 - Acquire experiences in practice through tutoring, virtual teaching, internship, trial teaching, and teaching in factual classroom;
 - Intensively observe of expert teachers or other peers;
 - Frequently give open class or classroom to peers for instant feedback;
 - Reflect on teaching (advantages and disadvantages) as a habit;
 - Record and write about children and teaching on daily basis (“teaching journal” involving specific cases of teaching and children);
 - Initiate research projects on teaching; and
 - Read often, in various subjects (not only books on early childhood education).

3. Create learning communities involving teachers at various level
 - Coordinate among the administrative departments of education, schools and teachers to form a good setting for teachers' professional development;
 - Search for and cultivate promising novices within their first 3-5 years;
 - Provide mentors to help experienced teachers advance in their careers. These mentors include persons who excel in theoretical knowledge and persons who excel in teaching; and
 - Set up lesson study teams at different levels and conduct group discussion (seminars or workshops) regularly.

Recommendation for Further Research

Scholars can extend the range and depth of this study in numerous ways. The following are examples of possible directions:

1. Focus on a small group (3-5) of expert participants in-depth. Observe and analyze their actual class instruction, video taped model lessons, lesson plans, personal reflection and comments from invited pedagogical specialist;
2. Involve male expert teachers in the study;
3. Expand the sample to make career growth curve based on more participants' data;
4. Conduct a big sample survey (based on the results of this study) on teachers' perceptions, expectations and concerns regarding their professional development;
5. Locate and interview other stakeholders, such as educational administrators who are relevant to the professional development of early childhood teachers at different levels (municipal, district or school);

6. Study the impact of educational policies on professional development of early childhood teachers, especially the ones regarding training and promotion;
7. Explore Teacher Professional Engagement in depth including theory frame and practical strategies for increasing engagement of early childhood teachers;
8. Conduct comparative studies on the state of professional engagement among early childhood teachers in other countries, such as the United States, England, and Australia.

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APPENDIX A

INDIVIDUAL INTERVIEW QUESTIONS FOR EXPERT TEACHERS

[Address research question 1]

1. Do you think of yourself as an expert teacher?
2. What are your teaching strengths as an expert teacher?
3. What is teaching expertise/quality? Please give some examples to explain it.
4. About expert teachers, can you give a metaphor? Please explain it.

[Address research question 2]

5. What factors are crucial for you to become an expert teacher?
6. What characteristics of social context contribute to your career success?
7. Are there any significant persons who contribute to your career success?
8. If there are some significant persons in your career, what contribution have they made for you?

[Address research question 3]

9. How can you gain teaching expertise?
10. Can you describe those turning points in your life for becoming an expert teacher?
11. Do you think teaching expertise can be learned from others? What are your reasons?
12. What are your suggestions for those novice teachers who expect to be an expert teacher like you?
13. Can you give a “must-do” list of gaining expertise? What is it?
14. Is there anything you would not do if you had a choice at that time? Please elaborate.

15. What do you think of novice teachers' teaching in a simulated setting; that is, teaching student avatars in virtual settings to gain teaching expertise?

More questions for further expert teacher interview (to address research question 2 & 3)

- Why did you choose preschool teacher as your career?
- Do you have a successful teaching example to share? Why is it successful?
- Do you have a failed teaching example to share? What was the process? How can you grow from it?
- Can you describe a typical routine as a teacher?
- During the process of becoming an expert teacher, what do you do most often every day?
- When you attended the teaching competition of youth and middle-aged teachers, how long did you prepare for it?
- How many times did you modify your teaching plan? What did you change?
- Who provided lots of help to you? What kind of help did they provide?
- Can you share the part of the competition with which you are most satisfied and most disappointed?
- When and what were the highs and lows during your career? How did you advance in your career? How did you get through the difficulties? What was the effect on your later development?

- Suppose you are standing on a podium, which three sentences do you want to speak first? Who are people to whom you are most grateful?

(Questions for visual analysis)

- (to P) Please explain an excerpt of a teaching video and explain the motivation behind your teaching behaviors.
- (to FD & LY) Please provide a photo or picture related to your teaching, and tell the story behind it.
- (to FD & LY) Please choose an excerpt from your published book and discuss it.
- Can you divide your developmental process as a teacher, and discuss your feelings and comments at each.
- Are there any markers for each phrase, such as pictures, videos, articles, letters, artifacts, and awards? Please explain the reasons for your choices.

APPENDIX B

FOCUS GROUP QUESTIONS FOR TEACHER-RESEARCHERS

(Opening questions)

1. Introduce yourselves: working experiences, research focuses.

(Introductory questions)

(Address research question 1)

2. As a pedagogical researcher, you must have contact with some expert teachers.
What is the first thing that comes to mind when you hear “expert teachers”?

(Transition questions)

3. Expert teachers have teaching expertise. What is teaching expertise? Please give some examples to explain it.

(Key questions)

4. What are necessary characteristics an expert teacher should have?
5. Please describe the teaching expertise of an expert teacher with whom you are familiar.
6. What characteristics of a novice teacher help you determine that she has the potential to be an expert teacher later?
7. About expert teachers, can you give a metaphor? What are your reasons?

(Address research question 2)

8. What factors are crucial for a novice to become an expert teacher?
9. What characteristics of the social context contribute to expert teachers’ success?

(Address research question 3)

10. How can a teacher become an expert teacher? Can you give an example?
11. Do you think teaching expertise can be copied? What are your reasons?

12. Do you think it will be helpful for novice teachers to teach in Second Life (simulation teaching, teach student avatars in the virtual settings)? What are your reasons?

(Ending questions)

13. What is your suggestion for those novice teachers who expect to be an expert teacher like you have mentioned?

APPENDIX C

EXAMPLES OF CODING SCHEMES

Examples of coding schemes

Code list for transcript #13 (of Teacher GA)

Table 1 Codes and Explanations

| Codes | Description / definition | Inclusion or exclusion criteria | Examples |
|--|--|--|--|
| Recognizing self | How interviewees recognize themselves on their own personality, values, etc. | Includes self-recognized personality, values, well-being, and professional emotion, decision, recognition, specialty | “I like to work hard making everything clear by myself, which is different from my [fragile] appearance” “I think I am a responsible teacher, as well as a responsible mentor ” |
| Expert teacher | How to understand the concept of “expert teacher” | Includes definition and description (or metaphor) of “expert teacher” | “I feel expert teachers should have certain technical ability, ...[which should be] relatively advanced and scientific, like what others have said”; “She can give you constructive comments immediately” |
| Teaching expertise | How to understand the concept of “teaching expertise” | Includes definition and description of expert teaching behaviors | “They should have professional knowledge, which is wide enough ” “First they should have experienced teaching skills” “Expert teachers must have their own teaching style” |
| Attributing professional growth - personal resources | The personal resources that can be attributed to professional growth | Includes personality, attitude, effort, ability, skills, professionalism | “It might be born..., they have personal understanding or natural wisdom, but I believe it’s not enough” “Internal factors, the first one I think is interest, which is the most important” “...professional literacy should be included” |
| Attributing professional growth – supportive resources (environment) | The supportive resources that can be attributed to professional growth | Includes mentors, teams, teaching observations, projects or programs, opportunities like open lessons, etc. | “All successes are attributed to my mentor”; “I have 3 good mentors: One got me through the door; another let me know what is professional is; and the third inspired me to do more things” “The most important team is the most basic one that she stays with every day [the kindergarten team]” “I luckily, entered a center-based group after I got the first prize in a teaching competition..., it gave me a lot to promote my professional skills” “The most important is for there to be a proper self-developing channel ” |
| Growing professionally through key steps | Key steps in one’s career | Includes entering, burnishing, and role transition | “The first turning point was my transition from elementary school to kindergarten” “The second, now I retrieved, constant open lessons, only open lessons, kept on practice in teaching” “Then the 3 rd one is now, I become a manager from a teacher, viewing teaching differently” |
| Acquiring | Strategies | E.g., includes | “First of all is practice. I practiced after thinking. |

| | | | |
|-------------------------|---|--|---|
| expertise | employed in obtaining teaching expertise | practice and reflection, being mentored and mentoring others | Reflection after practice is more important” “I give too. I am giving as I am a mentor too, guiding many teachers |
| Advising other teachers | How to train a teacher, especially a novice teacher | Includes prerequisites, strategies and methods | “(For interns, my primary concern is how can they interact with kids, if they can accept kids, this is the most important” “When I confirm you like kids and teaching, I will discuss teaching with you, so you can accept easily” “Now whoever enters as a new teacher, we will give him platform to show himself” “For professional teachers, it is team building to promote personal growth ” |

Table 2 Coding Scheme of Teacher GA

| Themes (6) | Categories & sub-categories (26+11) | Raw data key words | Illustrative quotations |
|---|---|--|--|
| Recognizing oneself | Teaching expert | Cannot claim to be | |
| | Personality -diligent -responsible | Work hard Be responsible | “I like to work hard making everything clear by myself, which is different from my appearance” “I think I am a responsible teacher, as well as a responsible mentor ” |
| | Values | Fulfilling life, Acknowledgement | “I prefer a fulfilling and busy life, so I can get satisfaction by showing my importance in a team” |
| | Professional emotion | Fortunate | “I feel I am very lucky, because I can avoid repeating myself” |
| | | Enjoy | “I like this career” |
| | Professional decision | Convert from elementary school | “I prefer early childhood kids...3 years later I had the urge to come back to preschool education” |
| | Professional recognition | Gap Very high-end, With technical justification Labeled | “There’s gap between the label and me” “Expert teachers should be very well-rounded” “I believe he must have certain technical justification” “He should have a label about it” |
| Teaching specialty | Early childhood music education | “My teaching specialty, I think, is my favorite early childhood music education” | |
| Conceptualizing the expert teacher and teaching expertise | Expert teacher -ordinary -advanced | Advanced nature Ordinary nature | “I feel expert teachers should have certain expertise, ...relatively advanced and scientific, like others said” |
| | (Actual exemplary) traits | Critical assessment | “They can give you a critical assessment and evaluation right away” |
| | Teaching expertise -knowledge -skills -style | Professional knowledge Teaching skills Teaching style | “They should have professional knowledge, which is broad enough ” “First he should have certain teaching skills” “An expert teacher must have his own teaching style” “Different from middle school, we emphasize interaction [between teachers and children] very much” “Lesson designing must consider age characteristics, the current level and the potential at this age in music area” |
| Attributing professional growth- Internal factors | Personalities | Natural talent Professional motion/interests | “It might be inherent, he has own understanding, natural talents, but I believe it’s not enough” “I quite like the area of music” “Internal factors, first I think is interests, which is the most important” |
| | Efforts | Personal efforts | “Besides that an expert teacher works hard by himself...” |

| | | | |
|--|----------------------------------|--|---|
| | Professionalism | Professional literacy | "...professional literacy should be included" |
| Attributing professional growth - External factors (environment) | Mentors /Important persons | Teaching mentoring SLL (director)-teaching skills HQ (teacher-researcher)-preschool education FJM (special-rank teacher)-work ethic & management capacity | "All successes are derived from my mentor" "I have 3 good mentors. One got me through the door, another let me know what was professionalism, and the third inspired me to do more things" "I observe their classes... Teacher S was my director at that time. Each time I did a trial teaching, she instructed me step by step" ... |
| | Team | Team (in kindergarten) | "The most important team is the most basic one, with which a teacher works every day (kindergarten)" |
| | Observation | Teaching observation | "I saw Teacher W's teaching..., felt very satisfied" |
| | Projects /program | Center-based group Expertise-training project | "I luckily entered a center-based group after I got the first prize in a teaching competition..., this group did a lot to promote my professional skills" "I was enrolled in the 2 nd term expert-training project, there I met my 3 rd mentor... from her I learnt how to make myself more devoted " |
| | Opportunities, like open lessons | Giving open lessons | "She (the mentor) asked me to give open lessons" "The most important is a proper self-developing channel " |
| Growing professionally through major [turning points] | Entering | Career change | "The first turning point is the transition from elementary school to kindergarten" |
| | Burnishing (or improving) | Open lessons | "The second, now I retrieved, constant open lessons, only open lessons, kept on practice in teaching" |
| | Role transition | From teacher to manager | "Then the 3 rd one is now, I become a manager from a teacher, viewing teaching differently" |
| Acquiring expertise [ways] | Source | Natural talents and wisdom are possible, but absolutely not enough: proper environment, people, (most important) fittest developing channel | "There might be natural talents..., but it is not enough I believe... There must be some appropriate environments and people. And most importantly, there is the fittest developing channel, because these environments and people affect you too, so the channel changes accordingly. I believe environments can change a person, the same as teams" |
| | Practice and | Practice | "First of all is practice. I practiced after thinking. |

| | | | |
|-------------------------|--|--|---|
| | reflection | Reflection | Reflection after practice is more important” |
| | Being mentored and mentoring | Giving Gaining | “Gaining experience is to stand on the shoulders of giants, which is what those giants, mentors have given me” “I give too. I am giving as I am a mentor too, guiding many teachers” |
| Advising other teachers | Prerequisite | Like kids first (Interact with kids, accept kids) Then discuss teaching | “(For interns, my biggest concern is how can they interact with kids, if they can accept kids, this is the most important” “Don’t let me see you at a first glance when I enter your classroom” “When I confirm you like kids and teaching, I will discuss teaching with you, so you can accept easily” |
| | Approaches -skill Competition - teaching demonstration | Bow Party Show her lessons | “We often have some parties, like Bow Party...,actually we let teachers have professional skill competitions” “I first show her my lessons, she designs, and gives lessons, and reflects on her lessons” |
| | Training ways -Giving platform -building team | Platform Team building | “Now whoever enters as a new teacher, we will give him opportunities to showcase his talents” “For professional Educating teachers, actually it is team building to promote personal growth ” |

APPENDIX D

EXAMPLES OF CATEGORIZED DATA ACROSS 10 EXPERT TEACHERS

Table 1 Original Coding Data of Recognizing Self

| # | Name | Expert (Yes or no) | Personality | Self-affirmation /self-position | Value | Professional emotion /decision | Teaching specialty |
|---|------|---|---|--|--|--|--|
| 1 | FD | Should be | Confident Devoted Attentive Imaginative Balanced Introverted Positive Serious (about work) Determined | Advantage over others in innovate teaching style Ordinary person Be good at reflection /work for kids Teaching study | Accept fates, Current happiness, Talents from affluent environment, Happy, positive emotion in preschools | (K teacher) Fun, but might not the best fit /parents' idea, didn't want to be at first | Respect learning characteristics of kids, Take advantage of teaching moments, Fulfill whole individuals Pay attention to kids' feelings |
| 2 | SS | Absolutely not | Good personality | Almost no failure-positive research atmosphere /(Self-position) teaching | Knowing kids well | Interesting, suitable Enjoy /Be recommended by others and didn't want to go on study for high school | Enjoy & devoted long time in music |
| 3 | YL | Don't like the word, so don't think so. | | Normal or good teacher Did well in reflecting & adjusting Reflecting-a way of thinking | Kids before teachers | /Be recommended & glad to be | (From project) play, "learn by doing" science edu (From ability) observe, interact, respond, design, analyze, evaluate, especially design & respond |
| 4 | GH | No | Do best High responsibility-high intense Practical | Good teacher, classroom teacher Need more efforts on writing Not good for anything else except for childcare | Seek out the good in people Observe kids' development Biggest gain: no injury accidents Accept fates | Lucky (mentored by X) Hard (job) Happy with kids Kids are funny /Parents' idea, Don't want to be a kindergarten teacher At first (Kids are troublesome) Don't want to | Preschool education: teaching, interaction, mastery of age characteristics Most important, Like math ed., kids like me, parents |

| | | | | | | | |
|----|--------|--|--|--|--|--|--|
| | | | | | | give math lessons firstly-too much efforts | like me |
| 5 | P | Scared of the name | | Professional teacher or just teacher /classroom teacher | | Lucky, /parents' idea | Acknowledge & accept kids-observe, satisfy |
| 6 | G A | Cannot claim to be | Work hard Be responsible | | Fulfilling life, Acknowledgement | Lucky Enjoy / Convert from elementary school | Early childhood music education |
| 7 | M A | Might not be-theoretical foundation | | Good teacher | Emotional, social development of kids | Love | Mastery of kids age characteristics , appropriate teaching methods |
| 8 | S | I am not there yet No (Compare with other teache) | Low-quality work is unacceptable | | | /(Reasons): 1.fullfilled feeling from childhood experiences, 2.low requirement in math & science, 3.encouragement from class tutor of middle school | Teaching style Pursue the details in math activities |
| 9 | F F | No, might be in the future | Ambitious Work hard Diligent Take things seriously High responsibility | Good reading habit Enjoy multiple roles Child of my parent Wife of my husband Mom of my daughter Kindergarten teacher | Love kids, love others, love is great, (Don't want to hurt others, Watch what you say or do), Sharing, Kids: studios, devoted, creative; Push our limits | Enjoy the process Happy (communication with kids) Proud of mentees / Want to be a kindergarten teacher | \ |
| 10 | D H | I am good at teaching | Want things done well | Be good at teaching Have many 1 st place achievements | | Happy & willingly to work for more hours | Be good at teaching, language teaching, Know kids well |

Table 2 Categorized Data of Recognizing Self

| Categories | Codes | Teachers | Frequency | Total |
|----------------------------|---|-----------------------|-----------|---------------|
| Personality | Good personality | YL | 1 | 14 |
| | Responsible | GA, GH, FF | 3 | |
| | Work hard/diligent | GA, FF | 2 | |
| | Do best/well done/ serious (work), devoted, attentive | DH, GH, FD, FF | 4 | |
| | Ambitious/Inferiority unacceptable/determined | FF, S, FD | 3 | |
| | Others: practical/approachable, Confident, Imaginative, balanced/stable, introverted, Positive, | GH, FD | 2 | |
| Self-affirmation /position | Ordinary/normal | FD, YL | 2 | 15 |
| | Skills: good at reflecting, Good reading habit | FD, YL, FF | 3 | |
| | Good teacher/ Advantage in class/professional teacher | FD, YL, GH, P, AD, DH | 6 | |
| | Classroom teacher | SS, GH, P, FF | 4 | |
| Value | Knowing kids/kids before teachers/love (kids, others) | SS, YL, FF | 3 | 12(13) |
| | Kids: Happiness/emotional & social/studious, devoted, creative; Safe | FD, MA, FF(2), GH | 4(5) | |
| | Interrelationship: seek out the good in people, sharing | GH, FF | 2 | |
| | Fulfilling life, Acknowledgement/push limits | GA, FF | 2 | |
| | Accept fates | FD, GH | 1 | |
| Professional emotion | Lucky | GC, P, GA | 3 | 13 |
| | Funny/interesting/happy | FD, GH, SS, FF, DH | 5 | |
| | Like/love/enjoy | SS, GA, MA, FF | 4 | |
| | Hard | GH | 1 | |
| Professional decision | Parents' idea (but didn't like first) | FD(no), GH(no, *), P | 3 | 7 |
| | Recommended by class tutor | SS, YL | 2 | |
| | Personal preference (with approval of parents or class tutor) | FF(*), S(*) | 2 | |
| TOTAL | | | | 61(62) |

Note: * indicates when they made the decision, performance in middle school were considered at the same time. For example, their achievements were not so good to enter an ideal college, or they felt like high school was too exhausted to study.

Table 3 Sub-Categorized Data of Teaching Specialty

| Sub-categories | Codes | Teachers | Frequency | Total |
|-------------------|--------------------------------|----------|-----------|-----------|
| Children-centered | Respect kids (feeling) | FD | 1 | 5 |
| | Mastery of age characteristics | GH, AM | 2 | |
| | Acknowledge & accept kids | P | 1 | |
| | Know kids | DH | 1 | |
| Domain | Music ed. | SS, GA | 2 | 6 |
| | Play, science ed. | YL | 1 | |
| | Math ed. | GH, S | 2 | |
| | Language | DH | 1 | |
| Teaching | Ability: design, respond, etc. | YL, L | 2 | 5 |
| | Teaching, interaction | GH | 1 | |
| | Teaching methods | AM | 1 | |
| | Teaching style (details) | S | 1 | |
| Others | Popular (among kids & parents) | GH | 1 | 2 |
| | Preschool education | GH | 1 | |
| TOTAL | | | | 18 |

Table 4 Original Coding Data of Conceptualizing the Expert Teacher and Teaching Expertise

| # | Name | Definition | Characteristics/traits | Metaphor |
|---|------|---|--|---|
| 1 | FD | Can deal with change and demonstrated in practice | Excel in teaching Improve teaching skills constantly Understand kids [Traits] Calm/peaceful Attentive Focused Confident | Service tailored for individuals |
| 2 | SS | Reflecting ability in practice Actively question-discuss-adjust-implement | | (no response) |
| 3 | YL | 1.Accept or understand kids: equal partner 2.Observe & analyze: what & how to play, what happen, how to solve, what way, notice the best & worst. 3.Design & interact: interesting process, valuable content, focused experiences 4.Reflect & adjust: matter-of-factly, effectively reflect, reflect all you have done, with focuses (aligning with the stages) | | Yunlong Liu (actor, can write, direct, act), a manager or leader or head of a family, actually a designer or architect But must hit with audience (kids & parents) |
| 4 | GH | (Expert) Be good at both: theory & practice (Expertise) 1.Professional skills: subject-matter knowledge of age group 2.Study/understand kids 3.Teaching with wisdom/interactive ability 4.Capture kids' problems (Sensitive: connect with area experiences) | | (shift the subject) |
| 5 | P | Knowledge of the field & kids | 1.have subject matter knowledge associated with age groups 2.better methods to let kids accept 3.better understand kids' inner thinking [Traits] Kids approach, acknowledge & like me Have certain teaching methods, like scenario reading, response teaching | Doctor-serve for people, give diagnosis & measures |

| | | | | |
|----|----|--|---|--|
| 6 | GA | (Expert) Advanced nature Ordinary nature (Expertise) Professional knowledge Teaching skills Teaching style | [Traits] Assess sharply | (Two sides) |
| 7 | MA | 1.Teaching ideas or values (explicit, internalized): integrate personality & emotion with cognition development, emotional social development more important 2.Understand kids' thoughts (internal needs) through behaviors 3.Ability of interacting with kids through good teaching (teach methods & interests): good response, language organization & skill improvement | [Traits] Sensitive | Model: teacher LXW, YY: educational plan (systematical, wise, innovative) and practice Express without fear, give real push to education Have rich experiences |
| 8 | S | 1.Content knowledge 2.Educational skills 3.Understanding kids | | Sunshine: Smile at natural mistakes Care for those around you Share things around you |
| 9 | FF | (expert) 1.High morality, 2.Professional specialty, 3.Summarize & transfer to others, 4. Affects people around him (expertise)1.Learning skills (read, think), 2.Express ability, sensitivity (to kids, parents, communication), 3.General ability (information absorbing ability, ability to make teaching aids, reading ability), love | | Flower fairy: Like sunshine, give seeds, experience a lot, continue learning, not perfect, love others |
| 10 | DH | Strategies of approaching kids Interactive ability Knowledge of kids Reflecting & summarizing ability Information analyzing ability Responsibility | Win kids affection, master age characteristics of kids and instructional strategies | Excellent general practitioner |

Note: []-subcategory

Table 5 Sub-Categorized Data of Conceptualizing the Expert Teacher and Teaching Expertise

| Sub-categories | Codes | Teachers | Frequency | Total |
|--------------------------------------|---|---|-----------|-----------|
| Excelling in teaching | Good teaching | FD (Deal with change, Demonstrated in practice) MA | 2 | 10 |
| | Teaching skill, style Educational skills | GA S | 2 | |
| | Interact with kids | YL, GH, MA, P (Better methods kids can accept), DH (approach kids) | 5 | |
| | General ability | FF (expressing, making materials, reading) | 1 | |
| Understanding kids/knowledge of kids | Understanding/knowing | FD, YL, GH, S, DH | 5 | 7 |
| | Inner thinking, needs | P, MA | 2 | |
| Thinking | Reflecting | SS, YL, DH | 3 | 6 |
| | Summarizing | DH, FF | 2 | |
| | Analyzing | YL | 1 | |
| Content knowledge | Content knowledge | GH (of age group), P, S(domain knowledge) | 3 | 4 |
| | Professional specialty | FF | 1 | |
| Two sides | Both theory & practice | GH, | 1 | 2 |
| | Advanced & ordinary nature | GA | 1 | |
| Morality | Noble morality | FF | 1 | 2 |
| | Responsibility | DH | 1 | |
| Others | Ideas, values | MA | 1 | 5 |
| | (Influence) affecting people around | FF | 1 | |
| | Sensitivity | FF, AM, GH (kids' problem) | 3 | |
| | Learning skills | FF | 1 | |
| TOTAL | | | | 35 |

Table 6 Original Coding Data of Attributing Professional Growth

| # | Name | Personal resources | Supportive resources |
|---|------|--|---|
| 1 | FD | Learning ability (learn from) books colleagues in practice own work experience kids in practice Reflecting ability and habit Self-confidence | Significant persons (Mentors) M1 (Instructor in training college) M2 (professor in university) M3 (senior high school teacher) M4 (Leader in education bureau) M5 (Director in kindergarten) Platforms (opportunities) Advanced research class (Cross-industry) Implications from life No mentor as a novice -independence |
| | SS | [Attitude] Serious Lucky/grateful Diligent, hardworking Persistence Love (devoted to do) [Practice] Practice Constant reflection | [Opportunities] Open lessons [Significant persons] Good mentors: ZJ (teaching and research group leader): strict, observe LHY (special-rank teacher): experienced, ZH (ex-director, special-rank teacher): observe, analyze (good, bad, strategies) Kindergarten team: discussion atmosphere -positive tradition & leadership (value everyone's effort) |
| 3 | YL | [General] Attitude (attitude of learning), ability [Attitude] Persistence, seriousness, tenacity Try best for everything / approach each step deliberately | [Settings] Curriculum/main direction Team: leaders, directors, elder teachers (give step by step instructions p.12), experts (feedback)-integrity Good/exemplary kindergarten-vision & passion of career Major does matter [Significant persons] HAH (university professor)-theoretical instruction (play focus, way of thinking, professional spirit) LM (university professor)-lead to play study WJJ, HQ, ZHF (teacher-researchers)-understand in depth (educator of their kids) 3 Directors 2 elder co-teachers CSJ (district teacher-researcher)-stay in classroom, discuss, reflect & practice |
| 4 | GH | [General] 1. Diligent 2. Adventurous [Attitude] Don't commit the same mistakes again Be brave Be serious, act according to conscience | [Settings] Good school-Exemplary kindergarten Good mentors [Significant persons] XML (exceptional-rank teacher)-help get started ZXH (director)-oriented from practice to thinking FBL (Preschool education section chief)-invested, dedicated |

| | | | |
|---|----|---|---|
| | | <p>Give lots of open lessons, which is as it should be</p> <p>Have pressure-amount to something</p> <p>Face unfairness-do it</p> <p>Try to do more</p> <p>Have needs</p> | |
| 5 | P | <p>Conscientiousness</p> <p>Talent (voice projection, reflective)</p> <p>Ambition</p> <p>Being a frontline teacher/practice</p> | <p>[Settings]</p> <p>Rising kindergartens</p> <p>Display platform: competition, open lessons</p> <p>[Significant persons]</p> <p>LWY (special-rank teacher): high expectation</p> <p>Professional (content knowledge, methods, understanding kids)</p> <p>Director G: attitude (generous, bold), administrative methods</p> |
| 6 | GA | <p>[Personality]</p> <p>Born understanding</p> <p>Professional Motivation/interests</p> <p>[Efforts]</p> <p>Personal efforts</p> <p>[Professionalism]</p> <p>Professional literacy</p> | <p>[Mentors/Significant persons]</p> <p>Teaching mentoring</p> <p>SLL (director)-teaching skills</p> <p>HQ (teacher-researcher)-preschool education</p> <p>FJM (special-rank teacher)-work ethic & management capacity</p> <p>[Team]</p> <p>Team (kindergarten)</p> <p>[Observation]</p> <p>Teaching observation</p> <p>[Projects/program]</p> <p>Center-based group</p> <p>Expertise-training project</p> <p>[Opportunities]</p> <p>Giving open lessons</p> |
| 7 | MA | <p>Read, sense- (unique) temperament, literacy, (own) thoughts-thinking of running schools, teaching style</p> <p>Independent ideas, passion-aura</p> <p>Language ability</p> <p>Interpersonal skills</p> | <p>[Settings]</p> <p>Led by experts (mentors)</p> <p>Discuss with colleagues</p> <p>Study from outside</p> <p>[Significant persons]</p> <p>-YLD (prior director)</p> <p>-TX (preschool section chief)</p> <p>-YXG (college president)</p> |
| 8 | S | <p>[Attitude]</p> <p>Adjust yourself and move forward if you hit a plateau</p> <p>Studious, seriously realistic, cooperative</p> | <p>[Opportunities]</p> <p>Professional title assessment</p> <p>(Training) research backbone class, district famous teacher reserve class, municipal famous principal and teacher project</p> <p>Two teaching competitions</p> <p>[Significant persons]</p> <p>1. Municipal researcher HJJ-rigorousness in research</p> <p>2. District teacher-researcher LIW-logicality in thinking</p> <p>3. Excellent colleague in kindergarten</p> <p>-an experienced teacher , mentors in theory(JY) & practice(HQ) (mentioned)</p> |

| | | | |
|--------|----|--|--|
| 9 | FF | <p>[Attitude] Always learning Vacation: not rest, work in kindergarten Proud of the kindergarten & the team Persistent, studious, [Physical condition] Energetic [Comprehensive quality] high</p> | <p>[Significant persons] Directors PN kindergarten: mentors, director, team Parents: good relationship [Family] Very important Parents approve anything, but strict Adopted sibling Dad: prepare conditions in every way Husband: never quarrel (contract) Daughter: like to be in kindergarten & want to be a teacher later [Team] [Studying further]</p> |
| 1 0 | DH | <p>[Attitude] Efforts Passion Calm & frank To address frustration of incapability: Self-position Adjust mind sets Good attitude Responsible Happy to work extra hours To award: To address failure: use your head Proud of kids & the team [Ability] Independent thinking Inherent ability relating to kids Storytelling ability Knowing kids, age characteristics [Skills] Applying Guidance Theory implementation Classroom management Classroom preparation Parent involvement Collecting of parental experiences & kids' remarks Selection of teaching materials English skills</p> | <p>[Opportunities] Speech competition Teaching competition Routine work Learning platform: 1st term backbone teachers training program -degree programs -cadre teachers training: right time for me Independent research-based project [Significant persons] Administrators Mentors (professors PJ, director FJM, municipal teacher-researcher HQ, teacher educator/professor HZ) Team (colleague, childcare workers) Media (age06 net, Star Teacher Column of a journal)</p> |

Note: []-subcategory

Table 7 Sub-Categorized Data of Personal Resources for Professional Growth with Frequencies

| Sub-categories | Codes | Teachers | Frequency | Total |
|-----------------|--|------------|-----------|-------|
| Nature | Talent | P | 1 | 4 |
| | Unique temperament | AM | 1 | |
| | Born understanding | GA | 1 | |
| | Born ability approaching kids | DH | 1 | |
| Attitude | Self-confident | FD | 1 | 35 |
| | Passionate | MA, DH | 2 | |
| | General | DH | 1 | |
| | Enterprising | S, DH | 2 | |
| | Serious | SS, YL, GH | 3 | |
| | Devoted | SS, GH, DH | 3 | |
| | Conscientious | P | 1 | |
| | Responsible | DH | 1 | |
| | Diligent | SS, GH, FF | 3 | |
| | Studious | YL, S, FF | 3 | |
| | Persistent | SS, YL, FF | 3 | |
| | Realistic | YL, S | 2 | |
| | Reflexive | DH, GH | 2 | |
| | Flexible | S, DH | 2 | |
| | Brave | GH | 1 | |
| | Cooperative | S | 1 | |
| | Proud (of kindergarten, team, kids) | FF, DH | 2 | |
| Calm & frank | DH | 1 | | |
| Lucky | SS | 1 | | |
| Motivation | Needs | GH | 1 | 2 |
| | Professional motion/interests | GA | 1 | |
| Ability /skills | General | YL | 1 | 9 |
| | Learning | FD | 1 | |
| | Reflecting | FD | 1 | |
| | In language, storytelling, English | MA, DH | 2 | |
| | Independent thinking | DH | 1 | |
| | Affinity | MA | 1 | |
| | Knowing kids, age characteristics | DH | 1 | |
| | Applying guidance, theory implementing (classroom managing, setting up environment, parent involving, recording of parent experiences & kid's speech, choose teaching materials) | DH | 1 | |
| Efforts | General | P, GA, DH | 3 | 11 |
| | Practice | SS, P | 2 | |
| | Open lessons | GH | 1 | |
| | Reflect | SS | 1 | |
| | Try best | YL | 1 | |
| | Do more | GH | 1 | |
| | Think (use your head) | DH | 1 | |
| | Don't recommit the same mistake | GH | 1 | |

| | | | | |
|----------------------|---------------------------------|--------|---|----|
| Professional quality | Literacy/ Comprehensive quality | GA, FF | 2 | 4 |
| | Thoughts | MA | 1 | |
| | Teaching style | MA | 1 | |
| Health | Energetic | FF | 1 | 1 |
| TOTAL | | | | 66 |

Table 8 Sub-Categorized Data of Supportive Resources for Professional Growth

| Sub-categories | Codes | Teachers | Frequency | Total |
|------------------------------------|---|------------------------|-----------|-----------|
| Team | Kindergarten | SS, GA, S, FF, DH | 5 | 6 |
| | [Broader] administrators, directors, elder teachers, experts | YL | 1 | |
| Environment | Curriculum | YL | 1 | 6 |
| | Good/rising kindergarten | YL, GH, P (Rising), FF | 4 | |
| | [Research atmosphere] Led by experts Discuss with colleagues Study from outside | MA | 1 | |
| Opportunities/ Platforms | Advanced training | FD, S, DH | 3 | 14 |
| | Open lessons | FD, SS, GH, GA | 4 | |
| | Competition | GC, S, DH | 3 | |
| | Good mentors | SS, GH, GA, MA | 4 | |
| Projects/programs (research based) | Center-based group, Expertise-training project; Shanghai famous principal and teacher project | GA, S, DH | 3 | 3 |
| Others | Routine work | DH | 1 | 6 |
| | Observation | GA | 1 | |
| | Educating teachers | DH | 1 | |
| | Perceptions from life | FD | 1 | |
| | Media (Net, journal) | DH | 1 | |
| | Family (Parents, husband, kid) | FF | 1 | |
| TOTAL | | | | 35 |

Table 9 Sub-Categorized Data of Significant Persons for Professional Growth

| Sub-categories | Codes | Teachers | Frequency | Total |
|--------------------------------|---|---------------------------------------|------------------|---------------|
| Teacher educator or researcher | Teacher-researcher | YL, GA (2), S, DH | 4(5) | 10(11) |
| | Professor in university | FD, YL (2), MJ, DH(2) | 4(6) | |
| | Instructor in training college | FD | 1 | |
| | Education science researcher | S | 1 | |
| Administrators | Director in kindergarten | FD, SS, YL (3), GH, P, GA, MA, FF, DH | 9(11) | 13(16) |
| | Administrators in education bureau | FD, GH, MA (2), DH | 4(5) | |
| Qualified experienced teachers | Exceptional-rank teacher | FD (high school), SS, GH, P, GA | 5 | 9(10) |
| | Elder/experienced teacher or childcare worker | YL (2), S, DH | 3(4) | |
| | Teaching and research group leader | SS | 1 | |
| TOTAL | | | | 32(39) |

Note: Frequency with brackets means different significant persons mentioned in the same codes were all counted

Table 10 Original Coding Data of Acquiring Expertise

| # | Name | Stepping-stones/ key events | Strategies/pathways | Prerequisites |
|---|------|---|---|---|
| 1 | FD | 1.Death of a child 2.Transfer to exemplary kindergarten 3.Attend advanced research class 4.Special-rank teacher nomination | Learn from mentors Way of thinking Love of literature Prepare impromptu speech carefully Praise from others and a to be confident | Way of thinking Attitude |
| 2 | SS | 1.First open lesson-confidence 2.Apply the title-independent thinking 3.Research project 4.Role transition: to the head of Teaching and Research Group, director of child care and education, vice director | Imitate mentor L Give open lessons-confidence Not many trial teaching, but preparation: think (know kids), observe others' teaching Think Communicate Write (reflection) [Pathway] Learn from others: imitate, transfer(think) | Born inspiration |
| 3 | YL | 1.Teaching competition-focus on half day or whole day activities 2.Role transition: teaching & research group leader, vice director-interact with the team 3.Conducting municipal project-study seriously 4.Lead teaching reform & succeed-facilitate ability of co-ordination, design, assessment 5.[role trans]High-level training-leadership 6.(Writing)Works-clarify educational ideas & experiences | [Pathway] Practice bravely, think a lot, learn willingly, write willingly | Born way of thinking Born nature, efforts too Attitude Way of thinking |
| 4 | GH | 1.[role transition] Being a mom-mother love-accomplishment & chances (open lessons) 2.[role transition] Vice director-chance 3.[being mentored]Observed & commented by HQ-grow up quickly 4.[train] Municipal master teacher education center - [research]Undertake municipal research project 5.[nomination]District top talent | Learn from others More practice (open lessons) Learn from failure: Find problems in yourself Think much Learn from various voices [Pathway] Practice: most important Opportunities | Might born, but also others |
| 5 | P | 1. LWY mentoring, 2. Enter KJ kindergarten, 3. Teaching competition: tutor, think, try 4. Enter municipal youth team: | Observe teaching, Read books Practice basic skills Learning, thinking | Might have born components |

| | | | | |
|---|----|---|--|--|
| | | observe, evaluate lessons | | |
| 6 | GA | 1. Entering- career transfer 2. Burnishing- open lessons 3. Role transition- from teacher to manager | Practice and reflection Being mentored and mentoring- Giving, Receiving | Inherent understanding and wisdom possible, but absolutely not enough: proper environment, people, (most important) fittest developing channel |
| 7 | MA | Training 1. Municipal backbone training class-improve in theory & practice 2. Transfer from teacher to director-stand on higher level, combine teaching with other aspects of management Honor: special-rank teacher-higher goal | [Conditions] make use of "Good timing, geographical convenience and harmonious human relations (contributed to my success) " 1.big background: preschool education developed quickly, financial development in Shanghai, national investment, more attention, 2.good environment: good kindergarten & director, platform, good mentors-observe, learn, gain more-good start 3.instinct & love: practice-succeed-confirm | Heredity-potential: basic literacy, diligence Environment Education |
| 8 | S | 1.First open lesson 2.First teaching competition 3.Training | Research Reflecting | Maybe born of, not all |
| 9 | FF | 1.In kindergarten: be sure to be a teacher (tell story, teach other kids playing accordion), 2.In elementary school-two different class tutors (hate or give confidence) 3. Enter normal school: [role transition] president of student union-self confirm 4. [Entering] Choose to work (dad's direction) in PN kindergarten: [being mentored]two mentors (old & young) 5.National open lessons-confident 6.Famous Educating teachers base: [being mentored] two mentors-be appreciated, learn to let go, 7.[role trans]department director: trust from the director | Online logs | (Inherent) gifts/talent, efforts, conditions |

| | | | | |
|--------|----|--|---|--|
| 1 0 | DH | <p>1.Speech contest</p> <p>2.Transfer to an exemplary kindergarten-be a municipal backbone teacher</p> <p>3.Director in teaching of JGJG (role transform)</p> <p>4.Director in teaching, vice director, director of WuN (role transform)</p> | <p>1.Learn from others & books</p> <p>2.Practice without minding and grasp the key points: manage classroom</p> <p>[Pathways]</p> <p>Learn, summarize, write, read,</p> <p>Learn from parents</p> <ul style="list-style-type: none"> -express style -content of curriculum <p>Learn from life</p> <ul style="list-style-type: none"> - being a mom (role transition) -inspiration from cry (understand kids) <p>Reflect & refine</p> <p>Accumulate cases</p> <p>Discover own issues</p> | <p>Born of teaching touch, Most from efforts</p> |
|--------|----|--|---|--|

Note: []-subcategory

Table 11 Sub-Categorized Data of Stepping-stones to Acquire Expertise

| Sub-categories | Codes | Teachers | Frequency | Total |
|---|---|--|-----------|---------------|
| Experiencing role transition | The head of Teaching and Research Group-director of child care and education, -vice director-director | SS (3), YL (3), GH (+being a mom, 2), GA, MA, FF (+president, 2) , DH(4) | 7(16) | 7(16) |
| Transferring/entering to exemplary kindergarten | | FD, P, GA (career, 2), FF, DH | 5(6) | 5(6) |
| Competing in contest | | YL, P, S, FF, DH | 5 | 5 |
| Opening lesson (for first time) | | SS, GA, S, FF | 4 | 4 |
| Being mentored | | P, GH (observed & commented), FF (2) | 3(4) | 3(4) |
| (municipal) Attending advanced training | | FD, YL, GH, AM, S, FF | 6 | 6 |
| Undertaking research project | | SS, YL, P, GH | 4 | 4 |
| Applying title or being nominated | | FD, SS, AM, GH | 4 | 4 |
| Others | Leading reform | YL | 1 | 4 |
| | Writing | YL | 1 | |
| | Child mortality | FD | 1 | |
| | Childhood experiences | FF | 1 | |
| TOTAL | | | | 42(53) |

Table 12 Sub-Categorized Data of strategies to Acquire Expertise

| Sub-categories | Codes | Teachers | Frequency | Total |
|----------------------------|--|---|-----------|-----------|
| Seize opportunities | Good timing, geographical convenience & harmonious human relations | GH, MA | 2 | 2 |
| Learn | From others (mentors, various voices, parents), | FD, SS, YL, GH, P, DH | 6 | 11 |
| | Books | P, DH | 2 | |
| | Life/family | DH, FD, FF, P | 4 | |
| | Failure | GH | 1 | |
| Think/reflect/question | Think | SS, YL, GH, P, | 4 | 8 |
| | Reflect | GA, S, DH | 3 | |
| | Question | DH | 1 | |
| Write | Writings, online logs | SS, YL, DH, FF (online logs) | 4 | 4 |
| Practice/give open lessons | Practice | YL, GH, P (basic skills), DH (classroom management) | 4 | 6 |
| | Give open lessons | SS, GH | 2 | |
| Others | Prepare/plan carefully | FD, SS | 2 | 6 |
| | Research | S | 1 | |
| | Communicate | SS | 1 | |
| | Observe | P | 1 | |
| | [Self-affirm] Be complacent | FD | 1 | |
| TOTAL | | | | 36 |

Table 13 Original Coding Data of Advising Other Teachers

| # | Name | Prerequisite | Suggestions/advising approaches [EA] |
|----|------|---|---|
| 1 | FD | Enthusiasm & attitude, to people around her Imaginative & perceptual, playability | [EA] Handbook for novice Teach by personal example as well as verbal instruction (demonstration + words) |
| 2 | SS | Normal attitude, love the career & kids | [EA] Low requirements for novices Be mentored earlier |
| 3 | YL | Nature (Childishness, cleverness), efforts Three Gates for female teachers (love, family, birth) | 1.Like, enjoy 2.Produce professional questions 3.Believe some teaching ideas 4.Practice pragmatically & effectively |
| 4 | GH | | Give more lessons Trial teaching for novices [EA] Give lessons in different teachers' classroom, then give suggestions (demonstration + words) |
| 5 | P | Intuition-observe teaching (love kids, speaking speed, skills) | Recognize the role of teachers: help, comfort Enjoy what you are doing |
| 6 | GA | Like kids first (Interact with kids, accept kids) Then discuss teaching | [EA]Approaches -skill competition - teaching demonstration (demonstration + words) Training ways -giving platform -building team |
| 7 | MA | 3-5 years experiences Nature | 1.Belief 2.Seriousness 3.Being good at learning |
| 8 | S | [S]Can resist loneliness Down-to-earth nature | Detailed lesson plans Attitude adjustment |
| 9 | FF | Talent: playful, passionate [Nodes] The 1 st 5 years | (Novice) 1.choose better kindergarten, 2.keep on learning, 3.deal with relationships [EA] 1.fill a form with all kids' name, 2.recite kids' name, 3.record & review own teaching with notes 4. Notes as rewards 4.video record mentees' teaching with comments Strict but supportive Work hard: dialogue instruction, trial teaching Provide opportunities (remote open lessons) Weekly meeting (observe & adjust) Lift/push to certain level |
| 10 | DH | Values Good understanding Writing, lessons, speech Modest, devoted, thinking in depth, try to solve the problems Major doesn't matter | Reinforce foundation in daily work [EA] Reinforce foundation Create multi-culture Teaching study day Relieve stress |

| | | | |
|--|--|---|--|
| | | [Nodes] 1.classroom management 2.environment set up 3.parent involvement 4.accumulate cases 5.teaching | Treat differently for various teachers Misplacement development Give chances, vision, time |
|--|--|---|--|

Note: []-subcategory

Table 14 Sub-Categorized Data of Prerequisite of Promising Teachers

| Sub-categories | Codes | Teachers | Frequency | Total |
|------------------------|---------------------------------------|-------------------------------|-----------|-----------|
| Attitude | Enthusiasm to people | FD | 1 | 7 |
| | Normal | SS | 1 | |
| | Love/like (kids or career) | SS, P | 2 | |
| | Resist loneliness | S | 1 | |
| | Modest | DH | 1 | |
| | Devoted | DH | 1 | |
| Nature/tuition/talent | Playability | FD (Imaginative & perceptual) | 3 | 7 |
| | Childishness | YL | | |
| | Playful | FF | | |
| | Cleverness | YL | 1 | |
| | Intuition | P | 1 | |
| (Down-to-earth) nature | MA S | 2 | | |
| Efforts | Efforts | YL | 1 | 2 |
| | Try to solve the problems | DH | 1 | |
| Skills | Language (writing, speech) | P DH | 2 | 3 |
| | Good understanding/ thinking in depth | DH | 1 | |
| Others | Values | DH | 1 | 2 |
| | Go through Three Gates smoothly | YL | 1 | |
| TOTAL | | | | 19 |

Table 15 Sub-Categorized Data of Suggestions Given to Novice Teachers

| Sub-categories | Codes | Teachers | Frequency | Total |
|---------------------------|--------------------------------------|-----------------|------------------|--------------|
| Having beliefs | Believe some teaching ideas/X | YL, MA | 2 | 3 |
| | Understand the role of teachers | P | 1 | |
| Having the right attitude | Adjust attitude | S | 1 | 5 |
| | Enjoy the job | YL, P | 2 | |
| | Be serious for the job | MA | 1 | |
| | Question the practice | YL | 1 | |
| Practicing | Practice pragmatically & effectively | FF | 1 | 2 |
| | Give more lessons | GH | 1 | |
| | Conduct trial teaching | | | |
| Learning | Be good at learning | MA | 1 | 2 |
| | Keep on learning | FF | 1 | |
| Others | Choose a good kindergarten | FF | 1 | 2 |
| | Handle relationships | FF | 1 | |
| TOTAL | | | | 14 |

Table 16 Sub-Categorized Data of Suggestions for Educating Novice Teachers

| Sub-categories | Codes | Teachers | Frequency | Total |
|-----------------------|---|--|-----------|--------|
| Establish environment | Give opportunities /platform | GA (skill competition), FF (open lessons), DH(chances, vision, time) | 3 | 9(10) |
| | Build team | GA, DH (multi-culture, misplacement development) | 2(3) | |
| | Support (to certain level) | FF | 1 | |
| | Relieve stress | DH | 1 | |
| | Low requirement for novice | SS, FD (handbook) | 2 | |
| Detailed instruction | Demonstrate + explain | FD, GH, GA | 3 | 4 |
| | Record & review video of mentors & mentees, Review mentor's notes (for all kids) fill form with all kids' name, recite kids' name | FF | 1 | |
| Routine meeting | | GA (weekly), DH (teaching research day) | 2 | 2 |
| Others | Reinforce foundation | DH | 1 | 2 |
| | Mentor earlier | SS | 1 | |
| TOTAL | | | | 17(18) |

Table 17 Original Coding Data of Additional Influences from Family and Life Events

| # | Name | Family | Life |
|----|------|---|---|
| 1 | FD | (Husband) Born of couple/meant to be together (Son) | Get implications from life |
| 2 | XJ | \ | \ |
| 3 | YL | \ | \ |
| 4 | GH | (Husband) Works well with me, understands me (Daughter) Can give examples from her | Give suggestions to parents based on personal experiences |
| 5 | P | (Metaphor) “My mom is a doctor” | \ |
| 6 | GA | \ | \ |
| 7 | MA | \ | \ |
| 8 | S | Dad’ sickness (negative) | \ |
| 9 | FF | Harmony or discord-success | Instruct parents: Daughter’s story |
| 10 | DH | Husband Daughter | Perception from life |

Note: “\” means the item was not mentioned by participants in interviews