



Learning to Teach in a Research-Oriented School-Based Language Teaching Programme

Zhu Chen

(zhu.chen@acu.edu.au)

Australian Catholic University

Alexander S. Yeung

(alexander.yeung@acu.edu.au)

Australian Catholic University

Abstract

This article reports on a research-oriented school-based language teacher education programme in Australia in which native speakers of Chinese were trained to be teacher-researchers while teaching in Australian schools. Qualitative meta-synthesis was employed to analyse, synthesise and interpret teacher research produced by teacher-researchers so as to understand their learning in the programme. This meta-synthesis reveals that by acting, observing, listening and reflecting, the teacher-researchers developed further understanding about pedagogy as well as themselves. Findings of this meta-synthesis support the use of a school-based setting for developing contextualised understanding about pedagogy, and for teachers to construct a teaching self in the specific context.

1 Introduction

While no one would disagree that schools are for educating children, the value of schools for educating teachers has not been recognised until recent decades. A recent trend has shown increasing advocacy for school-based teacher education in many countries, including the USA, Australia, Canada, the UK (Edwards, Gilroy, & Hartley, 2002) and the Netherlands (ten Dam & Blom, 2006). Despite their shared commitment towards closer links with local schools, models of school-based teacher education vary from country to country. For example, the UK recently implemented “school-centred initial teacher training” in which teacher education was essentially deregulated as schools were allowed to have their own teacher education programme and award formal teacher qualifications, although universities may continue to award teacher qualifications (ten Dam & Blom, 2006). Based on the belief that schools must have control over the quality of teachers, the Netherlands broke universities’ monopoly in teacher education and legitimised the collaboration between schools and higher education institutes in training people from other professions to become qualified teachers. Unlike the UK model, higher education institutes in the Netherlands have the entitlement to award a diploma for teaching (ten Dam & Blom, 2006). In the Netherlands, there are also school-based teacher education programs in which teachers in schools assume mentoring responsibilities as veteran teachers (Buitink, 2009). In other countries such as Australia, school-based teacher education represents collaboration between schools and universities. While universi-

ties still award teacher qualifications, the practicum in school settings becomes a compulsory and substantial part of teacher education in order to strengthen the links between theory and practice.

Researchers argue in favour of school-based teacher education primarily for the rich opportunities it offers for teachers to learn by participating in an authentic context. According to ten Dam and Blom (2006), school-based teacher education increases opportunities of “learning through participation in real, meaningful practices” (p. 649), which stimulates the development of teachers’ professional identity. Other researchers also claim that teaching is a complex task that should be learned in authentic situations (Buitinik, 1994; Johnson, Ratsoy, Holdaway, & Friesen, 1993). Nevertheless, criticism of school-based teacher education also arises. A major concern is that for schools with a shortage of teachers, the serving teachers are already overloaded and are likely to have limited time to provide high-quality teacher education (Gilroy, 1998; ten Dam & Blom, 2006). Previous research has revealed that school-based mentors tend to concentrate on student teachers’ adherence to the curriculum, but fail to help them to interpret and respond to classroom events (Edwards, 2001; Edwards & Protheroe, 2000, 2003). In essence, school-based mentors’ feedback is often situational in nature, which rarely addresses general theory and principles of learning. Without understanding the underlying principles and theoretical underpinnings of teaching, school-based teacher education could result in student teachers’ superficial learning by imitating and adapting the mentor’s practice (Bolhuis & Simons, 2001; Van der Klink & Streumer, 2004).

However, Buitinik (2009) found contradictory evidence showing that through the school-based approach, student teachers developed rich learning-focused theory, which coherently integrates with experiential knowledge and practice. The contents of student teachers’ learning cover a wide range of aspects such as the curriculum, learning activities, teaching methods and skills, classroom management, the students, the school, and policy (Buitinik, 2009). Buitinik (2009) summarised student teachers’ process of learning in school-based learning in terms of two stages. In the initial stage, the teachers focus on role acceptance and establishing classroom control, while in the second stage, the teachers are concerned more about students’ learning. Buitinik (2009) considered student teachers’ focus on student learning as evidence of their significant professional development in school-based learning.

Whereas the integration of theory and practice is the essence of successful teacher education, success often depends on the quality of mentoring within the school context. Within the realm of school-based teacher education, a significant amount of research has actually focused on mentoring and evaluating its efficiency (Bullough Jr, 2005; Hagger, McIntyre, Wilkin, & Wilkin, 2013; Maynard, 2000). However, although we take the view that mentoring occupies a prominent place in school-based teacher education, it should not be taken as the only channel for student teachers to learn in the school context. This article introduces a programme in Australia which incorporates teacher research as an integral component of school-based teacher education. The purpose of this article is to demonstrate what and how participants in this programme learned in this research-oriented school-based teacher education.

2 Research-oriented school-based teacher education

The project reported in this article is a research-oriented school-based Chinese language teacher education programme based on a partnership between a university in Western Sydney and a group of local public schools selected by the New South Wales Department of Education and Communities (NSW DEC). Participants in this programme were native speakers of Chinese who had just completed their undergraduate study. They were enrolled in the programme in different years and thus graduated from the programme in different years. For each participant, the duration of the teacher education is one-and-a-half years. Instead of preparing them as student teachers in other Australian teacher education programs where they would be expected to attend lectures and tutorials at universities and then undertake practicum at schools, they were deployed to teach Chinese in schools. During the one-and-a-half years, these student teachers taught Chinese at local public schools two days a week and undertook teacher research to obtain a Master of Education

(Honours) degree at the same time. In this sense, these student teachers are also identified as *teacher-researchers* in the programme. The main components of this research-oriented school-based teacher education include:

- NSW DEC introduction on language pedagogy, child protection policy, NSW school systems, Chinese curriculum and syllabus,
- University weekly workshop on educational theories, research methodology, research ethics; and teacher-researchers working with research supervisors on their research focus, methodology and findings,
- Teacher-researchers teaching Chinese language at local public schools two days per week and reflecting on their teaching practice, and
- Teacher-researchers conducting teacher research while teaching at schools and reporting their research in their Master's thesis.

There are two features of this programme which distinguish it from other teacher education programs in Australia. Firstly, unlike normal teacher education programs in which the practicum occurs subsequent to a certain amount of theoretical study at university, in this programme, immersion in schools spreads throughout the entire duration of teacher education, from the very beginning till the end of the programme. Secondly, using teacher research to promote and organise teacher learning around authentic experiences at schools is to some extent bold and novel. By conducting educational research, teachers develop their professional skills through pragmatic inquiry and practical experience. This design is theoretically underpinned by the notion of teacher-as-researchers. Lankshear and Knobel (2004) argue that being teacher-researchers enhances teachers' professional identity and teachers' teaching and learning in the classroom. Similarly, Barry and King (1999) consider the combined role of teacher and the researcher as the best arrangement in that both expertise in teaching and research can be drawn upon to improve classroom practice.

3 Method

3.1 Design

Qualitative metasynthesis was employed in this study to investigate what and how teacher-researchers learn in the research-oriented school-based teacher education. Qualitative metasynthesis, as part of a tradition of metaresearch, analyses, synthesises and interprets findings from qualitative studies and identifies common themes that emerge from different studies (DeWitt-Brinks & Rhodes, 1992; Major & Savin-Baden, 2010). Major and Savin-Baden (2010) highlighted several reasons for using qualitative metasynthesis, such as dealing with information explosion, making connections between existing studies, providing a cost-efficient approach to qualitative research. Thorne, Jensen, Kearney, Noblit and Sandelowski (2004) consider qualitative metasynthesis as "another interpretation of interpretations" (p. 1348), which attempt to develop a refined understanding of a particular event or phenomenon. In the present qualitative metasynthesis, the event or phenomenon we tried to understand is teacher learning in the research-oriented teacher education programme introduced above. This was done by analysing, synthesising and interpreting teacher research generated by the teacher-researchers of the programme. Contained in this teacher research are the teacher-researchers' thick descriptions and interpretations of their professional learning while participating in the programme. Therefore, we consider this teacher research as valuable evidence for understanding the teacher-researchers' teacher learning and qualitative metasynthesis as the most appropriate methodology for such purpose. The study focuses on two research questions: (1) What did the teacher-researchers learn? And (2) how did they learn? As a systematic approach to the collection and analysis of qualitative studies, the process of qualitative metasynthesis involves (Major & Savin-Baden, 2010, p. 11): (1) identify studies related to a research question; (2) collate qualitative studies across a large area of literature; (3) examine the theories and methods used in each study in-depth; (4) compare and analyse findings for each study; (5) synthesise findings for each study; (6) undertake an interpretation of findings across the studies; (7) pre-

sent an interpretive narrative about the synthesis of findings; and (8) provide a series of recommendations.

3.2 Data collection

The first step of the qualitative metasynthesis was to collect teacher research generated by the teacher-researchers in the research-oriented school-based teacher education programme. As all the teacher-researchers undertook teacher research to obtain a Master of Education (Honours) at the university, their Master's theses provided a valuable source of information for the metasynthesis. Their theses are publicly available from the university's thesis repository. The initial search terms for retrieving their theses from the repository were "Chinese language teacher" and "beginning Mandarin teacher". The search resulted in a list of 252 theses. By reading the abstracts, 22 out of the 252 theses were identified as generated by teacher-researchers in the research-oriented school-based teacher education programme described above. As all the theses had successfully passed external examinations, they were of reasonable quality. However, although all teacher-researchers conducted teacher research, their research focuses differed. For our purpose of examining school-based teacher learning, only those theses which explicitly reported the teacher-researchers' teaching and learning at schools were relevant and were therefore selected. Based on this criterion, the pool of studies was finally narrowed down to 10. This number is consistent with Major and Savin-Baden's (2010) guideline for qualitative metasynthesis, namely, that "between 6 and 10 studies is optimal to provide sufficient yet manageable data" (p. 54). These theses (see Table 1 for a listing of the studies included; and their links can be found in the references), mostly of a self-study type, focus on teacher professional identity, teacher knowledge, teacher professional development, teacher engagement, and the application of particular teaching strategies. Most importantly, they provide insights into teacher learning. As the teacher-researchers graduated from the programme in different years, their Master's theses were submitted in different years. All the Master's theses are based on qualitative research.

Table 1. Studies included

H. Chen (2011)	A Chinese beginning teacher's professional identity transformation: An auto-ethnographic study
Y. Chen (2011)	Assessment for Learning: Enhancing activities to learn Mandarin
Huang (2011)	A 'self-study' of a Chinese teacher-researcher's practice of transnational knowledge exchange: Stimulating students' Mandarin learning in Australia
Li (2010)	Constructing the identity of a Mandarin teacher in Australia: A narrative self-study
Liu (2012)	A path to professional knowledge and identity building: Self-study of a native Chinese language two teacher in Western Sydney schools
Qiu (2013)	The impact of beginning Mandarin teachers' knowledge on primary students' classroom engagement in western Sydney schools
Weng (2010)	Magic moments: A second language teacher's zone of professional development
Wu (2010)	Teacher engagement in second language (L2) classrooms: Teacher-as-researcher
Yuan (2011)	Interest-based language teaching: Stimulating Australian students' interest in learning Mandarin
Zhang (2010)	A bilingual second language teacher teaching bilingually: A self-study

3.3 Data analysis

The data were coded using two different methods simultaneously. To find out what the teacher-researchers had learned, descriptive coding which "summarizes in a word or short phrase the basic

topic of a passage of qualitative data” was applied (Saldaña, 2009, p. 70). Descriptive coding is one of the approaches to assist with answering ‘what’ type of questions (Saldaña, 2009). To examine how the teacher-researchers learned, process coding was employed. Process coding searches for “ongoing action/interaction/emotion taken in response to situations, or problems, often with the purpose of reaching a goal or handling a problem” (Corbin & Strauss, 2008, pp. 96–97). In this sense, process coding is considered as appropriate to extract the process of school-based teacher learning embedded in the data. Codes from different studies were synthesised to establish themes shared by these studies. After data analysis and synthesis, the findings were interpreted and presented in the discussion section of this article.

4 Findings

In terms of what to learn, analysis through descriptive coding reveals that teacher-researchers not only learned about pedagogy but also about their teacher ‘self.’

4.1 Learning about pedagogy

4.1.1 Adaptation to local educational culture

Flores and Day (2006) claimed that beginning teachers often struggle to match their work with their own vision of teaching, while they are at the same time subject to the influence of the local school culture. Teaching in the local schools, the teacher-researchers were exposed to the Australian culture of teaching and learning, which they had never experienced before. According to the teacher-researchers, it was their immersion in the authentic context that made them realise the inapplicability of some of their pre-existing beliefs and practices to Australian classrooms, and therefore had to learn to adapt to the educational culture in Australia. The teacher-researchers’ adaptation to local education culture is evident in different aspects of teaching.

Teacher-student relationship. Firstly, teacher-researchers demonstrated adaptation to the less structured hierarchical teacher-student relationship in Australian classrooms and their adjusted assumption of students’ obedience to teacher instructions. Yuan (2011) and Wu (2010) realised that teachers in the Australian classroom cannot assume students’ respect for teachers’ authority or obedience of teachers’ instructions. Instead, teachers need to tactfully earn students’ respect and compliance.

Motivating and engaging students. Adaptation to the local educational culture was also evident when teacher-researchers realised that there were teacher responsibilities in the Australian classroom which would not be expected in their culture. In China, the majority of students would be motivated to achieve good performance in exams, and therefore the teacher-researchers did not perceive motivating students as a major responsibility of the teacher.

However, the teacher-researchers found that there is hardly any extrinsic motivation in the form of exam scores or employment advantages for local students to learn Chinese. In view of such a lack of tangible motivation, the teacher-researchers had learned to increase students’ intrinsic motivation for Chinese learning. While immersing in local schools, the teacher-researchers learned various strategies to increase immediate fun in the Chinese classes so as to boost students’ intrinsic motivation and engagement in learning Chinese instead. Interestingly, these strategies reflect some characteristics of the target students. Wu (2010) built her teaching upon popular music to engage her students. While she taught Chinese language, she introduced Chinese pop music and stars. Qiu (2013) learned that linking students’ daily life interest to Chinese learning can build teacher-student rapport and increase the meaningfulness of learning to young children, which contributes to students’ behavioural and cognitive engagement. In one of her lessons, Qiu (2013) role played some popular cartoon characters and did self-introductions in Chinese, which successfully engaged students to learn to introduce themselves in Chinese.

The teacher-researchers also reported using a diversity of games, visual and auditory support with technology, songs and rhymes for enhancing students’ enjoyment of learning. Moreover,

while teaching in schools, teacher-researchers discovered that cultural differences that inspired students' curiosity work as a form of motivation.

Teaching without textbooks. Another distinctive feature between Chinese and Australian classrooms is the use of textbooks. The local culture of teaching without textbook is a challenge to the teacher-researchers. Unlike teachers in China who teach the contents in a uniform set of textbooks, Australian teachers are not required to follow fixed textbooks. Teachers in Australia have to spend a significant amount of time on collecting, selecting, and organising teaching materials from various resources and then design classroom activities.

Student-centred teaching strategies. Moreover, the teacher-researchers' fundamental beliefs in teaching were challenged and many of them had to adjust their teacher-centred teaching to suit the student-centred educational culture in the Australian context. Influenced by Confucian philosophy, the teacher-researchers originally understood the role of a teacher as a knowledge provider who feeds students with knowledge through teacher-dominated lecturing. However, while teaching in Australian schools, they adopted a student-centred style of teaching, which emphasises the facilitation of students' learning instead. The teacher-researchers learned to encourage the students to become active independent learners instead of passive recipients of knowledge. This involves encouraging students to take responsibility for their own learning and empowering them to construct their personalised knowledge:

It was also salient that I was more mature in employing the student-centred teaching practice. Before that, I just reached the level that using teaching strategies catering for students' interest and knowledge base, however, my teaching practice was still teacher-oriented. As the time went by, my teaching strategies were shifted to more focus on students' responsibility for their learning and their capability in exploring knowledge. (Liu, 2012, p. 145)

They made an effort to understand the local students and tailored their teaching to students' different learning styles, social and cultural backgrounds and learning abilities.

4.1.2 Pedagogical content knowledge

Shulman (1986) pointed out that having knowledge of subject matter/content and general pedagogies in isolation is insufficient for teachers to teach effectively. The interplay between content and pedagogy, known as pedagogical content knowledge (PCK), is of great importance for teachers. Shulman (1986) defines PCK as "the ways of representing and formulating the subject that makes it comprehensible to others" (Shulman, 1986, p. 9). Tirosh (2000) found that new teachers develop PCK from practical teaching experiences. Our analysis reveals that PCK was an integral part of the teachers' research-oriented school-based learning. Firstly, the teacher-researchers' learning of PCK involved their understanding of difficulties in learning Chinese from the perspective of foreign language learners. Some realised that English speakers are familiar with their alphabetic language system, and therefore learning Chinese characters in an ideographic system is a challenge. The students had difficulty in recognising, remembering, and writing Chinese characters and linking characters to their meanings (H. Chen, 2011). Through classroom teaching, H. Chen (2011) found that what she perceived as difficulties when she learned Chinese pronunciation in her childhood as a first language were irrelevant to her students in Australia. Therefore, her application of first language teaching methods failed to address the real learning difficulties of her students. Secondly, when student difficulties were identified, the teachers learned to apply appropriate pedagogy to deal with them, often by linking the content to their prior knowledge. To facilitate students' learning of Chinese characters, H. Chen (2011) made up stories or encouraged students to make up stories about Chinese characters to establish links between shape and meaning:

Then, I wrote down another character 哥 (elder brother). A boy student called out, "It looks like a unit, Miss!" I didn't want to refuse his idea, though I meant to describe it as a double-layer cake. Moreover, his suggestion indeed seemed to be more suitable. So I said "Excellent. It indeed looks like a unit. Very good, what is your name?" "Daniel. I like your idea, Daniel." I praised him and continued:

“Since elder brother got a job. So he has money to buy a unit. So this character means elder brother.” I made up this explanation just by brainstorm two seconds before. The boy smiled happily. (p. 132)

Huang (2011) drew on the map symbols students learned in their geography class to explain the ideographic writing system

I drew a link between the Chinese writing system and map symbols which they learned in their geography class. Map symbols look like early Chinese writing, which is how characters came into existence. I took “山(mountain)” as an example ... (p. 125)

Chinese is a tonal language in which a single sound can turn into four words with completely different meanings just because of changes in the tones. This is unfamiliar to English speakers. Through school-based learning, the teacher-researchers recognised students’ difficulties in this respect and developed PCK to scaffold tones learning:

I asked them to practice four tones with Chinese music notes, lalalala and named it as singing tones ... Before that, I just asked them to practice it with specific words and repeated after me, few of them were willing to do it because they all said that tone was unlearnable. However, by using the pitch in music, they immediately get the perfect one. I found that when they pronounced the specific word, they would initiatively sing the four tones first, and then helped them to be more confident in getting the right tone. (Liu, 2012, p. 133)

4.1.3 Supportive learning environment

With the help of school-based learning, the teacher-researchers accumulated practical knowledge in creating a supportive learning environment for students. They learned how to manage Australian classrooms. For example, H. Chen (2011) learned to manage students’ behaviour in both reactive and proactive ways to create a supportive learning environment. Huang (2011) learned to manage the classroom by following established rules and actions used in the school such as using hand gestures, the school reward system, and explicit instruction. Similarly, Qiu (2013) highlighted her learning of detailed instruction and gestures as effective classroom management strategies. Qiu (2013) learned that as non-verbal codes frequently applied in the classroom, gestures such as clapping convey teachers’ expectation which is already known by students. Therefore, using such conventional non-verbal codes helps non-native teachers manage the classroom, because it avoids confusion. Yuan (2011) wrote explicitly about her learning of how to discipline students:

Having been teaching Mandarin for over a year, I learned how to discipline students appropriately, based on my own experiential knowledge gained through teaching, as well as from the knowledge of other, experienced teachers. I established my rules of discipline for my Mandarin lessons and implemented these as part of my professional learning. (p. 156)

In addition, the teacher-researchers learned to maximise students’ exposure to the target language to create a supportive learning environment. Huang (2011) displayed the learning contents on the wall of the classroom. Li (2010) increased opportunities for students to use the target language on a regular basis by using it for classroom routines such as greetings and roll call. Moreover, the teacher-researchers learned that building rapport with students and making them feel comfortable in language learning are important elements of a supportive learning environment.

4.2 Learning about self

Previous research has consistently shown that teachers bring into teaching their beliefs and understanding about education shaped by their cultural background and personal experiences (Feiman-Nemser, 2001; Richards, 2010; Richardson, 1996; Watzke, 2007). There was evidence of

teacher-researchers' increased consciousness of personal beliefs, experiences, and emotions, which significantly influenced their teaching. H. Chen (2011) realised that her educational experience in China contributed to her expectations of students' obedience and her belief that students should be responsible for their own learning effectiveness, while the teacher's role is to transmit knowledge. Due to such expectations and beliefs, H. Chen (2011) did not use motivation in her pedagogy, which resulted in unsuccessful teaching. Liu (2012) documented the same impact of Chinese schooling on her expectations of students' behaviour, which explains her ignorance of classroom management as an important aspect of teaching:

In my case, my prior notions about classroom management developed from my own experience as a student in China, as Chinese schools emphasised students' learning outcomes much more than classroom management. Classroom management issues were seldom valued in Chinese classrooms. I did not expect classroom management to be an issue; I did not even realise that it could be an issue. (pp. 162–163)

Weng (2010) reported that her prior Chinese schooling experience resulted in her initially negative attitudes towards students asking questions during class time:

I felt my prior learning experiences largely affected the strategies I used in teaching. When I was in primary and high school, I was simply expected to answer rather than raise questions ... Students were asked to raise questions after classes in order not to interrupt teachers ... I learned that good classroom order equals a quiet environment. In contrast, I felt a distinctive feature of Australian students is that they like raising questions frequently and freely during lessons ... My previous educational background led me to regard that behaviour as a disturbance. (pp. 98–99)

Y. Chen (2011) found that her belief in students as passive recipients of knowledge and her emphasis on summative assessment which had stemmed from her own learning experience in China was reflected in her teaching. Similarly, Li (2010) perceived herself as being trapped by her belief developed from her earlier Chinese educational experience with an emphasis on learning outcomes and knowledge feeding:

My experience as a Chinese student in a system that was outcomes driven founded on knowledge transmission, initially impacted my teaching in Australia. I found that this approach resulted in difficulties with lesson timing and inflexible teaching. (p. 119)

Also influenced by traditional teacher-centred Chinese ways of teaching, Wu (2010) taught her students by giving presentations and lecturing, which turned out to be ineffective in the Australian classroom.

Interestingly, prior experience may also have a positive impact on teachers' practice. Qiu (2013) reported the contribution of her earlier high school experience to her pedagogical knowledge as follows:

The teacher-researcher's pedagogical knowledge of individualism was originated from her prior learning experience brought by her foreign language teacher ... The prior experience as a L2 learner made the teacher-researcher realise that individualised learning on students was of significance. That stimulated her to apply this strategy into her own teaching practice as a L2 teacher. Therefore, the personal experience as a learner is beneficial for beginning Mandarin teachers to build their teaching knowledge. (pp. 139–140)

Apart from the impact of the Chinese educational background, the teacher-researchers were also aware that as non-native speakers of English, they perceived themselves as less privileged than native speakers. As a consequence, they pushed themselves to use native ways of expression and evaluated themselves against native speakers. When they failed to use native-like English, self-doubt could arise:

I used to apply the native standard to my English speaking, questioning my eligibility to teach Mandarin to native English speakers. While I was seeking to speak English as fluently as natives, regardless of my own situation, I felt depressed because I thought I had failed. (Li, 2010, p. 205)

The linguistic non-native competence, however, challenged my sense of worth to be a real qualified teacher in Australian teaching context. (Liu, 2012, p. 106)

Richards (2010) pointed out that from a sociocultural perspective, teacher identity developed from their personal experiences and culture will be reshaped by teachers' social interactions in the classroom during teacher-learning. In the research-oriented school-based teacher education programme, the teachers, being aware of the negative consequences of applying native speaker standards to themselves, learned to reconstruct their identity as bilinguals and started to value their knowledge associated with this bilingual identity.

The turning point happened as I realised the importance of self-positioning: I am an L2 user, rather than a failed English speaker who tried to enter the native-speaker community. I have my unique ways of using language. I do not have to be the same as a native speaker, which would place me in a passive position. Re-positioning myself as an L2 user built my confidence to teach Mandarin in English. Negative feelings were relieved and the difference of language use between the students and myself could even have been a resource for teaching rather than an obstacle ... My focus was not native standard anymore. Instead, I tried to explore my own ability and advantages in using an L2. (Li, 2010, pp. 205–216)

The clarification of identity also helped the teacher-researchers to learn about their own emotions and feelings and their associated impacts on students. Wu (2010) found that her negativity related to students' engagement impeded her engagement as a teacher, which in turn resulted in her less-than-optimal performance and her further negativity and disengagement. She learned that changing her own negativity was the key to break such a vicious cycle. In a similar vein, Li (2010) realised her problem that her feelings and concerns as an individual took precedence over her responsibility as a teacher in her teaching:

I realised that I had set a task that was too difficult for students to finish in one lesson. I knew I should change my plan but did not want to lose face by admitting that I had made a mistake. I stuck to my original plan and kept myself in a safe place ... All of my consideration started from the position of an individual instead of the teacher role. (pp. 155–156)

4.3 How to learn

Our process coding indicates that in the research-oriented school-based teacher education, the teacher-researchers learned through cycles of acting, observing, listening, and reflecting. Although the teacher-researchers emphasised mentoring as the way they learned to teach in the school-based settings, we do not address mentoring as a separate process. This is because the four processes that emerged from the data have captured the essence of mentoring during the professional learning process.

4.3.1 Acting

Different from university-based teacher education, which starts with learning of theoretical knowledge, school-based teacher learning often occurs through trial and error with teachers' acting as the starting point of learning. Essentially, acting generates field experiences based on which the teacher-researchers evaluate their effectiveness as a teacher. Richards (2010) pointed out that acquiring the basic classroom skills and establishing a repertoire of techniques and routines are the initial challenges for novice teachers. From the perspective of acquiring basic classroom skills and routines, teaching is "an act of performance" (Richards, 2010, p. 107). We found in the present study that during the acting stage, which was the very first stage of the school-based teacher learn-

ing, performing different teaching strategies seemed to be the primary concern of the teacher-researchers. The teacher-researchers' further learning was based on the self-evaluation of their use of different teaching strategies. During the initial stage of teaching, the teacher-researchers tested teaching strategies which they experienced as learners. As university graduates from China, they often applied teaching strategies commonly used in the Chinese educational system, which often applies teacher-centred strategies based on Chinese educational beliefs. The teacher-researchers were particularly inclined to replicate in their classroom the teaching strategies associated with their own positive learning experiences. Teacher-researchers acted by following the same approach their previous teachers had used effectively to teach Chinese as a first language. Nevertheless, the teacher-researchers also experimented with newly acquired teaching strategies such as student-centred teaching, the use of technology, communicative language teaching, as well as various strategies to manage the class and engage students. Acting often involves mimicking others' strategies. By learning from the positive or negative experiences resulting from their actions, the teachers either gradually refined teaching strategies they acquired or developed their own teaching strategies. For example, while experimenting with teaching Chinese using music, Liu (2012) realised that, even though this would engage students, there are limited ready-made songs appropriate to the topic. Hence, she created new songs by integrating teaching contents into melodies familiar to students. Based on positive and negative experiences following her original action of teaching Chinese pronunciation, Liu (2012) also created an innovative approach to teaching pronunciation. Although the teacher-researchers did receive methodology training prior to entering the schools, they obviously did not have a clear idea as to how to apply various methods, until they acted as a teacher in a real classroom context. It was their action and subsequent experiences, instead of the training course per se, that activated their learning as a teacher, as commented by Li (2010):

My learning about teaching happened within the process rather than as a result of direct instruction. For instance, in DET training I learned the importance of keeping student interest on the learning target, but I did not keep it in mind until I met a problem when handing out the lyrics to teach a Chinese song (Story line 3); I was told about the necessity to keep a distance from students and to be serious about setting rules, but I did not take it to heart until my teacher authority was challenged by students at the aquarium (Story line 5). Through interacting with others and my teaching world, I learned from experiences. If I did not experience it on my own, learning did not actually happen. (p. 209)

4.3.2 Observing

After their initial action, the teachers learned further by observing their students or other teachers. Teachers' learning from students about how to teach has been described in previous research (Ferry, 2010; Tang, 2003). In our study, by observing students' responses to their action, the teacher-researchers negated or validated their own practice and learned to adjust their practice accordingly. The teacher-researchers also learned new teaching strategies by observing students' own creative ways of learning. Liu (2012) perceived students' negative reactions as a powerful driving force for her professional learning, whereas students' positive reactions formed the positive reinforcement confirming their practice:

Observing students' negative reaction like disengagement, low motivation in reviewing and bad learning outcomes all acted as motivators to push me to change the situation through professional learning. (p. 115)

Students' positive feedback here referred to my observation of students' positive engagement and positive learning outcomes that helped me to validate my particular teaching strategies. (p. 117)

It is often from students' negative reactions that the teacher-researchers realised the difference in culture between Australia and China, and the inappropriateness of applying Chinese teaching strategies and beliefs in Australian classrooms. Students' negative reactions also partly revealed

the teacher-researchers' weakness in different aspects such as classroom management, knowledge about students, and instructional language.

Sometimes I became conceited about my improvement, until students shocked me, which made me realise I was still a long way from becoming a real teacher. (Li, 2010, p. 168)

H. Chen (2011) was initially very confident in her ability to use technology in teaching. It was not until students kept asking for help with technology in her class that she realised her instruction on technology use was ineffective.

Whereas observing students' reactions helps to identify problems, observations of other teachers often help to resolve the problems. The data revealed that the teacher-researchers observed other teachers and compared their own practice with what they observed. Originally, H. Chen (2011) was confused and anxious about teaching without a textbook. By observing how local teachers taught without any textbook, H. Chen (2011) started to believe in the feasibility of teaching with materials selected and organised from various sources. Huang (2011) learned classroom management skills by observing other experienced teachers in the school. By observing the local teacher, Li (2010) learned the Australian educational culture, which emphasises learning processes over learning outcomes. She learned from another Chinese teacher-researcher's lesson how to maximise students' use of Chinese for communication. Also, by comparing her own teaching with her colleague's practice, Li (2010) recognised her problems of misinterpreting her students' apparent unwillingness to learn. Other local Chinese language teachers are also important sources for the teacher-researchers to acquire pedagogical content knowledge and effective instruction. Qiu (2013) explicitly commented on the value of observing other teachers:

First, the local teachers' practices provide assistances to explicit activity rules and to manage the classroom, set beneficial models for beginning Mandarin teachers. Their classroom language usages are greatly valued as examples to follow. The memorization and practice of these native expressions is regarded as the major way to supplement their knowledge of EFL as classroom language. Second, the observational opportunities the Mandarin teachers obtained in local schools set a more comprehensive teaching model for them to understand the teaching and learning in Australian primary schools. (p. 187)

4.3.3 *Listening*

Listening to students' voices and other teachers' feedback constitutes another important process of research-oriented school-based teacher learning. Similar to the observing process discussed above, listening serves the function of negating or confirming the teachers' practice and searching for resolutions to problems.

The teacher-researchers not only passively received comments from other teachers. Often they raised their concerns, and sought ideas and suggestions from other teachers. Liu (2012) regarded professional conversation with other teachers as valuable resources from which she gained school-specific practical knowledge about teaching. Y. Chen (2011) and Yuan (2011) learned practical classroom management skills from post-class advice provided by experienced teachers. Huang (2011) learned different motivating and engaging strategies from dialogue with local teachers. From local teachers, Li (2010) learned equity – treating different students in appropriate ways – as the essence of student-centred education. Qiu (2013) valued advice from her peers as great assistance for her to overcome her shortcomings as a beginning teacher. H. Chen (2011) highlighted in her thesis that an experienced teacher's feedback on her teaching and sharing of teaching strategies were major sources of her PCK. From an experienced teacher's comment, H. Chen (2011) realised that linking the shape of the characters with their meaning is an issue for Australian students. By listening to the teacher's sharing of her teaching experience, H. Chen (2011) learned the strategy of telling stories about each character to scaffold students' memory of characters.

Other teachers often revealed the causes underlying certain student responses, which the teacher-researchers did not realise due to their lack of experience. H. Chen (2011) showed that it was

was from the experienced teacher's comments that she realised there were actually invalid assumptions of difficult elements that may hinder Australian students' learning of Chinese:

I believed I did good teaching because I not only predicted the learning difficulties for students but also employed an effective teaching strategy to solve the potential problem. Again, to my surprise, Karen said: I know this knowledge is stressed when Mandarin is taught as a second language in China. However, it is emphasized actually because Southern Chinese people are not able to tell the differences between the sounds 's' and 'sh' ... However, English-speakers can tell the differences between 's' and 'sh'. For Australian students, the two pronunciations are not a problem at all ... That was why they learned the tongue twister so quickly. (p. 124)

The teacher-researchers also learned by sharing experiences with peers who were in the same situation as critical friends. Peers as an external reference point and coaches who provide input have been found to be beneficial in previous research on student teachers' professional learning (Buchanan & Jackson, 1998; Hawkey, 1995; Kurtts & Levin, 2000). Liu (2012) learned from her professional dialogue with peers who participated in the same project through peer coaching. According to Liu (2012), a favourable aspect of learning from peers is that there was no fear of shame and more readiness to take risk and share feelings because of the equal status between her peers and herself. Moreover, being in the similar situation, advice from peers bears more applicability and relevance to her own teaching.

Listening to students is also essential. From students' feedback, Y. Chen (2011) learned the discrepancy between her perception and students' perception of the difficulty level of certain contents. H. Chen (2011) and Liu (2012) learned to teach Chinese characters by listening to students' own creative stories about characters. With students' feedback, Wu (2010) confirmed her use of a variety of engaging strategies and contributed to her understanding of student-centred teaching strategies. Students' individual differences in learning were another important issue that the teacher-researchers learned from their students' feedback. Perceiving the usefulness of such feedback, some teacher-researchers actively collected students' feedback to facilitate their professional learning. Weng (2010) set aside time for students to give feedback to her teaching and considered students' feedback as important for her professional learning:

I came to value feedback from the students. By communicating with them in the class, I could get an idea of how far their learning had progressed; what they had mastered; where they still needed further explanation. Without such interactive feedback, I could never improve my teaching. (p. 99)

Yuan (2011) prepared a feedback booklet for students to provide opinions and advice on her lessons. She considered students' feedback as the basis for her to conduct her interest-based language teaching:

Students' feedback was the vital evidence for analyzing students' Mandarin learning in this project and for examining the effectiveness of the interest-based language teaching ... One way to improve students' learning performance was to improve my teaching, which was improved by professional instruction and also by listening to students' feedback. (p. 119)

4.3.4 Reflecting

Reflecting is the stage in which the teacher-researchers consolidated the different pieces of information they obtained from observing and listening, re-examined their own educational beliefs, sought theoretical explanations, constructed their personal knowledge, and planned for further action. Originally, the teacher-researchers acted upon their own educational beliefs. Observing and listening enabled them to realise the problems of their action, which forced them to re-examine the beliefs underlying their action. H. Chen (2011) maintained that reflection was the primary process by which she learned to transform her belief in teacher-centred teaching. Y. Chen (2011) reflected on her belief, originating from her early experience of summative assessment, as an influential

factor for her teaching. Reflection helped Li (2010) and Liu (2012) to revise their belief that non-native English proficiency made them inferior to local teachers. As a result of reflection, Wu (2010) abandoned her negative attitudes towards students' disengagement.

Marland (2007) emphasised reflection as the approach to turn pre-existing knowledge into practical knowledge through revising, extending and rebuilding. In this study, the teacher-researchers' previous knowledge was activated and challenged through reflection. For example, Qiu (2013) reflected on the connections between student-centred pedagogy and ancient Chinese military theory:

Learning differences among groups emerged during the teacher's practice and serve as reference for teachers to make instantaneous adjustment for appropriate teaching. This suggests an attempt for a flexible pedagogy which puts students as priority and center of the learning. Its advantage has been recognized by the teacher during practice. Such understanding of pedagogy echoes a famous military words "兵无常势，水无常形 (bīng wú cháng shì, shuǐ wú cháng xíng)" by Sun Tzu in his "The art of war". It literally means that "just as water retains no constant shape, so in warfare there are no constant conditions". Sun Tze believed that the flowing water shapes its course by the topography while the army wins the victory by their enemy. As for classroom teaching, teachers' successful practice relies on their understanding of the differences occurred in students' actual learning. (p. 135)

Due to the research orientation of the school-based teacher learning, considering their field experience in light of previous research constitutes an integral part of the teacher-researchers' reflection. Research-oriented reflection enabled the teacher-researchers to rationalise their actions with theoretical underpinnings and elicit useful theoretical knowledge from their previous training or literature to reframe the complexity of teaching. Li (2010) was enlightened by the literature to reconstruct her linguistic identity and deal with her anxiety about her non-native English proficiency:

That was until I read an article by Pavlenko (2003) entitled: "*I never knew I was a bilingual*" – *re-imagining teacher identities in TESOL*. For second language learners, besides the dichotomy of native speaker and non-native speaker, Pavlenko (2003) raised another group, called multilingual/L2 users. She argues the advantage of a L2 user who has multi-competence and a unique mind. Her argument opened a new window for me to understand my role from a different perspective. She made me think that it is impossible and unnecessary for me to become the same as a native English speaker. Because of different experiences and knowledge, I have my own advantages. I did not have to place myself in a weaker position as a miserable non-native speaker teacher who could not teach Mandarin effectively in English. It was not necessary, and it was stupid to do so. Her idea of an L2 user influenced my thinking by helping me re-identify myself as a bilingual person and suddenly gave me a new, suitable position to reduce teaching pressures. (pp. 6–7)

Liu (2012) found collaborative reflection among peers to be an effective way to construct knowledge. Through collaborative reflection, she learned to avoid the same problems her peers had experienced.

5 Discussion

This metasynthesis contributes to the ongoing discussion of school-based teacher education in two aspects:

5.1 *The extent to which school-based experience should be used*

Based on the findings of this study, there is good reason for learning of teaching through a school-based mode. As demonstrated, the teachers' learning benefited in terms of both pedagogy and self. In other words, school-based teaching experiences build strength in both teaching and the teacher. Although pedagogy can be acquired systematically through university-based programs, school-based experience offers rich opportunities for teachers to learn context-specific pedagogy, which is readily applicable to their immediate teaching situation. School-based experience has

particular significance in developing student teachers' pedagogical content knowledge, adaptation to local educational culture, knowledge in motivating and engaging students, student-centred teaching strategies and supportive learning environment. A possible explanation for the merit of school-based experience is that professional learning in these areas is to a large extent grounded on the student teachers' increasing knowledge about students and teaching context. As students and teaching contexts vary from school to school, these areas of pedagogy cannot be learned effectively in university-based courses, assuming they are context-free. Instead, effective learning of teaching comes from real interactions with other teachers and students within a specific school context. Hence professional learning is a constructive and situated process which is best facilitated through immersion in schools. We maintain that school-based experience should be given a prominent place in foreign language teacher education in order to prepare teachers from other cultures to teach in the local context in a competent way.

For teachers from another cultural background, their prior experiences and beliefs about teaching and learning influence how they carry out their work in the new teaching context. Adaptation to the local education culture constitutes an additional and essential part of foreign teachers' professional learning. The findings in the present study show that school-based experience provides the basis for student teachers to reflect on their prior experiences and beliefs and adapt to local educational culture. This is consistent with previous research revealing that learning to teach is a process by which student teachers construct their teaching self while teaching (Tang, 2002, 2003). The student teachers' sense of self and personal values subsequently influence the way they teach (Tang, 2003). Experiencing dissonance between sense of self as a person and sense of self as a teacher and then restoring resonance between the two are perceived as a common learning-to-teach process (Britzman, 1991; Bullough, 1991; Kagan, 1992). Our research shows that school-based experience contributes significantly towards teachers' self in terms of personal beliefs, experiences and emotions as determinants of teaching practice. Practically, school-based teacher learning is flexible, as the teachers learn on demand and from a variety of sources (experienced teachers, peers, students, literature), and in different ways (acting, observing, listening and reflecting).

5.2 *The value of teacher research*

The other aspect of importance in the innovative programme described here is the teacher research. Teacher research increases student teachers' accountability for their own learning and relieves the burden on schools, which is regarded as a concern in the placement of student teachers in schools (Gilroy, 1998; ten Dam & Blom, 2006). As observed in the present study, teacher-researchers took the initiative to learn from other teachers and students rather than to passively receive information from others. In this sense, research-oriented school-based teacher learning may be regarded as a strong learner-centred approach of teacher education. In addition, teacher research also contributes to optimal effects of mentoring. Mentoring has long been a major focus of school-based teacher education. However, mentors may fail to address theory and principles of teaching and learning, and the mismatch between theory and practice is regarded as a deficiency of school-based teacher education (Bolhuis & Simons, 2001; Stones, 1992; Van der Klink & Streumer, 2004). However, with teacher research as an integral part of school-based teacher education, the programme reported here witnesses not only the teacher-researchers' implicit learning by imitating and adapting, but also their explicit reflections on theories and principles underpinning their action. As Y. Chen (2011) stated:

Through a research approach to professional learning, beginning teachers are able to draw on their past experiences and reflect on their present experiences in a way that is informed by the literature and the experiences of others and that improves their practice ... Research provides beginning teachers with opportunities to focus and guide reading and connect theory to practice. Beginning teachers therefore gain insights into their practice in a way that often provides a fundamentally different view not just of practice but of the context that informs practice. Research can be not just a source of in-

formation but a way to investigate it in a focused but powerful way, to view things differently. Research can provide a rich platform for professional learning. (p. 205).

Hence, teacher research improves the quality of school-based teacher education by substantiating practical experience with evidence-based theoretical underpinnings. School-based experience thus activates theoretical knowledge of practical significance, promotes critical thinking about the theory, and raises the student teachers' self-awareness as a teacher.

6 Conclusion

This metasynthesis of qualitative teacher research conducted by Chinese teacher-researchers attending an 18-month research-oriented school-based teacher education programme seeks to understand what and how student teachers learned to teach while immersed in school settings. Findings of this metasynthesis suggest that by acting, observing, listening and reflecting, the teacher-researchers learned about pedagogy as well as themselves in school contexts. Based on the findings, we recommend the use of school-based experience for developing aspects of pedagogy which require significant understanding about context, and for teachers to construct a teaching self in the specific context. Such use of school-based experience is particularly important for teachers from different cultures. We also advocate teacher research as a facilitating tool to enhance teachers' explicit learning of educational theories through school-based experience, which provides a clear evidence base for testing theories in real situations.

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