

## ***How EFL Teachers Grow: An Explorative Study on Teacher learning in Classroom Teaching***

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Learning from one's own teaching experience has been recognized as an effective way of improving teachers' professional competence. This study proposes an on-site model of teachers' professional development, that is, a self-directed teacher learning situated in day-to-day classroom teaching. A four-month longitudinal study was conducted to examine *what* and *how* two Chinese tertiary EFL teachers learn through classroom teaching. Data analysis shows that the chief changes happened in the participant teachers' pedagogical knowledge, with the largest growth in general pedagogical knowledge and knowledge of students; changes also occurred in the teaching behaviors of the two teachers. Data also indicates that teachers learn actually at every stage involved in daily teaching, pre-class preparation for a new lesson, in-class delivery of the lesson content, and after-class reflection on their performance. Another important finding of the present study is that teacher learning is affected by such contextual factors as students, curriculum and educational policies.

**Key words:** teacher learning, teacher knowledge, classroom teaching, professional development

### **INTRODUCTION**

Among the factors that account for the effectiveness of education, such as

systems, policies, institutions, and the executors of educational practice, there is no question that teachers play a critical role. Hargreaves and Fullan (1992, p. ix) said, 'the teacher is the ultimate key to educational change and school improvement'. According to Richards and Renandya (2002), it is what teachers think and do at the classroom level that eventually determines what and how well the learners can learn in the classroom. With the recognition of the important roles a teacher can play in educational practice, teacher education research gained momentum nearly half a century ago and has flourished since then, producing many new insights into both the epistemological and methodological issues in this field.

Before 1980's, teacher education research based itself on the behaviorist theories. Researchers observed and described teachers' teaching behaviors with the purpose of looking for those features that make teaching effective and ensure student learning. Once effective teaching techniques were identified, they became the target knowledge of those training programs. Teachers were expected to master these techniques and imitate them in their own practice. The underlying assumption of this approach was that these techniques could be utilized across contexts. The behaviorist teacher education model was questioned because it downplayed the individual differences of teachers in their educational experiences, beliefs and teaching situations.

In the mid-1970s, with the growth of cognitive psychology, a new body of research emerged that described teachers' thoughts, judgments and decisions, hypothesizing that it was these cognitive processes that decide teachers' teaching behaviors, rather than imitating practices of others. Thus, researchers have shifted their attention from watching what teachers did to asking teachers why they did what they did (Chaudron, 1988; Clark & Peterson, 1986; Freeman & Johnson, 1998).

In the study of teacher thoughts and decisions, researchers (Woods, 1996; Zhang, 2004) found that how teachers think depends on their existing knowledge and belief systems, and that teacher knowledge is acquired and developed through various forms of learning in various contexts. Thus,

teacher knowledge and teacher learning are gradually becoming two key terms drawing increasing attention. However, the existing body of literature reports studies focusing only on a static description of what knowledge teachers have and how this knowledge informs their teaching practice, while few researchers have tried to provide a dynamic investigation into how teacher knowledge is acquired and developed in the practice of teaching.

This paper introduces a study aiming at the exploration of how two Chinese tertiary EFL teachers develop their professional knowledge and their professional competence through contextual learning in classroom teaching. The findings of this study are implicative for teacher education research in the sense that they provide empirical evidence that teachers grow in the practice of teaching.

## **LITERATURE REVIEW**

### **Studies on Teacher Knowledge**

Researchers have endeavored both to theoretically prescribe what knowledge a teacher should have and to empirically describe what knowledge a teacher actually has and how this knowledge informs his/her practice of teaching. First, researchers try to define teacher knowledge from different perspectives (Golombek, 1998; Grossman, 1990; Johnson, 1996; Kramsch, 2003; Richards, 1998; Roberts, 1998; Shulman, 1987), among which Shulman's categorization is the most influential. Aiming to set the professional standards for certifying teachers, Shulman (1987) put forward the knowledge base of seven categories: 1) content knowledge, 2) general pedagogical knowledge, 3) curriculum knowledge, 4) pedagogical content knowledge, 5) knowledge of learners, 6) knowledge of educational contexts, and 7) knowledge of educational ends, purposes, and values. Shulman believes that among all those categories, pedagogical content knowledge is of special interest because it identifies the distinctive bodies of knowledge for teaching.

Elbaz (1981, 1983) proposed the concept of ‘practical knowledge’, referring to knowledge of practice as well as knowledge mediated by practice. According to Elbaz, teachers’ practical knowledge includes knowledge of subject matter, knowledge of curriculum development, knowledge of milieu and knowledge of self. The way to acquire and apply this knowledge is social, situational, personal and experiential.

Apart from these conceptual constructions, researchers have also made empirical explorations into what knowledge teachers actually have and how this knowledge informs their practice of teaching. Golombek (1998) examined how two in-service ESL teachers’ personal practical knowledge informed their practice by using data from class observations, interviews, and stimulus recall reports. Results indicated that teachers’ practical knowledge informed their practice by filtering experience so that the teachers reconstructed it and acted in response to the exigencies of a teaching situation.

Johnston and Goettsch (2000) focused their study on three categories: content knowledge, pedagogical content knowledge, and knowledge of learners. They concluded that the various elements of knowledge are interwoven in complex ways as they are played out in the classroom teaching, and that the knowledge base of language teachers might best be categorized as process-oriented, frequently involving teachers’ dialogical analysis with students.

Chinese researchers made their own contributions to the examination of how Chinese EFL teachers perceive, acquire and develop their professional knowledge. Zhan (2000) conducted a survey study among 69 Chinese tertiary EFL teachers and found that English proficiency was perceived by this cohort of teachers as being the most important skill for EFL teachers. Besides, they also regard the knowledge and skills pertaining to classroom teaching as being very important.

Zhu (2004) conducted a three-year longitudinal study investigating the pedagogical content knowledge (PCK) development in four Chinese novice secondary EFL teachers during their second or third year of teaching by using multiple case studies for in-depth study. The results indicate that the four

novices experienced a gradual transition from a firmly teacher-centered to a slightly learner-oriented perspective in their practice of teaching. The study also argues that there is a dialectal relationship between the novices' PCK development and the context within which they work.

These experimental studies provide direct first-hand evidence about what knowledge teachers actually have and how this knowledge informs and guides their teaching practice. But how do teachers acquire and develop their knowledge over time? This dynamic dimension needs evidence from studies on teacher learning.

### **Studies on Teacher Learning**

Research on teacher knowledge entails the research on teacher learning, because teacher knowledge is the result of teacher learning, and teacher learning is the way to acquire and develop teacher knowledge. Any growth in knowledge will help teachers get to know the gaps in their professional competence and compel them to learn.

Researchers have tried to define teacher learning from different perspectives. Freeman and Richards (1996) viewed teacher learning as a field in teacher education which concerns the exploration of the nature of teacher knowledge, the cognitive processes that teachers employ while learning to teach, the differences between experienced and novice teachers, etc.

Freeman and Johnson (1998) recognize teacher learning as a normative and lifelong process, built out of and through experiences in social contexts, as learners in classrooms and schools, and later as participants in professional programs'.

Johnson and Golombek (2003) think that teacher learning should be understood as 'socially negotiated and contingent on knowledge of self, students, subject matter, curricula, and setting'. They also posit that teacher learning is 'a process of reshaping existing knowledge, beliefs and practices'.

Richards and Farrel (2005) generalized different perspectives of teacher learning as follows:

- 1) Teacher learning is skill learning,
- 2) Teacher learning is a cognitive process,
- 3) Teacher learning is personal construction, and
- 4) Teacher learning is reflective practice.

All these conceptualizations coming under different theoretical approaches exhibit a change in people's understandings of the concept 'teacher learning', from a behaviorist perspective to cognitive and humanistic perspectives.

Some, little though, literature can be found dealing with the empirical explorations into how teachers learn in different contexts and what factors might affect this learning. Based on his own experiences as a CI (Collaborative Inquiry) initiator, Bray (2002) studied how CI can facilitate teacher learning in a united way, with the conclusion that participative inquiry is the best hope for teachers taking responsibility for their learning environment, and consequently for producing meaningful results in teacher development.

Cheng (2004) examined the role of a voluntary teacher learning community as an alternative means of professional development. The results of this study showed how a professional learning community supports teachers' learning, with the conclusion that teachers depend on various learning opportunities in both social and individual planes for their learning and changes.

Jurasaitė-Harbison and Rex (2005) studied teacher informal learning through research participation. They used the framework of discourse analysis to describe one teacher's informal dialogue with a researcher, exploring how she positions and identifies herself during retrospective reflection about her current practice and goals for the future. The study demonstrated that in this particular mode of interaction the teacher learned by taking on the identity of a researcher.

Of more relevance and inspiration to the present study are those studies dealing with the situation of Chinese EFL teachers' professional learning. Liu (2006) examined six teachers' constructivist learning in a learning community, ETCRG (English Teachers' Classroom Research Group), which was set up as

a sort of intervening and facilitating factor. Regarding the learning product of ETCRG, this study finds that the ETCRG learning project has increased the participants' conceptual knowledge in L2 interaction, and has also resulted in changed classroom interactional behavior of the participants.

Gu (2007) studied nine primary and secondary EFL teachers, exploring how they learn from their formal and informal experiences and what changes this learning brings to their practice. The study produced significant findings that teachers in this study all experienced a continuous interactive and reflective learning process, with their learning styles ranging from being highly self-directed to group-oriented, and that the learning and development of the teachers in this study was facilitated by such contextual factors as role models, school support and various professional development activities.

### **The Purpose of the Present Study**

The studies mentioned above prescribed theoretically what knowledge teachers are expected to have, and described empirically what knowledge teachers actually have and how this knowledge informs and guides their practice. Some studies dealt with how teachers acquire and develop their professional knowledge through various forms of learning, such as reflective teaching, learning community participation, collaborative inquiry, or research engagement. But few researchers have tried to examine what and how teachers learn in the natural context, i.e., the day-to-day practice of classroom teaching. The assumption underlying these studies is that learning can only happen when the learner is actively engaged in some kind of social interactions within certain contexts. However, as we all know, the context in which teachers practice most of their professional endeavors is classroom teaching.

Allright (1983) emphasized the importance of classroom by pointing out that 'classroom is the proper place to look first for insights and understanding'. Richards and Farrel (2005) claimed that 'classrooms are not only places where students learn – they are also places where teachers can

learn'. Putnam and Borko (2000) said that an effective way for teachers' professional development is to locate teacher learning in practice, especially in classroom teaching, which is the powerful tool to help teachers change and grow.

So, classroom teaching is the most dynamic and vigorous part of teachers' professional practice, full of unexpectations, changes and growth, and it must be the context in which teacher learning takes place most frequently and saliently. To study teacher learning by locating it in the daily classroom teaching will surely help us understand better the nature of it.

To serve this purpose, the present study conducted a focused examination on teacher learning in classroom teaching by addressing the following research questions:

- 1) Do the teachers learn in classroom teaching? If yes, what do they learn?
- 2) How do the teachers learn in classroom teaching?
- 3) What are the contextual factors that might facilitate or constrain this learning? And how?
- 4) What is the shared pattern of teacher learning in classroom teaching?

## **RESEARCH DESIGN**

### **The Participant Teachers**

Two EFL teachers, Kate and Clara (pseudonyms) in the university where the researcher works were sampled as the participants in the present study.

One principle of sampling is to select individuals who are most likely to be 'information-rich' and exhibit the phenomenon being studied, from which the most can be learned (Chen 2000; Gall, *et al*, 2004; Merriam, 1998).

Kate is a teacher who has been teaching English in the university for 4 years. According to Huberman et al. (1993) and Berliner (1994), a teacher at this stage is assumed to have survived the initial entry difficulties and started

to adapt him/herself to the challenges in the job. This is the period during which teachers are supposed to learn the most and the fastest.

Clara has been teaching English for 14 years. According to Huberman et al. (1993) and Berliner (1994), teachers at this stage have accumulated a certain amount of experience and are thus confident and capable enough to engage themselves in explorative experimentation of teaching theories and techniques. A case of this kind will exhibit enthusiasm and speed in learning, from which much information can be obtained.

It was hypothesized that besides differences, the two cases at different developmental stages might also exhibit some similarities in what and how they learn in teaching and would produce a comparatively overall picture of the phenomenon being explored.

Both teachers were recommended by their leaders because of their widely acknowledged teaching effectiveness and extraordinary commitment to the profession. Besides, Clara is the chief of the English Majors Office and has been working at this post for about three years.

While the research was done, Kate was teaching two courses, Intensive Reading and Listening Comprehension, to the first-year students majoring in Communication, and Clara was teaching second-year English majors the compulsory course Comprehensive English and the elective course of European Culture.

The following chart presents a detailed description of the information of the two participant teachers.

**TABLE 1**  
**The Personal Information of the Participant Teachers**

Names	Gender	Period of Teaching	Academic Degree	Professional Title
Kate	Female	4 years	Master (on work)	Lecturer
Clara	Female	14 years	Master	Associate professor

## **Data Collection**

In order to get a fuller view of the phenomenon of teacher learning in classroom teaching, multiple sources of evidence were used for the present study.

### *Lesson Plans*

The teaching plans of each participant teacher during the research period were collected and used as a baseline against which we can examine what actually teachers do in classes. Do teachers carry out exactly what they have planned? Are there any deviations from the plans? If there are, what are the reasons? Do the deviations trigger the occurrence of teacher learning?

Totally 18 pieces of lesson plans by Kate and 36 pieces by Clara were collected as the data. All the lesson plans were labeled according to the name of the teacher and the date the lesson was delivered. For instance, if it was a lesson plan written by Clara for the class of March 10, it was labeled as 'Clara-LP080310', with the letters LP standing for 'lesson plan'.

### *Teaching Journals*

Each of the participant teachers were asked to keep teaching journals to describe the process they prepare for, conduct and reflect upon their teaching.

The teaching journal is a powerful tool for teachers to explore, analyze and reflect upon their teaching. The use of this instrument provided an access into the thoughts and decision-makings of teachers and a further probe into their learning process.

For convenience and better expression of their thoughts, the two participant teachers were asked to write their lesson plans and teaching journal in their mother tongue Chinese. Totally 18 pieces of teaching journals by Kate and 36 pieces by Clara were collected as the data (the two teachers were asked to keep teaching journals even when their classes were not

recorded). All the teaching journals were labeled according to the name of the teacher and the date the journal was produced. For instance, if it was a teaching journal written by Kate on April 28, it was labeled as 'Kate-TJ080428', with the letters TJ standing for 'teaching journal'.

### *Classroom Observation*

For comparison, Kate's Intensive Reading classes and Clara's Comprehensive English classes were chosen as the focus of observation.

Totally four months' observations and recordings of the two participant teachers' classroom teaching were done to examine how they conducted their teaching: how they organized the content and procedures of the lesson, how they organized and managed the classroom tasks, how they engaged the students, how they made use of the materials and resources at hand, and so on. The observations were conducted by referring to the lesson plans to see whether the teachers carried out their plans to the dot, or departed from the plans. If there were any departures, what caused them?

Kate had four hours' Intensive Reading classes per week, while Clara had six hours' Comprehensive English classes per week, and the observations and recordings were made alternatively by week. Except drop-outs due to the holidays such as the May 1 Day, the Dragon Boat Festival and the Clear Brightness Festival, and also the routine Spring Sports Meeting of the University, totally 12 times, 24 hours' Intensive Reading classes of Kate were recorded and 17 times, 34 hours' Comprehensive English classes of Clara.

All the video recordings were burned into discs and the discs were then labeled in accordance with the name of the teacher and the date when they were produced. For instance, if it was a recording of Kate's classroom teaching on the day May 15, it was labeled as 'Kate-VR080515', with the letters VR standing for 'video recordings'.

### *Stimulated Recalls*

It is difficult to disclose covert teacher's mental processes involved in teaching because the nature of professional knowledge is tacit and implicit within the teaching act. However, stimulated recall can give us a glimpse into the beliefs and thoughts of the participant teachers and how these beliefs and thoughts guide their teaching.

Shortly after each session of observation, the participant teachers were asked to do stimulated recall while watching the video tapes of their classroom teaching. The purpose of this was to examine what knowledge and beliefs they hold when they teach, why they respond to and solve the problems in a certain way, and how they reflect upon and evaluate the effectiveness of their teaching.

The teachers' verbal recollections were recorded into a Sony recorder stick for later transcription and analysis. 29 sessions of stimulated recall in total were conducted, with Kate 12 times and Clara 17 times, corresponding to the numbers of classroom recordings.

### *In-Depth Interviews*

In-depth interview designed in this study intended to uncover the participant teachers' perceptions about their practice and their professional development; it provided shortcuts to identify relevant sources of evidence.

First, the researcher interviewed the participant teachers at the outset of the research period to get the initial profile of their educational background, learning experiences and teaching beliefs, etc. At the end of the research period the participant teachers were interviewed again to see whether any changes had happened in the participant teachers' beliefs and views, and if any, what they are.

### *Narrative Inquiries*

Narrative inquiry is a comparatively newly invented methodology proposed by

Clandinin and Connelly (2000). The participant teachers were asked to do narrative inquiry both before and after each observation session to see how the happenings in their daily lives at the dimensions of temporality, sociality and place might affect their teaching and learning.

Data of this source help identify those contextual factors that might facilitate or constrain teachers' learning, and provide a fresh and special outlook into the phenomenon.

The stimulated recalls, interviews and narrative inquiries were conducted in Chinese for better communication between the researcher and the participant teachers, and after all the verbal data were transcribed verbatim into Chinese by the researcher, they were returned back to the two participant teachers to check whether there was any missing information or misunderstandings. The transcribed verbal data were labeled according to its data type, name of the teacher and the date when it was produced. For instance, if it was a stimulated recall by Clara on April 9, it was labeled as 'Clara-SR080409', with the letters SR standing for 'stimulated recall'. Totally there are four pieces of transcribed in-depth interview since four interviews were conducted, with one interview before observation and one interview after observation for each teacher, and therefore, for example, one piece of interview transcription was labeled as 'Kate-IBO' or 'Kate-IAO', with the letters IBO standing for 'interview before observation' and IAO 'interview after observation'. For narrative inquiry data, it was labeled, for example, as 'Clara-NI080604', with the letters NI standing for 'narrative inquiry'. The labeling of all the data was shown in the following table:

**TABLE 2**  
**The Labeling of the Data**

	In-depth Interviews	Fieldnotes (with dates)	Stimulated Recalls (with dates)	Lesson Plans (with dates)	Teaching Journals (with dates)	Narrative Inquiry (with dates)
Kate	Kate-IBO Kate-IAO	Kate-FN	Kate-SR	Kate-LP	Kate-TJ	Kate-NI
Clara	Clara-IBO Clara-IAO	Clara-FN	Clara-SR	Clara-LP	Clara-TJ	Clara-NI

## Data Analysis

### *Qualitative Analysis*

All the data collected were analyzed first qualitatively and then quantitatively.

The qualitative analysis of the data was done jointly by the researcher and an EFL expert, who has about 20 years' EFL teaching experience and is one mid-level leader in the university, quite experienced in administrating and executing programs of teacher professional development.

The five-step procedure of data analysis in Gatbonton's study (1999) was referred to and on the basis of it a three-step method was worked out for the data analysis of the present study.

*Segmentation and labeling.* The researcher and the expert first jointly examined a transcribed segment of one teacher's transcribed stimulated recall in order to come to an agreement about the units of analysis and labels to be used. For illustrative purposes, some data segments are presented below (translated by the researcher from Chinese).

When I prepared for the lesson, I referred to the *Teacher's Book*, *Longman Dictionary of Contemporary English* and Internet.

When I referred to these sources I learned

- 1) what 'Zimmerman Note' is and its functions in World War Two<sup>1</sup>;
- 2) the contributions of the American President Woodrow Wilson to the War<sup>2</sup>; and
- 3) the third meaning of the word 'emerge', 'to come out of a difficult experience', and got an example sentence, 'She emerged from the divorce a stronger person'<sup>3</sup>.

(Clara-LP080310)

For the lesson plans, the researcher and the expert arrived at a simple system for sorting out the evidence indicating the gains in the teacher's knowledge when she was doing the lesson preparation, for example, Cultural Knowledge (1) and (2), and Vocabulary Knowledge (3).

This student is agreeable and cute<sup>1</sup>. His English is not good enough, but he likes it and usually engages himself actively in the study of English<sup>2</sup>. He has many problems with his English listening comprehension<sup>3</sup>, so I think he did not give a correct answer to my question, not because he did not understand the passage but because he did not understand my question. Therefore I asked him to translate my question into Chinese<sup>4</sup>. (Kate-SR080403)

For stimulated recall, both the researcher and the expert agreed upon a system for segmenting the transcriptions into small units indicating the teacher's thoughts, knowledge or beliefs, for example in the above transcribed piece, Know Student's Personality (1), Know Student's Learning (2), Know Student's Problem (3), and Teaching Skill (4).

The task of 'Ordering the passage' suits the students' proficiency level<sup>1</sup>. This activity was seldom done before, so at the beginning the students did not know how to do it properly<sup>2</sup>. With my explanations and suggestions<sup>3</sup>, the students finally learned how to order the passage in a successful way<sup>4</sup>. I think this activity can raise students' awareness of the cohesive and coherent relations between sentences in a passage and cultivate students' ability of structuring passage logically. This will be helpful for their reading and writing competence<sup>5</sup>. (Clara-TJ080411)

For the teaching journals, the researcher and the expert tries to find out those thought units indicating the teacher's reflection on her teaching and gains in knowledge or changes in beliefs, for example, in the above journal piece, Suit Students' Level (1), Know Students' Problem (2), Teaching Skill (3), Student Progress Check (4), and Beliefs (5).

*Categorization.* After the segmentation and labeling of the raw data were done, the researcher and the expert organized these units into categories based on shared themes. Thus all the units describing the teachers' knowledge of cultural information, vocabulary or grammar were further categorized as **Subject Matter Knowledge**; those units indicating teachers'

knowing about students' personality, problems or needs were further categorized as **Knowledge of Students**; and the units in the chunk of teaching journal describing the teacher's reflection on the task she designed were categorized as Task Design, under the larger umbrella category **General Pedagogical Knowledge**, which includes such sub-categories as Time Control, Discipline Students, Task Design, Difficulty Reduce, Content Plan, Interest Raise, Engage Students, Instructional Flexibility, Use of Realia. Other umbrella categories that were defined are **Pedagogical Content Knowledge**, **Knowledge of Context** (including the factors of educational policies, curriculum, schools and families), **Others** (including those thoughts that were difficult to be collapsed into any of the above categories, such as past experience, learning strategies, affections, etc.).

*Data Selection.* Since the purpose of the present study was to examine teacher learning in classroom teaching, it was imperative to limit the data only to reported thoughts that indicates 1) the occurrence of learning, 2) the results of learning (i.e. gains in teachers' knowledge or changes in teachers' beliefs), and 3) the factors that might affect this learning.

#### *Quantitative Analysis*

While the qualitative analysis made it possible to categorize the data systematically, a quantitative analysis of the resulting categories was necessary to determine if statistically reliable patterns had emerged. For this purpose, a count was done of how frequently the categories occurred in each of the participant teacher's data and in the data of the two teachers as a group. These frequency figures made it possible to determine the defined categories ranked in frequency of occurrence in the teachers' data and whether there were consistent patterns in these rankings across teachers.

## **RESULTS AND DISCUSSIONS**

The systematically processed data was further analyzed based on the four

research questions and the following findings were obtained.

***Question 1: Do The Teachers Learn in Classroom Teaching? if Yes, WHAT do they Learn?***

Data derived from the lesson plans, stimulated recalls and teaching journals proved that there were gains and changes in the two teachers' pedagogical knowledge and beliefs, and some improved teaching behaviors resulted from these gains and changes. Changes in knowledge, beliefs or behaviors are recognized as the occurrence of learning, therefore, a conclusion can be safely made that the two teachers did learn in their classroom teaching.

For example, in the stimulated recall on April 21, Kate talked about how she organized group discussion in classroom:

R (researcher): After you finished the explanation of paragraph 8, you asked students to discuss in groups the two topics you provided, *Peace on earth begins at home* and *How to refuse to be a passive smoker*? How do you think of your organization of this activity?

K (Kate): I think this activity was not successfully organized as I had expected before class. First, some students belonging to the same group sat separately today and made it inconvenient to discuss with each other. Second, when I walked around the classroom I found some students were not discussing with other group members; they were just busy writing down something. This was against the purpose of this activity, you know, to practice their oral English. I also found some students were not discussing the two topics I gave them; instead, they were talking about some other irrelevant stuff. As a result, when I asked them to come to the front to present their ideas, they obviously did not do a good work. So, I think, for this activity, most of the students did not work as well as I had expected. Maybe it was not interesting enough to engage them.

(Kate-SR080421)

Later in her teaching journal Kate reflected on this activity:

I felt that the students were not interested enough in the discussion on *Peace on earth begins at home*. After class I asked several students about the reason, they said that the topic was a little difficult for them and they did not know how to start it. This indicates that I did not consider the difficulty the student might have when I designed this activity. It would have been better if I had told them that the discussion might be started from the perspectives of women's social status or family violence.(Kate-TJ080414)

From these two pieces of data it was easy to detect the occurrence of Kate's learning. First, Kate evaluated the activity: *not successfully organized*; then she analyzed the reason: *the topics were too difficult for the students*; finally, Kate proposed solutions: *consider the difficulty the students may have when designing activities and provide students with some help when necessary*. This thinking process exhibits a change in Kate's knowledge about how to design and carry out tasks in classroom teaching.

Take as another example Clara's stimulated recall on March 26, in which she talked about how she finally changed the content of her teaching on that day:

- R: When I read your lesson plan, I found that you originally planned to do the analysis of the theme of the text after you finish the explanation of the whole text. That will be on the next time. But actually you did it today, before you got to the detailed study of the text. Why did you do this change?
- C: When I prepared for this lesson, I found the theme of the text was quite hard for the students to tell, so I decided to do it after I finish the explanation of the text. But in class, when we did the part of *Pre-reading Questions*, I came to realize that the students understood the text very well, and I thought they could work out the theme of the text. So I finally decided to do it today, not wait until next time.(Clara-SR080326)

Clara changed her lesson content by doing the theme analysis in advance due to her recognition about the progress of the students. From this teaching incident Clara learned how to check the students' progress and adjust her lesson content accordingly. This incident also indicates that besides the gain in knowledge, Clara changed her teaching behavior as well by doing the theme analysis task before getting down to the detailed study of the text.

With the analysis going further, significant findings constantly surfaced from the data indicating gains in the two teachers' pedagogical knowledge and changes in their teaching beliefs and behaviors. Data from the in-depth interviews further supported these findings.

I think an obvious change is that I have improved my ability of managing the classroom. For example, in the past, if some students were late for class, my teaching would be affected a lot because I couldn't concentrate on the lesson for a few minutes. But now I can deal with this problem calmly and appropriately. On the other hand, I have expanded the horizon of my teaching and can employ diverse means of delivering lesson content and organizing activities. ... Also, I have made a big progress in communicating with my students. ... (Kate-IAO)

I think experience is accumulated in yearly practice of teaching. When I accomplish one semester's work my teaching competence will surely be strengthened. For instance, this semester I have developed new understandings of the structure and content of the text book, *Contemporary College English, Book IV*. As to the students, I have learned more about the students' characters, interests, learning styles, etc. In addition, I have improved my ability of controlling classroom time, by planning a lesson more specifically and distributing time more scientifically. ... (Clara-IAO)

The quantitative analysis of the data helped the researcher get 221 thought units in Kate's data indicating gains or changes in her pedagogical knowledge or beliefs, and for Clara, the number was 302. After grouping these thought units into different categories of knowledge, the researcher got

the frequency and percentage of each category, presented in Table 3.

**TABLE 3**  
**The Frequency And Percentage Of The Reported Knowledge Categories**

Teachers	Categories					
	Subject Matter Knowledge	Pedagogical Content Knowledge	General Pedagogical Knowledge	Knowledge of Students	Knowledge of Context	Others
Kate	37 (17%)	13 (6%)	102 (46%)	47 (21%)	12 (5%)	10 (5%)
Clara	27 (9%)	20 (7%)	145 (48%)	59 (19%)	37 (12%)	14 (5%)

From Table 3 we can see a salient shared commonality between the two teachers: they reported greatest gains in their General Pedagogical Knowledge, which supports the findings of other researchers that teachers' practical knowledge is chiefly derived and developed from the practice of teaching (Freeman & Johnson, 1998; Golombek, 1998; Johnson, 1996; Richards & Farrel, 2005). The two above-mentioned examples (Kate-SR080421 and Clara-SR080326) exhibit the two teachers' learning of this category of knowledge, with the first one concerning how to design and organize classroom tasks, and the second how to adjust teaching content based on students' progress.

Knowledge of Students is very important for teachers because it helps them make better decisions about what and how to teach. Kate and Clara reported great gains in their Knowledge of Students when they interacted with their students in classroom teaching. For instance, during the classroom teaching on April 14, Kate came to know the difficulties that the students had in vocabulary study when she dealt with the new words of the lesson:

R: During the second period you spent 5 minutes explaining the new words in the glossary, and then you gave students 5 minutes to memorize these new words. After that you asked the students to do the vocabulary exercise of 'Choosing the proper word to complete the following sentences'. Is this the usual procedure by which you deal with word study?

K: Yes, most of the times I do it in this way. When I prepared for the lesson I separated all the words in the glossary into two groups. One group includes

those important words that need detailed explanation; and the other group includes the words that are comparatively simpler and do not require much study. After this I usually ask the students to do the related vocabulary exercises so that the effect of ‘striking the iron when it is hot’ could be achieved. (Kate-SR080414)

In the teaching journal Kate reflected on the word study part of that day:

When the students did the vocabulary exercise, I found that they did not have a good mastery of the new words, especially about the speech of the words. This indicates that the students have not recognized the importance of word speech and are still accustomed to memorizing the spelling and meaning. Besides, the students have not learned the skills to do the exercise of choosing proper words to complete sentences, and thus made many mistakes. Therefore I should give them more instructions about how to learn and use words in the future teaching.

(Kate-TJ080414)

In the above reflection Kate came to know about the problems that her students had in word study, such as ignoring word speech and lacking skills to do vocabulary exercises. Based on this awareness, Kate decided to give students more instruction on word study and use in the future teaching.

Besides General Pedagogical Knowledge and Knowledge of Students, Kate and Clara also reported great changes in their Subject Matter Knowledge. The repertoire of subject matter knowledge, including vocabulary, grammar and culture etc., is beyond the possibility of grasp at one try of learning. What teachers have learned as students in their school study is only a small proportion of this repertoire. Therefore the only means of approaching that body of knowledge is to develop it in practice.

### ***Question 2: HOW do the Teachers Learn in Classroom Teaching?***

Classroom teaching is not an isolated practice but involves pre-class

preparation and sometimes post-class reflection. Data from lesson plans, stimulated recalls and teaching journals indicated that the two teachers learned not only in-class teaching, but also during pre-class preparation and post-class reflection. In course of lesson preparation, Kate and Clara accumulated new subject matter knowledge when they found deficiencies in their existing knowledge base.

When I designed the lead-in activity I listed some words that the students might use. I referred to the *New Century Chinese English Dictionary* and learned a new word meaning ‘waste water’, effluent, and expressions such as ‘effluent disposal or treatment’. (Kate-LP080331)

By surfing on the Internet, I learned about the American famous novelist Alan Paton and his novel *Cry, the Beloved Country*. More importantly, in the past I just had a general idea about racial segregation, and now I learned about lots of historical facts about this phenomenon. This is a learning resulting in an evident big gain in my knowledge. (Clara-LP080325)

The post-class reflection is even more important for the two teachers’ learning, because it is during reflection that they grew awareness of the strengths or weaknesses in their teaching and developed new insights and beliefs, which further guide their teaching in a more powerful way. Take as examples Clara and Kate’s teaching journals of March 31.

The classroom atmosphere was quite good today. The students were cooperative, actively engaged in every activity. But there was one weak point. I planned to help the students understand better the implicated main idea of paragraph 70 of the text, but they seemed at lost on my inspirational questions and clues. To save time, I had to finish this part hastily. This made me realize that I should learn more about how to question and inspire students. (Clara-TJ080331)

The students were not actively engaged in the warm-up activity. The reason might be that they know little vocabulary about environmental pollution and protection,

so they could not express their ideas freely. To solve this problem I decided to ask the students to do group discussion and teacher-students discussion. When the students had difficulties in expressing themselves, they were allowed to use Chinese. I have learned from this practice that if the topic of a lesson unit is too specialized, I should assign the students to prepare themselves with necessary vocabulary before class, so that they will have less difficulty in class and the teaching effect might be improved. (Kate-TJ080331)

In the above two journals, both Clara and Kate exhibited a process of reflection involving evaluation, analysis and revelation. First, they evaluated their teaching and the students' learning of the day. If there was any problem, they tried to analyze the problem and find out the reasons. Based on the analysis, they obtained some revelations for future teaching.

***Question 3: What are the CONTEXTUAL FACTORS that Might Facilitate or Constrain this Learning? And How?***

Teaching is by nature a social event through which teachers interact with various contexts, the classroom, institute and society. Therefore teachers' professional activities, including their professional learning, are inevitably under the influence of these contextual factors. Analysis of the narrative data, triangulated with the data from in-depth interviews and teaching journals, disclosed an evident trend that the two teachers' learning in classroom teaching was much affected by the contextual factors such as students, curriculum and educational policies.

Classroom is the immediate context in which teachers have dialectal relations chiefly with students. In the previous part we have talked about the two teachers' gains in their Knowledge of Students during classroom teaching, that is to say, students are what teachers are supposed to learn about. While examined from another perspective, students were also factors that affected their learning. For example, during the classroom teaching on June 2, the students' response made Clara recognize that in language learning there is

no absolute answer to some questions; different people may have different understanding.

R: There is a sentence in paragraph 11, “Praise God, they resist, they resist”. You asked the students what the pronoun ‘they’ refers to, but the first two students failed to give the right answer. What did you think at that time?

C: Well, when I asked the second student, the girl, she said it refers to ‘soldiers’. At first I thought she got the right answer, but later when asked further, she said it refers to ‘enemy soldiers’. To be honest, this was a little out of my expectation. How could she arrive at such a conclusion? But after a while of thinking, I realized that she might be correct. Our soldiers resist, but the enemy soldiers also resist. So it was acceptable if the pronoun ‘they’ was understood as referring to ‘enemy soldiers.’ (Clara-SR080602)

Later in the teaching journal Clara reflected on this incident and got the following understandings:

When I did the detailed explanation of paragraph 2, I asked students what ‘they’ refers to. The second student thought it was ‘enemy soldiers’. I finally gave an affirmative comment on her answer. I told the students that in language learning there is no definite answer sometimes, and different people may have different understandings about the same question. I hope this could encourage them to think independently. (Clara-TJ-080602)

In this incident the student’s response made Clara realize that in language learning there is no exclusively right answer, and students should be encouraged to think independently and have their own understandings. This “insight” was obtained from the interactions with the students, therefore, students is one of the contextual factors that help teachers learn.

Besides students, curriculum is what teachers interact frequently in classroom teaching. Every teacher is expected to conduct their teaching according to the requirements of the curriculum, including what is to teach, at

what pace, and what goal to achieve. Teachers' thinking and decisions are much affected by these factors, and in this way teachers learn how to establish a harmonious dialectal relationship with curriculum. For example, in the classroom teaching of March 17, Kate thought about the tight class hour and changed her requirements on the students.

R: You asked the students to discuss the question on page 95, and after a while you reminded them that they should do it cooperatively. Why did you say this? Were you aware of any problem?

C: Yes, the time, not much time left. I thought if they could do it cooperatively, each student only needed to finish one or two questions. That would save much more time than one student doing all the six questions. I was a little afraid that if I could not finish the planned content, the following teaching pace would be disturbed. (Clara-SR080317)

Admittedly, teachers' knowledge and skills of how to distribute and control class time are thus acquired and developed in everyday's classroom teaching practice.

From Kate and Clara's data the researcher found another contextual factor that affected their teaching and learning, the educational policies. In China all the English majors are required to pass the national examination of TEM 4 (Test for English Majors, Band 4), and all the non-English majors are required to pass CET 4 (College English Test, Band 4). These requirements inevitably affect teachers' teaching because one of the goals of English education at tertiary level is to help students pass these national examinations. The passage rate has even become a criterion to evaluate teachers' teaching effectiveness. This exerts great pressure on teachers, and understandably they sometimes involve these factors in their lesson plan. For example, in Clara's lesson plan of June 6, she reported that:

The detailed study of the text has been finished, and tomorrow we will finish the exercises. After that I will give students a quiz which includes dictation of new

words and of a passage. For the passage dictation, I will do it in accordance with the requirements of TEM 4. (Clara-LP080606)

In the following stimulated recall, Clara explained:

R: The following part of the quiz was dictation of a passage. You read four times to the students. Why?

C: Because it is the requirement of TEM 4. There is a spot dictation in TEM 4. The passage will be read four times, with the first time at the normal speed for students to understand, the second and the third times sentence by sentence, phrase by phrase for students to write down, and the fourth time at normal speed again for students to check their answer. Therefore I intentionally train my students in this way. (Clara-SR080606)

A competent teacher will constantly update his or her knowledge of students, curriculum and educational policies. This is why Shulman (1987) included these three categories of knowledge as important components in his teacher knowledge base. These contextual factors are not only what teachers are supposed to learn about, in order to make reasonable professional decisions, but also factors that affect teachers' learning by means of affecting teachers' professional decisions.

#### ***Question 4: What is the SHARED PATTERN of Teacher Learning in Classroom Teaching?***

Last but not least unimportant, a comparison is necessary to make between the two teachers, with the purpose of finding a shared pattern of teacher learning in classroom teaching.

Firstly, professional learning did occur in both Kate and Clara's practice of classroom teaching. This learning was chiefly triggered when they noticed some deficiencies in their knowledge storage, or in the course of classroom interactions with students, especially when some unexpected problem

occurred and challenged the teacher's existing knowledge or competence.

Secondly, in the process of classroom teaching, Kate and Clara developed mostly their General Pedagogical Knowledge, Knowledge of Students and Subject Matter Knowledge.

Thirdly, regarding the research question 'How teachers learn in classroom teaching', the present study found that Kate and Clara learned in course of pre-class preparation, in-class teaching and post-class reflection. This learning was self-directed in pre-class preparation, problem-triggered and student-initiated during in-class teaching. The post-class reflection involves evaluation of teaching, analysis of problems and revelation for future teaching.

As to the fourth question, the present study found that such contextual factors as students, curriculum and educational policies affected the two teachers' learning to different extents.

Based on these findings, a general pattern of teacher learning in classroom teaching can be depicted as follows:

Teacher learning in classroom teaching occurs during pre-class preparation, in-class teaching and post-class reflection, resulting in the growth in teacher's practical knowledge of subject matters, pedagogical skills, students, and contexts, etc., featured as self-directed, problem-triggered, student-initiated and self-reflected, under the influence of such contextual factors as students, curriculum and educational policies.

## **CONCLUSION**

Although researchers have come to an agreement that in contrast to theoretical knowledge, teacher's practical knowledge is chiefly derived and developed in the practice of teaching, little empirical evidence has ever been produced. Employing the method of case study for an intensive investigation into the phenomenon of teacher learning in classroom teaching, this study has arrived at some valuable findings uncovering how teachers grow by

accumulating and developing the knowledge necessary for efficient and effective professional practice.

Some implications derived from the findings of the present study.

First, it is implicative for the teacher education research. The study on teacher knowledge should not be confined to a static description of what knowledge teachers have and how this knowledge informs teaching. What is more important is how teachers acquire this knowledge and how this knowledge is developed in the process of teaching. So it is suggested that researchers invest more interest in a longitudinal investigation into the dynamic features of teachers' knowledge development.

It is also implicative for teachers, especially those who are deeply committed to their professional growth. Many ways of professional growth can be defined, such as joining a professional affiliation, attending conferences, taking advanced programs, etc. All these off-site learning chances are quite beneficial, but not available for every teacher. A good way for teachers to update their practical knowledge is to learn in teaching. The findings of this study present a direction for teachers to develop their professional competence.

Admittedly, the present study has some limitations as well. First, only two teachers were sampled as participants for the study. If more cases, say, four or six at different developmental stages, could be studied, the data would be more encompassing and exhibit a more picturesque view of the phenomenon of teacher learning in classroom teaching.

Secondly, due to the time limitation, the study covered only four months. Since learning is a life-long continuous process, four months' study will not be enough to present a convincing conclusion about the phenomenon under investigation. In the future study, a much longer research period will be better to provide richer data and help us get a better understanding about the phenomenon of teacher learning in classroom teaching.

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