

# Taiwanese Teachers' Beliefs about Professional Growth in Shin-Ju District

Yi-Ching Huang

Department of Applied Foreign Languages

Central Taiwan University of Science and Technology

No.666, Buzih Road, Beitun District, Taichung City 40601, Taiwan (R.O.C.)

Tel: 886-4-2239-1647 #7818 E-mail: [getyiching@yahoo.com](mailto:getyiching@yahoo.com)

## Abstract

The purpose of this study is to identify experienced teachers' perceptions of and beliefs about their professional development; examine experienced teachers' perceptions of their process of learning to teach and forming personal practical theories of teaching, and describe experienced teachers' perceptions of significant experiences in their professional growth and personal development that shaped or influenced their approach to teaching. The experiences serve as a backdrop for understanding teachers' beliefs about their professional growth. This qualitative study selected 10 experienced secondary teachers with more than 15 years of teaching experiences in Shin-Chu District in Taiwan. Data collection techniques include: (1) semi-structured individual interviews; (2) informal observations, interviews, and field notes, and (3) documents and records. The OSR-NUD\*IST qualitative data analysis computer software program was used as the tool for data analysis. The following conclusions were based on the results of the analysis of the data: knowledge about teachers' beliefs about professional development, and knowledge about practice that facilitated teachers' personal development. The emerging concerns and beliefs identified in this study included: (a) beliefs about professional development; (b) beliefs about teachers' learning; (c) beliefs about teachers' role; and (d) teachers' beliefs about curriculum.

**Keywords:** Professional development, Experienced teachers, Learning to teach

## 1. Background

The importance of teacher professional development has become increasingly and noticeably recognized worldwide (e.g. Carnegie Forum, 1986; Holmes Group, 1986; National Commission Teaching and America's Future, 1996, Goals, 2000). Certainly, traditional approaches to professional development have come under strong criticism as being insufficient and inadequate (Guskey & Huberman, 1995; Lieberman, 1995). Owing to their heavy workload, most teachers have little time to pursue their personal professional growth and development. Teachers seem not to have time to examine the ways of their practice in order to improve their teaching and explore new teaching strategies. Rarely do teachers have the opportunity to discuss professional matters with their colleagues or to share classroom experiences. Many teachers also regard professional growth as an additional rather than integral part of their work. They often have difficulty finding authentic goals to stimulate their own professional growth. They get used to teach in the same way without having reflection every day. Therefore, teaching is a kind of routine job for them rather than a mission.

Many teachers seem to forget that they are the primary masters who determine what they want in their teaching journey. This problem may come from a lack of time to reflect on their current practice, to challenge new developments, or to share ideas with their colleagues. The isolation of teachers means that they have few opportunities for interaction and less collaboration. Therefore, teaching tends to be associated with individualism, accomplished typically without benefit of collegial exchange and cooperative planning, and without support for trying alternative practices and directions. A number of researchers (e.g. Dewey, 1964; Feiman-Nemser, 1983; Kennedy, 1991; Wasley, 1991; Whitford, 1994) have argued that this isolation allows teachers to continue teaching without critically examining their practice, to teach as they were taught, to find some techniques that are quickly successful, and to maintain comfortable but not necessarily justified practices throughout their careers. It is critical that professional development enables teachers to examine their teaching practices and personal theories, and to profit from working with others.

In addition, the professional activities in which teachers participate in are typically developed by a central office rather than teacher-developed and based in a school site (Kagan, 1992). Staff development activities primarily consist of teacher workshops with outside speakers disseminating information on irrelevant or disconnected issues (Guskey & Huberman, 1995; Lieberman, 1995). Dass (1998:3) points out that the traditional form of professional development is "everything is packaged into an afternoon, or a full day in-service session which seems to be designed as a quick-fix for teachers' inadequacies and incompetence". In the USA, according to a survey on in-service education for K-12 teachers, Wade (1996) reported that no programs articulated a new vision for professional development. The limitations of this kind of teacher activities include little coherence and relevance to classroom practices, minimal support for implementation of concepts presented, and inadequate follow-up (Howey & Vaughn, 1983; Guskey, 1986; Smylie, 1988; McLaughlin, 1991; Kagan, 1992).

To encourage participation in in-service programmes, teachers are usually rewarded with credits that go toward certificate renewal and/or salary increases based on additional degrees obtained (Clark, 1992). The incentives provided for school teachers often add to the financial burden of the government. What's worse is that many teachers who participate in the professional development programmes, activities, and workshops usually just want to get the rewards and benefits, instead of seeking authentic professional growth.

Moreover, many teachers feel frustrated that even after attending the in-service teachers' development courses, they still feel unable to use the new teaching activities, new curriculum materials, or new knowledge to improve the learning of their students. Sometimes they complain that the knowledge and theories learned from the professional development programmes are too theoretical and not sufficiently practical to their teaching. Many teachers are reluctant to create new knowledge about teaching and learning because it is risky to do educational research for their classroom teaching. As Stevenson (1998: 99) pointed out, the majority of "educational practitioners view research as contributing to the advancement of theory, but not to the improvement of practice". Therefore, many teachers feel a sense of frustration in their attempts to change. This disappointment may lead teachers to have a cynical view of new initiatives and avoid further professional growth.

In-service teachers' development programmes often do not "speak to teacher problems, and when it does, teachers rarely have an opportunity to debate the issues, try them out in practice or modify the recommendations to fit their particular context" (Gitlin & Smyth, 1989, p. 6). It has not been about "helping teachers study their practice and make appropriate change" (Feiman-Nemser, 1983:167). Fullan and Hargreaves (1991) argued that in-service programmes treat teachers as if they should all be the same group or groups according to their response to training.

Teachers are seen as blank slates to implement the prescribed methods, standards, policies and curriculum by outside experts (Schwarz & Alberts, 1998). The implication is that "teaching is often viewed as technical, learning as packaged, and teachers as passive recipients of knowledge" (Lieberman, 1995: 592). Teachers may end up over-depending on higher authorities making decisions for them (Nias, 1993) and so they are reluctant to pursue self-directed professional growth on their own and to view seeking professional growth as their obligation. The role of technician means that teachers only need to be good at prescribed skills (Hyde & Pink, 1992) without encouraging individual professional inquiry and change (Darling-Hammond & Cobb, 1995). This kind of skilled technicians would be unreflective and limited in their ability to make good decisions, to consider their teaching theories and actions, or to alter their actions with self-examination.

Furthermore, few schools are structured to allow teachers to promote their professional growth through methods such as self-evaluation, collegial evaluation or school evaluation activities. Little encouragement is offered for teachers to be reflective about their teaching practice and to engage in critical analysis and evaluation (Howey, 1985; Hyde & Pink, 1992). In fact, critical self-analysis is seen as an admission of weakness and the potential for negative evaluation when asking for help (Weinstein, 1988). Teachers would rather attempt to

maintain an appearance of confidence and remain isolated than ask for any help or information. Little attention is given to the questions of what and how teachers learn from their experiences in the classroom (Little, 1993). It is in need to notice the ways teachers learn from their experiences to further improve their teaching.

### *1.1 Statement of the Problem*

In the researcher's experience, teachers who engage in self-directed learning have been more effective than other teachers in terms of facilitating students' learning. However, as teachers gain experiences, some perceive that there is no need to grow professionally to improve their teaching. In these experienced teachers' perceptions, their teaching experiences are seen as sufficient for them to deal with problems in their classrooms.

Some teachers keep getting better with their teaching experiences, but some do not improve their teaching after years of practice, and remain the same as the way they walked into their first classroom. As a result, "twenty year's experience as a teacher may be nothing more than one year's experience repeated twenty times" (Hargreaves, 1993: 88). No persons are born as professional teachers. Since learning to teach is a personal endeavor, the underlying assumption is learning how to be a teacher rather than learning to do the routine work of a teacher. The premises underlying learning to teach emphasize that a lifelong developmental process are prior experiences influence who we are as developing teachers.

Teachers' prior beliefs and experiences influence what they learn. Their deep-rooted beliefs such as teaching as telling, knowledge as facts, and learning as memorizing (Cohen, 1988) are the obstacles for change unless they learn to teach for understanding. Teachers need to expand their ideas about learning, including what it means to learn, what helps students to learn, and how to know what students are thinking and learning. As Darling-Hammond and Ball (1998) pointed out, teachers not only must deeply face their beliefs about their knowledge of teaching and learning, but also must reflect on their beliefs about students' learning. It is critical for experienced teachers to understand that teacher professional development is the outcome of a complex learning process that is based on continuous reflection on one's everyday experiences in a given context (Calderhead, 1988). It takes time to change beliefs and practice because of much unknown and complexity to learn (Loucks-Horsley, 1999). The quality of continuing professional growth should emphasize how teachers adopt new techniques, activities and materials to fit their own ways based on their experiences and goals. Teachers' professional development will make their teaching more creative, novel and efficient in their continuous reflection. If teachers believe that their professional development plays a role in leading them to grow professionally in their teaching life with continuous reflection, it would be easier for the teachers to examine their teaching practices.

#### *1.1.1 Purpose of the Study*

The purpose of this study was to:

- Identify experienced teachers' perceptions of and beliefs about their professional development;
- Examine experienced teachers' perceptions of their process of learning to teach and

forming personal practical theories of teaching; and  
Describe experienced teachers' perceptions of significant experiences in their professional growth and personal development that shaped or influenced their approach to teaching.

Some writers have argued that teachers should examine the influences of their life experiences on their teaching as they offer both outside and inside school relevant lessons for classroom practices (Buntin, 1998). This study focused on the development of professional life as it is experienced by the teachers themselves. The experiences serve as a background for understanding teachers' beliefs about their professional growth. Self-reflection on teaching experiences encourages teachers to reveal their personal practical theories of pedagogical actions and begin to rethink and reexamine the beliefs behind them. It is like a mirror offering opportunities to help experienced teachers to see and understand their professional teaching knowledge, and to make the invisible aspects of their teaching beliefs more visible. There is a need to focus on studying how teachers engage in self-reflection so that we can improve ways of encouraging and supporting experienced teachers who are pursuing and developing their professional lifelong learning. This development process can empower teachers to help themselves develop as professionals and enhance their professional growth.

## **2. Literature Review**

It is significant to know teachers' perceptions and beliefs in terms of their professional learning. Some researchers indicated that perceptions are the result of prior and present experiences (Nias, 1989; Clark, 1992). A number of studies point out that teachers' beliefs are thought to have a filtering effect on all aspects of teachers' thoughts, judgments, and decisions (Munby, 1982; Clark & Peterson, 1986; Nespor, 1987; Pintrich, 1990; Pajares, 1992; Johnson, 1994; Heck, 2007). What teachers believe and think influence what they teach in classrooms.

Previous studies show that teachers' learning occurs most readily when they have opportunities for active, intellectual engagement, including reflection, participate in learning through sustained collaboration and support, and place their primary focus on content knowledge and pedagogy (Lieberman 1995; Darling-Hammond, 1997). These suggestions have become the foundation for a growing consensus about what constitutes effective professional development that can enhance teachers' learning and practice.

Professional development should involve teachers in the identification of what they need to learn, and in the development of the learning opportunities (Carlisle, Correnti, Phelps, & Zeng, 2009; Miller, Lord, & Dorney, 1994; Borko & Putnam, 1995; Tillema & Imants, 1995). This emphasis promotes educators' motivation and commitment to learn, affirms their strengths and enhances their sense of efficacy (Pink & Hyde, 1992), encourages them to take instructional risks and assume new roles and responsibilities (Barr, Anderson, & Slaybaugh, 1992; Pink, 1992), and increases the possibility that what is learned will be meaningful and relevant to particular contexts and problems (Goldhaber & Anthony, 2007 ; Kukla-Acevedo, 2009). Clearly, professional development is the process of improving teachers' skills and

competencies needed to produce outstanding educational results for students. Teachers are becoming recognized as the centerpiece of educational change, active and powerful change agents who have the power to make a difference individually and collectively.

However, if teachers have no commitment to pursue their professional development, any professional development activities could not develop their functions. Teachers should be committed to take charge of what they do, including accountability for themselves and others. They must see themselves as learners, working continuously to develop new understanding and improve their practice through different ways such as reading professional literature, participating in study groups, and peer coaching. Teachers should be willing to continuously reflect on their teaching practice to make their teaching more effective and make them as better professionals. This is an ongoing development process throughout the teaching career and is not limited in student teachers' learning in teacher education programmes. Since it is lifelong development, it helps teachers to examine and discover their best teaching style through inquiry and reflection. If teachers "developed methods of professional inquiry, articulated ways of knowing, and determined standards for knowledge in practice" (Ball & Cohen, 1999:16), they would have powerful interpretation to improve their teaching and learning. However, according to Garet et al. (2001), little direct evidence on the extent to which professional development activities relate to positive outcomes for teachers and students.

These notions mentioned above connected to this study with the assumption that the beliefs of professional development held by teachers are not dependent on their position or role in the education system, but on how they view the purpose of professional development and its relationship to practice (Stevenson, 1998). The researcher of this study was interested in examining such questions as: (1) How does the process of teacher professional growth actually occur? (2) What types of professional experiences do teachers perceive to have the most significant impact on their beliefs and teaching practices? (3) Do the perceptions and beliefs of teachers continue to evolve, and are their actions continuously reinterpreted as their teaching experiences increase? The present study attempted to answer these questions by examining experienced teachers' perceptions of and beliefs about their professional development. The central research question is:

- What are the beliefs of experienced teachers about their own professional development?

### **3. Methods**

In this study, a qualitative case study methodology was used to gather data from the perspectives of the participants involved. The researcher investigated the perceptions of Taiwanese teachers about their professional development. Specifically, this inquiry examined the extent to which and the way in which these Taiwanese educators perceive that contributes to their professional growth, and how their beliefs influence their teaching practice. This qualitative study focused on insight, discovery, and understanding rather than hypotheses testing. It allowed the researcher to get close to the participants in the settings in which they work and provide a rich source of data in order to answer the research questions.

### 3.1 Participants

10 experienced secondary teachers at five different schools with more than 15 years of teaching experiences in Shin-Chu District were selected for this study. Five male teachers and five female teachers were included. The names May, Michael, John, Brian, David, Angel, Emily, Vivian, Martin, and Lisa were pseudonyms used to maintain the participants' anonymity. As shown in Table 1, the years of teaching experience of the ten participants ranged from fifteen years to thirty years. All of them were interviewed. The interviews were audio taped and transcribed into Chinese and then translated into English.

Table 1. Description of the Participants

<b>Participant</b>	<b>Subject</b>	<b>School</b>	<b>Gender</b>	<b>Number of years of Teaching Experience</b>
May	Chinese	Shin-Zu Senior Girl's High School	Female	22
Michael	Chinese	Boy's Senior High School	Male	25
John	Science	Boy's Senior High School	Male	15
Brian	Counselling	Boy's Senior High School	Male	29
Angel	Business	Shu-Gwang Girls' Senior High School	Female	30
Emily	English	Shu-Gwang Girls' High School	Female	24
Martin	English	Syan-san High School	Male	23
Vivian	Chinese	Syan-san High School	Female	24
David	Physics	Gwang-hua Junior High School	Male	24
Lisa	English	Gwang-HUa Junior High School	Female	20

### 3.2 Data Collection Techniques

This study employed a variety of research techniques: (1) semi-structured individual interviews; (2) informal observations, interviews, and field notes, and (3) documents and records. These multiple methods of data collection assisted the researcher to triangulate the data and provide more reliable analysis.

### 3.2.1 Semi-Structured Individual Interviews

Semi-structured individual interviews of the selected teachers were the primary source of data collection in this study. The advantage of the semi-structured interviews is that the interviewer is in control of the process of obtaining information from the interviewees, but is also free to follow leads as they arise. Patton (1987) stated that good interview questions should be open-ended, neutral, sensitive and clear to the interviewee in qualitative interviews. He suggested six types of questions that can be asked: those based on behavior or experience, on opinion or value, on feeling, on knowledge, on sensory experience, and those asking about background knowledge. Therefore, questions in teacher interviews were probing questions designed to provide an opportunity for the participants to reflect on and disclose their personal views and feelings about their role as teachers as well as their understanding of their learning and development processes. The questions focused on the following topics:

1. Teachers' conceptualization of professional development.
2. Teachers' personal experience in teaching.
3. Teachers' views concerning their own learning.

Since the purpose of this study was to understand the perceptions and beliefs of Taiwanese teachers about their professional development, the interviews with selected participants are critical and essential to meet this goal. To prepare for these interviews, Patton's (1987) recommendations are used to develop interview protocols for effective interviews. The researcher attempted to be clear in the questioning objectives, to avoid jargon and confusing language, and probe for clarification and elaboration. The following guidelines for conducting an interview suggested by Gall, Borg, and Gall (1996) were observed:

1. The researcher assured the participants of the confidentiality of their responses and asked them to sign the consent form for participation before beginning the interview. The identity of participants remained anonymous and the interview transcripts were identified by a numeric code according to the interview.
2. The researcher explained the potential benefits of the study to the respondents.
3. The researcher understood the importance of allowing the respondent to do most of the talking so that more information is produced.
4. The researcher tried to use a conversational style of language and ask questions that are clear and meaningful to the respondent.
5. The researcher tried to avoid leading, contradicting, or threatening questions.

Although the same framework was used with all participants, the researcher in this study tried to be as open and as sensitive as possible to issues that each participant might raise during the course of interviews. All participants in these research interviews were volunteers. The interviews were audio-recorded and notes were taken during the interviews to promote future questions and clarification. Each interview was transcribed soon after the interview finished. The interviews were conducted at the locations that teachers chose for their convenience. The time for each interview was approximately one hour and followed a planned interview protocol designed by the researcher. The protocol was modified when necessary to expand on areas of interest that are discovered during the interview. The transcriptions of the teacher



interviews were shared and discussed with the interviewees, which served both to clarify any ambiguities and as a member check technique. During the member check, each participant was presented with a transcript of his/her interview and was invited to make comments and any necessary clarifications. This is essential to establish credibility with the respondents and obtain quality data.

### 3.2.2 Informal Interviews and Field Notes

The information obtained through informal observations and interviews is not intended to be a part of the formal data in this study; however, it would allow the researcher to gain a broader perspective of teachers' perspectives about their professional development. Through these informal observations and interviews, the researcher can get first-hand information that cannot be gained from interviews about the dynamics. This process helps develop a deeper level of knowledge and understanding of how teachers pursue their professional development and do teacher reflection. During all informal observations and interviews, field notes were used to record impressions and observations, and identify questions to be explored.

### 3.2.3 Documents and Records

As part of the data collection process, the researcher also collected available documents and records. These include the information about the effective professional development experiences teacher perceive, and documents about their change of their teaching practice.

## 3.3 Data Analysis Techniques

Marshall and Roseman (1995: 111) defined analyzing qualitative data as “the process of bringing order, structure and meaning to the mass of collected data”. Qualitative data analysis is often described a messy and a complex process (Miriam, 1988; Yin, 1989). The study reported is a qualitative case study, which sought to explore how teachers' professional development is enhanced through the process of engaging in systematic inquiry about their practice. In addition, it attempted to investigate how the participating teachers view the impact of their learning upon their students.

The framework of the data analysis in this study followed the criteria suggested by Joyce, Weil and Sowers (1992). To identify and explore critical relationships, , making inferences based on the collected data is important to help the researcher to organize, code, categorize, analyze and interpret the data in a meaningful and logical way. In other words, in order to accomplish the goals of the study, the methods of data analysis included: searching for patterns, themes and ideas in the data; creating coding categories as the patterns emerge; and organizing the data into different categories. By analyzing the data in a structured and meaningful way, the researcher intended to identify relationships, describe new understanding, and discover participants' insights on study groups. In particular, the researcher intended to describe teachers' perceptions and beliefs of their professional and personal growth. Then, the researcher intended to explore the narrated effective experiences of professional development from participants' perspectives. Finally, the researcher also attempted to explore the relationship between teachers' beliefs and perceptions of their professional development and their teaching practice. In the final section of the study, the researcher developed

generalizations about the case in terms of the patterns and how they compare and contrast with the literature.

When individual interviews were completed and transcribed, the information was saved in a separate file for each individual. All data were read, re-read, and analyzed by identifying participants' anonymous name, question number, categories in parenthesis and a sentence, phrase, or text to identify the category. The identified categories with supporting sentence or phrase were then copied directly to a database file created for each individual. All the responses from participants were analyzed for both groups of questions and each question. For example, a group database file was created by combining all participant categories and examples for comparison analysis in order to re-examine all data deeply. This is a way to see more alternative explanations, anomalies, or conclusions by analyzing a group database. This also helped the researcher to add, combine, or eliminate some categories to make the data analysis more coherent with the goal of the study. Each question was also analyzed based on the responses from participants. By analyzing each question from participants, additional categories were compared, contrasted or combined to clearly elicit the development of themes.

The researcher reviewed the data from the various sources looking for instances of teacher learning as professional development. As a result, the following themes emerged which are related to the research questions posed in this study:

1. Exploring teachers' views.
2. The role of feedback in coping with innovation and change.
3. Developing awareness and tolerance toward different perspectives.
4. Strategies to cope with innovation.
5. Developing awareness of own context.

These themes were related to the research questions, which examine how teacher contributed to teachers' learning and professional development.

When the themes were identified, the codes were determined. As the themes were identified, and the coding grew and became more detailed, the codes were compared to discover the focus of the analysis. Carspecken (1996:151) noted, "once you have a thick set of codes you will be in a position to decide how to focus your analysis". Once the results of the preliminary coding process for all participants were merged into the group database, data could be organized in a variety of views. The QSR-NUD\*IST qualitative data analysis computer software program was used as the tool for data analysis.

#### **4. Results and Discussions**

The following conclusions were based on the results of the analysis of the data: knowledge about teachers' beliefs about professional development and knowledge about practice that facilitated teachers' personal development. The emerging concerns and beliefs identified in this study include: (a) beliefs about professional development, (b) beliefs about teachers' learning, (c) beliefs about teachers' role, and (d) teachers' beliefs about curriculum.

The brief explanation about professional development includes effectively reaching teaching goals and promoting teaching efficacy, continuing learning something new to

improve teaching, being able to express to make students learn what you want them to know to promote teaching quality, and making students gain professional knowledge. All of these beliefs from teachers in this study contributed to content knowledge, general pedagogical knowledge, and pedagogical content knowledge. In addition, three characteristics such as teacher learning, teacher change and teacher role revealed from participants lead to teachers' personal practical knowledge (see Appendix 1).

#### *4.1 Beliefs about Professional Development*

When teachers were asked about their definition of professional development, all of the teachers in this study responded that teacher professional development is important for teachers' teaching. All of them reinforced the idea that teachers need to make efforts to enhance their professional development. For example, Michael thought that teacher learning made him effectively reach his teaching goals and promote his teaching efficacy. He believed that this is what professional growth means. He said,

I think that an advanced learning on professional subject is the professional development on biology or earth science. For example, we haven't read about biological technology when we were in college. I learned about that and some teaching ideas through advanced learning. Constructional teaching and creative teaching have basic theories and require some specific tasks; however, we haven't had such training like this in college. Without this training, we certainly treat students in our own way based on our teaching experiences. There might be better approaches we do not know. If we know, the ways would promote our teaching effects. Therefore, as a biology teacher, I call those learning activities which can promote my teaching efficacy and reach my teaching goal as a kind of professional growth.

Lisa mentioned that professional growth can make teachers learn something new to seek without repeating. She believed this positive learning attitude fostered teachers to continue learning something new to increase their teaching efficacy. She thought,

Professional development can make teachers have a clear direction while novice teachers are lack of teaching experiences. Second, to seek something new makes teaching more interesting rather than boring. Sometimes, teaching seems to repeat something if there is no change.

Emily defined professional development as making her teaching better. She said,

I would explain professional development on how to do my job better and better. My teaching should be promoted along with my teaching experiences. So, how to make my teaching make progress and how to polish my professional areas are my perceptions about professional development.

David explained that teachers should pursue their professional knowledge to make teaching

more effective. He mentioned, “Professional knowledge is essential to your teaching, especially when you have to teach students. If you can’t be good at your professional areas, how can you teach?”.

May thought that teachers need to improve pedagogical knowledge to make their teaching more understandable for students. She said,

Although I have taught over twenty years, there is still much for me to learn. I also thought kids nowadays seemed not study hard like before, so it is in need to notice how to make students learn what you want them to know.

Martin mentioned that teaching quality is vital for students’ learning. He thought, “Professional development can promote teaching quality as well as make students receive more professional and correct knowledge.”

All the teachers in this study believed that teachers need to keep learning and pursuing their professional development. They also reported that teacher professional development is important for teachers and students’ learning. Teachers need a deep understanding of the subject matter they teach. If they have in-depth content knowledge such as the structure, patterns and themes of their discipline, they not only have a variety of sources to explain to their students, but also they can build connections to other content areas which makes learning more relevant. The teachers’ report in this study showed that teachers believed content knowledge plays a key role on their teaching. Meanwhile, teachers in this study thought that learning something new is a kind of professional growth which can refresh teachers’ teaching. As the results of this study showed, teachers tend to develop their knowledge of instruction and general pedagogical knowledge appeared in teachers’ beliefs.

Furthermore, as Michael stated, those teachers who can promote teaching efficacy is professionally grown. May also mentioned that she needed to have the ability to make students understand what she wanted them to know. The evidence showed a strong, positive connection between teachers’ subject matter knowledge and students’ learning. Pedagogical content knowledge is “the blending of content and pedagogy into an understanding of how particular topics, problems, or issues are organized, represented, and adapted to the diverse interests and abilities of learners, and presented for instruction” (Shulman, 1986: 8). This appears that pedagogical content knowledge requires teachers to be able to present the content of knowledge using multiple strategies that meet the needs of learners. As the results of the study showed, teachers noticed the purpose for subject matter and the value of understanding knowledge of learners. The teachers in this study focused on students’ understanding rather than the delivery of content.

In summary, the knowledge teachers reported in this study can be viewed as representing a dynamic complex of subject matter knowledge, general pedagogical knowledge, and pedagogical content knowledge. Effective teachers must be able to use what they have learned to facilitate students’ learning because teaching needs to comprehensively apply their knowledge rather than store knowledge (Shulman, 1986; Freeman, 1989). The reported beliefs about professional development suggest that teachers’ learning contributes to their

content knowledge, general pedagogical knowledge, and pedagogical content knowledge.

#### 4.1.1 Beliefs about Teachers' Learning

When teachers in this study were asked how they viewed their learning and what they considered as obstacles to their professional development within the school, all of them believed that they are responsible for their own learning, which should result in continuous efforts. For example, Lisa said,

I ever heard a lecturer said that there is energy water when we learn. Learning is an extra job and we felt happy when we discovered something new. I understand this is the big source of your work or should be the source of happiness because you know something new.

Emily believed that teachers' learning can refine and revise their knowledge and pedagogy. She mentioned "there is something new to seek for professional development, and you won't feel bored when you teach. Sometimes if your teaching becomes inactive, you are repeating your teaching all the time."

According to the interviews of all the participants, professional development is a social science which teachers can learn through the process of investigating what they teach and how they teach. The followings are the examples of teachers' interviews:

"professional knowledge is important, especially when you teach. If you can't do better on your professional areas, how can you teach? (Brain)

"how to make my teaching better and better on professional areas is my explanations of professional development." (Emily)

"I call it professional development for continue learning that can promote my teaching efficacy." (Michael)

"it can promote professional quality and make students learn more professional and correct knowledge." (John)

The responses from the interviews of 15 participants showed that the development of teacher's knowledge about their own practice and the development of their personal knowledge about teaching. Personal development is seen as an important component of professional development (Eraut, 1994). The interviews from 15 participants showed that teachers were aware of their learning and their professional development. May said, "Although I have taught over twenty years, there is still much for me to learn." As Michael reported,

I thought that an advanced learning on professional subject is the professional development on biology or earth science. For example, we haven't read about biology technology when we were in college. I learned about that and some teaching ideas through advanced learning. Constructional teaching and creative teaching have basic theories and require some specific tasks, however, we haven't had such training like this in college. Without this training, we

certainly treat students in our own way based on our teaching experiences. There might be better approaches we do not know. If we know, it would promote our teaching effects. Therefore, as a biology teacher, I call those learning activities which can promote my teaching efficacy and reach my teaching goal as a kind of professional growth.

Emily also focused on her learning to improve her teaching practice. She said,

I remember I learned to use pictures in our teaching from English teaching magazines. Like this, this is good for me to use it in my teaching. This is a good way of avoiding your teaching structured and more practical. I feel good because I can use it. Sometimes, not only kids like more change. We also like something change. If we can use what we've learnt, that is good.

This provides a situation in which teachers can cultivate this learning as a process, whereby they can assess and improve their own methods, knowledge and skills. The involved participants believed that they have to acquire new knowledge by constructing it for themselves to convey to their students. Their perceptions regarding their learning corresponded to the idea of Eraut (1994) that professional development is dependent upon the development of individual's self awareness. The evidence of this study showed that teachers were aware of facilitating their knowledge and skills in order to achieve their professional growth. In this study, the responses from the participants entail discussing ideas and evaluating ideas based on experience. In other words, teachers in this study tend to construct personal knowledge about their teaching practice. According to Eraut (1994), "personal knowledge" is used to describe the personal meanings that an individual constructs as a result of experiences. Namely, teachers in the study showed personal knowledge about their teaching practice. This evidence corresponds to Kagan's study (1992) that a teacher's experience in classrooms grows and forms a highly personalized pedagogy or belief that actually constrains the teacher's perception and behavior. This suggests that when teachers have self-awareness about their teaching, they have personal knowledge to support their professional and personal development. Since self-awareness is an important element for the understanding of both professional and personal development (Eraut, 1994), the evidence of this study reveals a development of teachers' self-awareness for their teaching growth.

#### 4.1.2 Beliefs about Teachers' Role

In this study, teaching experiences provided teachers with an opportunity to explore, implement, and evaluate ideas about teaching. Through teachers' own values, goals, and personal philosophy, teachers in this study constructed their personal knowledge about the teacher's role. As Michael mentioned, the conception of the teacher as a transmitter of knowledge assumes certain expectations from the learners. He further explained that learners are there simply to get the knowledge from the teacher and have little responsibility in the direction that their learning takes place. However, for Michael, this conception changed as he gained more experience in his teaching. He reflected,

When I graduated from school, I thought teachers are responsible for

transmitting knowledge. So I defined myself as a person who teaches biological knowledge. Based on this, I wanted my students to learn biology well. I also spent much time on transmitting life knowledge to students. But, I felt teachers are actually the leaders to students' concepts. Although our thoughts are different, environments changed over time but something won't change such as respect to people and self-confidence. In fact, it is necessary for us to teach these to students to build good base for them. I think that if I am a good leader in terms of biology, what I am supposed to do is to lead them to enter the world of biology rather than transmit specific knowledge. As for life, I lead them to social life models, and how to get used to groups. I think the role of leaders is more appropriate. Therefore, I changed to a leader from a transmitter. Like a bridge between students and society, students and biology, students and nature, students and schools....

Lisa believed that she should treat all students fairly. At the same time, she holds that every student is unique and deserves an education suited to his or her special needs. She mentioned,

Teachers are usually the people who lead students to some key points of direction, not just on textbooks. At least, teachers should collect information to instruct students the point of views around the world, teach students to understand themselves, tell them not to go toward grades, etc. Many students always value themselves by grades, and evaluate which school he/she needs to go based on their grades....I usually told people that if someone wanted to treat you for whatever you eat at one restaurant, but just for one order, which one you would order? Would you order the most expensive one or the one you like? Someone doesn't know what his/her interest is, but he/she can say if you like or dislike. At least, we have to know what we want.

These experienced teachers' interpretation of what it means to be a teacher is interesting. For them, they now have learned that being a teacher is not simply a matter of delivering a syllabus or transmitting what might be called information or knowledge. The intention between treating students as individuals and treating all students alike may cause teachers to disregard or overlook student diversity that is race- or class-related and that reflects social inequities. According to the interviews of the teachers, their understanding of teaching has been changed to include making decision on what to teach, how to pace their teaching and how to respond to students' needs. This aspect of the study corresponds to the study of Carter (1990) that teachers learn to teach as they make sense of and take on the tasks of teaching. When teachers find tasks of teaching they usually do such as teaching lessons or maintaining order common to all classrooms, the meaning individual teachers bring is a function of their unique knowledge and experience.

Furthermore, when teachers act to accomplish tasks of teaching, their understanding of what a given task involves and what it means to accomplish it changes. According to the teachers' perspective in this study, teaching is apparently a moral practice as well as a technical activity, which has implications for thinking about the content of learning to teach. Clearly, the

teachers in this study thought that teaching is not just giving students knowledge and skills, but also the values of learning and what students really need. The teacher perception in this study also corresponds to the idea of Feiman-Nemser (1996) that teachers are expected to develop values, commitments, and images of good teaching except acquiring requisite knowledge and skills.

Through interviews and observations, teachers' views about their role as a teacher and their attitude towards their students' learning have undergone various changes during their teaching profession. The results showed that teachers create their own role within the classroom based on their views of teaching and learning and personal interpretation of what works best for their students. The propositions the experienced teachers showed in this study implied that teachers have developed knowledge of self (Elbaz, 1991) to refine their teaching. Elbaz (1990) defined knowledge of self as an important facet of teachers' practical knowledge. This knowledge includes teachers' awareness of their own values, goals, philosophies, styles and personal characteristics. Namely, this knowledge is more personal and can generate abstract theoretical knowledge about teaching that is filtered through teachers' own values, goals, and personal philosophy. When the three teachers understood that teaching is not just focused on content knowledge but life values such as respect and life, they exemplified the personal and intellectual virtues they sought to cultivate in their students----tolerance and open-mindedness, fairness and justice, respect for human diversity and dignity, the ability to question received wisdom. These personal perspective and experiences create teachers' knowledge of self in this study. For these teachers, the act of reflecting on ourselves, and exploring their values and concepts seems to play a significant part of understanding their roles and hence the way they teach their students as they have progressed through their teaching years.

#### 4.1.3 Beliefs about Teacher Change

Given that the professional context in which teaching practice is perceived to occur, a perspective offers an appealing theory of teacher learning and consequently of teacher change or growth. According to six teachers' experiences, this study finds out that teachers have turned to conceptual change models for insights about the conditions under which people are more likely to change their minds. These teachers considered why new practices and their associated values and beliefs are better than the more conventional approaches. John found that the conceptual change in the relationship between teachers and students is the biggest impact on his teaching. Michael said,

Students and you are actually equal. They just have not learned what they have learned. Maybe they are better than you on computers. For example, I always asked students to do for me as for computers. They made website for me... if I need a chart, students can draw it for me using computers. Actually, students sometimes are your teachers.... The change of interaction and ways between teachers and students resulted from a change of concepts. Before this, you never thought of doing this in this way. This is not difficult, but you never do it. For me, this is the biggest impact on new teaching beliefs, and perceptions of



some roles. What is the interaction between you and your students?

Lisa said that she changed her teaching practice to make students happier rather than asking students more. She said,

I felt that sometimes kids needs a little tolerance because their background is connected to bad behavior they performed. If I have understood this, I might tolerate kids more. If students don't hand in homework or have some serious emotional reaction, I won't rush to punish them but wait for a while. Sometimes, a waiting or a tolerance gives students hope.

The conceptual change makes Lisa change her teaching practice. She said, "I asked students more when I began to teach. But I gradually appreciated that making kids happier would be better for their learning efficiency."

Furthermore, two teachers reported that they must change their attitude to students all the time under realistic conditions. They realized the difference between students' learning attitude and the ways to communicate with students. For example,

David said,

I change every year, especially with students. When I just graduated from school, I viewed myself as kids' friends. In fact, I was really like their brother at that time, but I found something wrong with this. I was still their teacher actually. When I played the role as their friend, students were confused. What is the role of a teacher in their mind? Sometimes, they didn't get it. This was in my twenty ages. I changed the thought when I was 30-35 years old. I thought that I can be their friend in private, after class or off the campus. But as long as I am in classroom, I am a teacher. They are students no mater you like me or not. After class, I welcome students view me as their friend. I am kind of satisfied with this. Now, I am 46 years old. I am changing my attitude...

Brian also said,

I have been thinking how I can teach students to understand. This is important. When I was a beginning teacher, I had no experiences. I have more experiences more now, so I know how to make students learn more efficient. I also felt I made it. However, I changed this belief. I don't think that teachers at cramming schools are not formidable as well as important. I found that although you are good at teaching content knowledge, it is not a big help for kids. Students may read tons of things, and maybe they got high grade at school, and even got good performance in High School Entrance Examination. But I don't know if they can have good future because of what I teach. On the contrary, I think that kids need to think first and know what they want, and then come to me. How to make kids come to talk to you is not easy, because when you ask students if they have any questions about what you teach in classrooms, less than five raise their hands. This is supposed to mean that only

five students have difficulty understanding what I teach in this class. The rest of the students are supposed to understand what I teach. But as a result, only those five students got good grade rather than more than thirty students did. This is what I am concerned. Those who can ask questions really learn something, and those who do not ask questions do not mean that they don't have questions. Part of the reasons is either they might not know how to ask or they know nothing. Therefore, I changed my teaching on leading students to think critically in terms of what I intend to teach during these five years. I don't focus on testing students any more. I found that students won't feel sleepy easily, and are willing to spend time thinking. After this change of teaching, not only five kids can get good grade, but also some students begin to feel interested in this subject. I am proud that this way of leading motivates students to see problems and think questions. I dare predict that these students, by means of this leading, are more likely to have high achievements than those kids in traditional teaching ways in five years because they know how to think. This is the biggest change on my teaching.

Martin also believed that teachers need to respect students' individualism and learn to appreciate their unique differences. He said,

In the past, we emphasized authority, but now you have to learn to respect. This means that you have to tolerate students' differences that you might not stand before. This is one of your professional growth.

From the teachers' report, they need to incorporate their ideas and practices into their teaching to fit in this modern society. The evidence in this study showed that teacher changed their teaching practice for more interactive teaching through conceptual change. This can be classified to "practical" or "classroom knowledge" (Elbaz, 1983; Doyle, 1990) that reveals the complexities and uncertainties of interactive teaching and the need for considerable thinking-in-action (Schon, 1987). Elbaz (1991) also suggested that the form of teacher knowledge is connected to classroom practice. As Michael and Lisa believed, students need more open-mindedness from teachers, so they have to change their classroom practice for students' learning.

Teachers' practical knowledge in this study implied that inside knowledge, that is, knowledge generated by teachers in the context of their work, is essential to really understand teaching, with the intent to use that knowledge to improve classroom practice. Martin also believed that students needed to be cared in accordance with what he did to students.

I tolerate students more. I won't argue with them. If we have misunderstanding in classrooms, I will deal with it in classrooms at that time. I will look back the conflict between the students and I, and I will understand what the student's problem is... as long as you deal with it in an appropriate way, there won't be big problems.

The results of this study correspond to a number of studies (Posner & Strike, 1985) that

changing teachers' beliefs depends on their recognized discrepancies between their own views and those underlying new visions of teaching and learning. Change on human judgment is more likely to occur if alternatives are vivid, concrete, and detailed enough to provide a plausible alternative (Nesbitt & Ross, 1980). The findings of this study indicated that teachers view teaching not only as a process of knowledge transmission, but also as a process of guiding students' learning or a process of developing social relationship.

The evidence of this study indicated that teachers with teaching experiences continually assess and reassess what they are teaching to adjust for the learning styles and background of their students. In this way, teachers' construction of their teaching methods employed constructivist views of the learners.

#### *4.2 Teachers' Beliefs about Curriculum*

Teachers in this study reported that they had a shift in thinking and in teachers' roles and placed greater demands on teachers. However, teachers' beliefs about curriculum are also pivotal in terms of bringing about significant change in teaching in this study. John felt that he had to change his teaching beliefs in terms of students' expectation on learning goals. For example, he said,

In fact, if we just made students do more practices and tests, we couldn't develop our teaching ideas. As long as you talk more about their life, students feel you are talking nothing relevant to their entrance examination. Sometimes, if you want to share one article or knowledge from newspapers in classrooms, students would prefer giving them more time to prepare for their examination.

Angel also reported that students' learning goals focused on examination had made her feel frustrated on teaching. She said,

I feel frustrated that the purpose of my teaching is just on tests. In fact, this is just part of professional development. When you are willing to give them more, students won't be interested. What they care is if the material you are talking is examination content or not. If not, they won't have desire to know it.

Through the interviews, this study found that more than five teachers were limited by constraints which they associated with the inherent nature of both the curriculum and the students. Students' expectation of a central role for teachers as well as concerns about being accountable and progressing with the curriculum limited the teachers' development of a constructivist pedagogy. This result indicated that teacher's positivist epistemology, along with constraints which the teacher associates with students and curriculum policies, limited the adoption of more constructivist beliefs. However, the trend seems to be a big obstacle for teachers to overcome until now. This might need teachers' self-negotiation, and social negotiation among teachers, students and the whole school community to reconstruct teachers' constructivist beliefs.

#### *4.3 The Impact of their Learning and Innovation on Their Students*

When asking further about teachers' teaching practice, the participants began to consider the

importance of assessing their own learning and the impact of their learning and innovation on their students. Five teachers agreed that their learning links to their teaching. Brian believed that learning makes him sustain his belief. For example, Brian said,

I feel that learning can keep me in good condition. I won't feel disappointed or frustrated because of students. Learning makes me believe that teaching is hopeful. Some teachers label students as bad students. I found that some teachers showed their passive and critique attitude on students in terms of their feeling on what they called bad students. This is dangerous for teachers to teach in this way.

Michael mentioned that he changed what he did in classroom through professional development activities. He found that the value of teaching affects teaching strategies. He took teaching biology as an example. He focused more on the content in textbooks such as the function of cells. However, he understood that is the beginning of a life, so he preferred to make a connection with certain events or social case studies to integrate his teaching. Michael said,

For example, I might add some teaching materials about Nano which I learned from one workshop. This is a change of curriculum. However, when you value something different on your teaching, you might change your teaching strategies. In the past, I usually focused on knowledge about biology. So, I spent much time talking about content knowledge to let students clearly understand the function process of cells, and some structures of organic categories. But now I feel this is the moment for life, so I first introduce some social events to lead to my class. For instance, it's raining. Which area of Shin-Chu will happen to mudslide? Why does mudslide happen? Because of slope... Why didn't mudslide happen in the past.... , but now it happens so often? There were trees before, but trees are chopped now... I lead this to my class in this way. Thus, I won't teach students how many kinds of forests there are in Taiwan, but the biological role trees play in this area, something like that. Actually, these things are related each other. The different value decides your teaching design.

Martin reported that he has to learn new English teaching strategies to fit in the society in terms of natural phonics. He thought the change of teaching strategies was professional development. Martin mentioned,

As for English teaching, we usually teach alphabet first and then phonics. After learning all of this, we teach "Good morning!" Then, natural phonics becomes common. If you know nothing about this, you might not learn natural phonics. This is your professional development that enables you to know different teaching skills, change of teaching strategies, or the trend of English teaching..... This is change, and this is what professional development means.

David and Angel changed their teaching behavior through self-learning. They believed that

teachers need to continue learning something new to increase their teaching efficacy. David mentioned,

I read English and Chinese newspapers. Sometimes I also print good articles for students.... You can't just teach from textbooks, and some students will ask relevant questions. If you don't keep learning, you might have problems responding to students' questions. ....I think teaching is continuing learning and accumulation of experiences. What I mean continuing learning includes visible and invisible learning. Invisible learning is you also learn from students in the process of teaching. We might learn that what we can teach to meet students' need. When we talk more, students might not understand. For example, I teach Chemistry, but the student I teach begins to feel afraid of Chemistry instead. This is what I don't expect. This is an invisible learning. Visible learning is through workshops or purposeful arrangement for learning. When we hear something from these workshops, something indeed must be helpful, especially on teaching methods.

Angel thought she can share her learning with her students. She thought,

I learn a lot from Buddhism curriculum. This affects me that when I look back to what I taught before, I appreciate something different. I noticed that when I teach Grade 12, I focused on the content in textbooks rather than active instruction. After a few years' experiences, I can easily make students feel interested by talking about this. This needs personal understanding and experiences.

John reported that teachers can both teach and learn. They can have varied access to learn what they need.

You teach and you learn. Sometimes, you can discuss with colleagues. Sometimes, I learn by attending workshops, and the most important is self-study.

According to these teachers' report, teacher learning affects what they do in the classroom through varies activities such as workshop and/or self-learning. Although teachers in this study agreed the key role teachers' learning played in their teaching, all of them did not have positive feeling on teachers' professional development activities held by the government. They reported that the experts or outside speakers in formal professional development workshops or in-service teachers' programmes usually do not address their needs as they disseminate information that they do not often see as relevant. As Angel said,

Personally, I think some conferences or workshops were just perfunctory so that their curriculum planning is not spectacular. Sometimes, the authorities didn't make complete curriculum design. Because of this, I had no desire to attend workshops. Why? Their schedule won't motivate you to go.

Martin also believed that teachers' professional development programmes such as

conferences do not meet teachers' needs. Michael reported that teacher workshops are not meaningful for teachers. He said, "I think most of the workshops are not meaningful. Most people just go there to socialize with other people." David complained about one workshop he had attended. He said,

Something is not helpful. For example, I was assigned to Chung-yuan University to attend one workshop for six weeks. I thought I might learn how to teach to motivate students' learning interest, and how to improve the relationship between teachers and students from the workshop. But I found that was not what I thought. The instructor just asked us to follow his handouts. There were approximately 40 people there. Eventually, there were just six left, and I was the one of the six people. After the workshop, I got one credit.

Brian thought that teachers' professional development programmes should give time for them to meet on a regular basis, to learn from each other, share ideas, practice English, and support each other. He said,

Some workshops are artificial and meaningless. Some held activities need to be filtered for teachers who are appropriate. Otherwise, many professional development activities were held for finishing some scheduled tasks. Afterwards, people who are in charge of the activities end up filing the results. This way lacks the concept that a seed comes out of the professional training.

In other words, teachers in this study indicated that they want to be involved in deciding what they need to learn and in developing the learning opportunities and the process to be used. As Hodges (1996) argued, this kind of teacher involvement affects teachers' motivation and commitment to learn. In contrast, when teachers lose the authority and autonomy to take charge of their own learning, they are less likely to engage in meaningful learning. Teachers in the study reported that they need the opportunity to practice what they are trying to learn and be able to learn from each other.

Traditional approaches to professional development have come under strong criticism as being ineffective and not providing teachers with sufficient time and activities for the practice of new ideas and skills to increase teachers' pedagogical or pedagogical content knowledge (Loucks-Horsley, Hewson, Love, Stiles, 1998, Garet, et al., 2001, Lieberman, 1995). Thus, it is not surprising that teachers in this study were dissatisfied with the traditional professional development or in-service teachers' programmes they attended as the programmes usually do not address their needs.

At the same time, teachers in this study also do not feel there is strong administrative support from the school. They reported that there has been little support or encouragement from schools from the beginning. They are bothered with some stuff like paperwork and compensating their classes with students when they plan to take leaves to attend professional development activities. They particularly wondered why schools do not encourage teachers to pursue their professional development but ask teachers to do artificial activities for credits.

## 5. Conclusion

This study found that teachers perceived professional development as a kind of learning which can promote their teaching and student learning. According to these teachers, the perceived beliefs about professional development linked to content knowledge, general pedagogical knowledge, and pedagogical content knowledge. Furthermore, the teachers also believed that their teaching experiences make them rethink teachers' learning, teachers' role, and teachers' change. The teaching experiences contribute to form their personal practical knowledge for students' learning and their teaching philosophy.

Furthermore, teachers are dissatisfied with the direction of students' learning that is focused on examination. Students' expectation focused on examination influenced teachers' curriculum planning. This study also found that all the teachers are not satisfied with the professional development programmes held by the government or schools. They expect to have teacher-directed professional development activities to foster their professional growth.

## References

- Ball, D. L., & Cohen, D. K. (1999). Developing practice, developing practitioners: Toward a practice-based theory of professional education. In L. Darling-Hammond. and G. Sykes (Eds.), *Teaching as the learning profession: Handbook of policy and practice*. (pp. 3-32). San Francisco: Jossey-Bass Publishers.
- Barr, R., Anderson, C. S., & Slaybaugh, J. E. (1992). Deliberations about grouping in crete-monee. In W. T. Pink and A. A. Hyde (Eeds.), *Effective staff development for school change* (pp. ?). Norwood, N.J.: Ablex.
- Borko, H., & Putnam, R. T. (1995). Expanding a teacher's knowledge base: A cognitive psychological perspective on professional development. In T. R. Guskey and M. Huberman (Eeds.), *Professional development in education: New paradigms and practices*. (pp. 35-65). New York: Teachers College, Columbia University.
- Borko, H., Wolf, S. A., Simone, G., & Uchiyama, K. P. (2003). Schools in transition: Reform efforts and school capacity in Washington State. *Educational Evaluation and Policy*.
- Bunting, C. (1998). Self-directed teacher growth--- Helping it in schools. *Schools in the Middle*, 8(1), 21-23.
- Butler, J. (1998). Teacher professional development. *Journal of Educational for Teaching*, 18(2), 221-239.
- Calderhead, J. (1988). The development of knowledge structures in learning to teach. In J. Calderhead (Eed.), *Teachers' professional learning* (pp. 51-64). London: Falmer Press.
- Carnegie Forum on Education and the Economy. (1986). *A nation prepared: Teachers for the 21st century*. New York: Author.
- Carspecken, P. F. (1996). *Critical ethnography in educational research*. New York: Routledge.

- Carter, K. (1990). Teachers' knowledge and learning to teach. In W. Houston (Ed.), . *Handbook of research on teacher education* (pp. 291-310). New York: Macmillan.
- Clark, C. M. (1992). Teachers as designers in self-directed professional development. In A. Hargreaves & M. G. Fullan (Eds.), *Understanding teacher development*, (pp. 75-84). New York: Teachers College Press.
- Clark, C. M., & Peterson, P. L. (1986). Teachers' thought processes. In Wittrock, M. C. (Eed.), *Handbook of Research on Teaching*. (pp. 255–296). New York: Macmillan.
- Cohen, D. K. (1988). Teaching practice: Plus ca change. In P.W.Jackson (Ed.), *Contributing to educational change: Perspectives on research and practice* (27084). CA: McCutchan.
- Cole, A. L., & Knowles, J. G. (2000). *Researching teaching: Exploring teacher development through reflexive inquiry*. Needham Heights, MA: Allyn & Bacon.
- Creswell, J. (1998). Qualitative inquiry and research design: Choosing among five traditions. *Thousand Oaks, CA: Sage*.
- D.D. Goldhaber & E.A. Anthony. (2007). Can teacher quality be effectively assessed? *The Review of Economics and Statistics*, 89 (1), pp. 134–150.
- Darling-Hammond, L. (1997). *Doing what matters most: Investing in quality teaching*. New York: National Commission on Teaching & America's Future (0-9654535-3-7).
- Darling-Hammond, L. (1998). Teacher learning that supports student learning. *Educational Leadership*, 55, 6-11.
- Darling-Hammond, L., & Cobb, V. L. (1995). The teaching profession and teacher education in the United States. Teacher preparation and professional development in APEC members: A comparative study. APEC Education Forum, U.S. *Department of Education*, 221-240.
- Dass, P. M. (1998). Professional development of science teachers: Results of using the Iowa Chautauqua Model in Collier County. Paper Presented at the National Association for Research in Science Teaching Annual Meeting, San Diego, California.
- Dewey, J. (1964). The relation of theory to practice in education. In R. D. Archambault (Ed.), *John Dewey on education: Selected writings* (pp. 313-338). Chicago: University of Chicago Press.
- Elbaz, F. (1983). *Teacher thinking: A study of practical knowledge*. London: Croom Helm.
- Elbaz, F. (1990). Knowledge and discourse: The evolution of research on teacher thinking. In C. Day, M. Pope & P. Denicolo (Eds.),. *Insight into teacher's thinking and practice* (pp. ?). London: The Falmer Press.
- Elbaz, F. (1991). Research in teacher knowledge: The evolution of a discourse. *Journal of Curriculum Studies*, 23 (7), pp. 10-18.
- Eraut, M. (1994). *Developing professional knowledge and competence*. London: Falmer Press.



- Feiman-Nemser, S. (1983). Learning to teach. In L. Shulman & G. Skes (Eds.), *Handbook on teaching and policy*, (pp. 150-170). New York: Longman, Inc.
- Feiman-Nemser, S. (1996). *Mentoring: A critical review*. Washington, DC: ERIC Clearinghouse on Teaching and Teacher Education.
- Freeman, D. (1989). Teacher training, development, and decision making: A model of teaching and related strategies for language teacher education. *TESOL Quarterly*, 32, 27-45.
- Fullan, M., & Hargreaves, A. (1992). *Teacher development and educational change*. London: Falmer press.
- Gall, M. D., Borg, W. R., & Gall, J. P. (1996). *Educational research: An introduction*. New York: Longman.
- Garet, S., Porter, A., & Desimone, L. (2001). What makes professional development effective? Results from a national sample of teachers. *American Educational Research Journal*, 38 (4), 915-945.
- Gitlin, A., & Smyth, J. (1989). *Teacher evaluation: Educative alternatives*. New York: The Falmer Press.
- Goals 2000: Educate America Act. (P. L. 103-227). (31 March, 1994). *108 United States Status at Large*, pp. 1-744.
- Guskey, T. (1986). Staff development and the process of teacher change. *Educational Researcher*, 15(5), 5-12.
- Guskey, T. R. (1995). Professional department in education: In search of the optimal mix. In T. R. Guskey and M. Huberman (Eds.), *Professional development in education: New paradigms and practices*. (pp. 114-131). New York: Teacher College, Columbia University.
- Hargreaves, D. H. (1993). A common-sense model of the professional development of teachers. In J. Elliot (Ed.), *Reconstructing teacher education: Teacher development*. (pp. 86-92). London: The Falmer Press.
- Hodges, H. L. B. (1996). Using research to inform practice in urban schools: Ten keys strategies for success. *Educational Policy*, 10 (2), 223-252.
- Holly, M. L. H., & Walley, C. (1989). *Teachers as professionals*. In M. L. Holly, and C. S.
- Howey, K. R. (1985). Six major functions of staff development: An expanded imperative. *Journal of Teacher Education*, 36(1), 58-64.
- Howey, K. R., & Vaughn, J. C. (1983). Current patterns of staff development. In G. A. Griffin (Ed.), *Staff development: Eighty-second yearbook of the national society for the study of education: Part II* (pp. 92-117). Chicago: University of Chicago Press.
- Hyde, A. A., & Pink, W. T. (1992). Thinking about effective staff development. In W. T. Pink & A. A. Hyde (Eds.), *Effective Staff Development for School Change*. (pp. 3-29). Norwood, N. J.: Ablex Pub. Corporation.

- J. Carlisle, R. Correnti, G. Phelps and J. Zeng. (2009). Investigating teachers' knowledge of language structure and its relation to students' reading achievement. *Reading and Writing: An Interdisciplinary Journal*, 22, pp. 457–486.
- Johnson, K. E. (1994). The emerging beliefs and instructional practices of preservice English as a second language teachers. *Teaching & Teacher Education*, 10(4), 439-452.
- Joyce, B., & Showers, B. (1987). *Student achievement through staff development*. New York: Longman.
- Joyce, B., Weil, M., & Sowers, B. (1992). *Models of Teaching* (4th)edition. Boston: Allyn and Bacon.
- Kagan, D. M. (1992). Professional growth among preservice and beginning teachers. *Review of Educational Research*, 62(2), 129-169.
- Kennedy, M. M. (1991). Some surprising findings on how teachers learn to teach. *Educational Leadership*, 49(3), 14-17.
- Lieberman, A. (1995). Practices that support teacher development. *Phi Delta Kappan*, 76(8), 591-596.
- Lieberman, A. (1995). Restructuring schools: The dynamics of changing practice, structure and culture. In A. Lieberman (Ed.), *The work of restructuring schools: Building from the ground up*. (pp. 1-17). New York: Teachers College Press.
- Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. Beverly Hills, CA: Sage.
- Little, J. W. (1993). Teacher professional development in a climate of educational reform. *Educational Education and Policy Analysis*, 15 (2), 129-151.
- Loucks-Horsley, S. (1999). Research on professional development for teachers of Mathematics and Sciences: The state of the scene. *In School Science and Mathematics*, 99 (5), 258-271.
- Marshall, C., & Roserman, G. B. (1995). *Designing qualitative research* (2nd rd edition). Thousand Oaks: California: Sage.
- McLaughlin, M. W. (1991). Enabling professional development: What have we learned? In A. Lieberman & L. Miller (Eds.), *Staff development for education in the '90s: New demands, new realities, new perspectives*, (pp. 61-82). New York: Teachers College Press.
- Mcloughlin. (Eds.1989). *Perspectives on teacher professional development*. (pp. 285-307). New York: Falmer Press.
- Merriam, S. (1988). *Case study research in education: A qualitative approach*. San Francisco: Jossey-Bass.
- Miller, B., Lord, B., & Dorney, J. (1994). *Staff Development for Teachers: A study of configurations and costs in four districts*. Newton, Mass.: Education Development Center.

- Munby, M. (1982). The place of teachers' beliefs in research on teacher thinking and decision making, and an alternative methodology. *In Instructional Science*, 11, 201-225.
- National Commission on Teaching and America's Future (NCTAF). (1996). *What matters most: Teaching for America's future*. New York: Author.
- Nesbitt, R. E., & Ross, I. (1980). *Human inference: Strategies and shortcomings of social judgement*. NJ: Prentice-Hall.
- Nespor, J. (1987). The role of beliefs in the practice teaching. *Curriculum Studies*, 19, 317-328.
- Nias, J. (1989). *Primary teachers talking*. London: Routledge.
- Nias, J. (1993). Changing times, changing identities: Grieving for a lost self. In R. G. Burgess (Eds.), *Educational research and evaluation: For policy and practice?* (pp. 139-156). London: The Falmer Press.
- Pajares, M. F. (1992). Teacher's beliefs and educational research: Cleaning up a messy construct. *Review of Educational Research*, 60 (3). 307-332.
- Patton, M. (1987). *How to use qualitative methods in evaluation*. London: Sage.
- Pink, W. T., & Hyde, A. A. (1992). Doing effective staff development. In W.T. Pink & A. A. Hyde (Eds.), *Effective staff development for school change* (pp. 259-292). Norwood, NJ: Ablex Publishing Corp.
- Pintrich, P. R. (1990). Implications of psychological research on student learning and college teaching for teacher education. In W. R. Houston (Eds.), *Handbook of research on teacher education*, (pp. 826-857). New York: Macmillan.
- Posner, G., & Strike, K. (1985). A conceptual change view of learning and understanding. In L. West & R. Hamilton (Eds.), *Cognitive structure and conceptual change* (pp. 211-232). London: Academic Press.
- R. Heck. (2007). Examining the relationship between teacher quality as an organizational property of schools, and students' achievement and growth rates. *Educational Administration Quarterly*, 43 (4), pp. 399-432.
- S. Kukla-Acevedo. (2009). Do teacher characteristics matter? New results on the effects of teacher preparation on student achievement. *Economics of Education Review*, 28 (1), pp. 49-57.
- Schon, D. A. (1987). *Educating the reflective practitioner*. San Francisco, CA: Jossey Bass.
- Shulman, L. (1986). Paradgims and research programs in the study of teaching: A contemporary perspective. In M.C.Wittrock (Ed.), *Handbook of research on teaching* (. 3rd ed) (pp. 3-36). New York: Macmillan Publishing Co.
- Smylie, M. (1988). The enhancement function of staff development: Organizational and psychological antecedents to individual teacher change. *American Educational Research*

*Journal*, 25(5), 1-30.

Stevenson, R. B. (1998). *Educational practitioners' use of research: Expanding conventional understandings*. In S. Jacobson, C. Emihovich, J. Helfrich, H. Petrie, and R. Research in Education and the National Commission on Teaching and America's Future need to know and be able to do. *Joint publication of the Consortium of Policy*, JRE-04.

Tillema H. H., & Imants, J. G. M. (1995). Training for the professional development of teachers. In T. R. Guskey and M. Huberman (Eds.), *Professional development in education: New paradigms and practices*. New York: Teachers College, Columbia University.

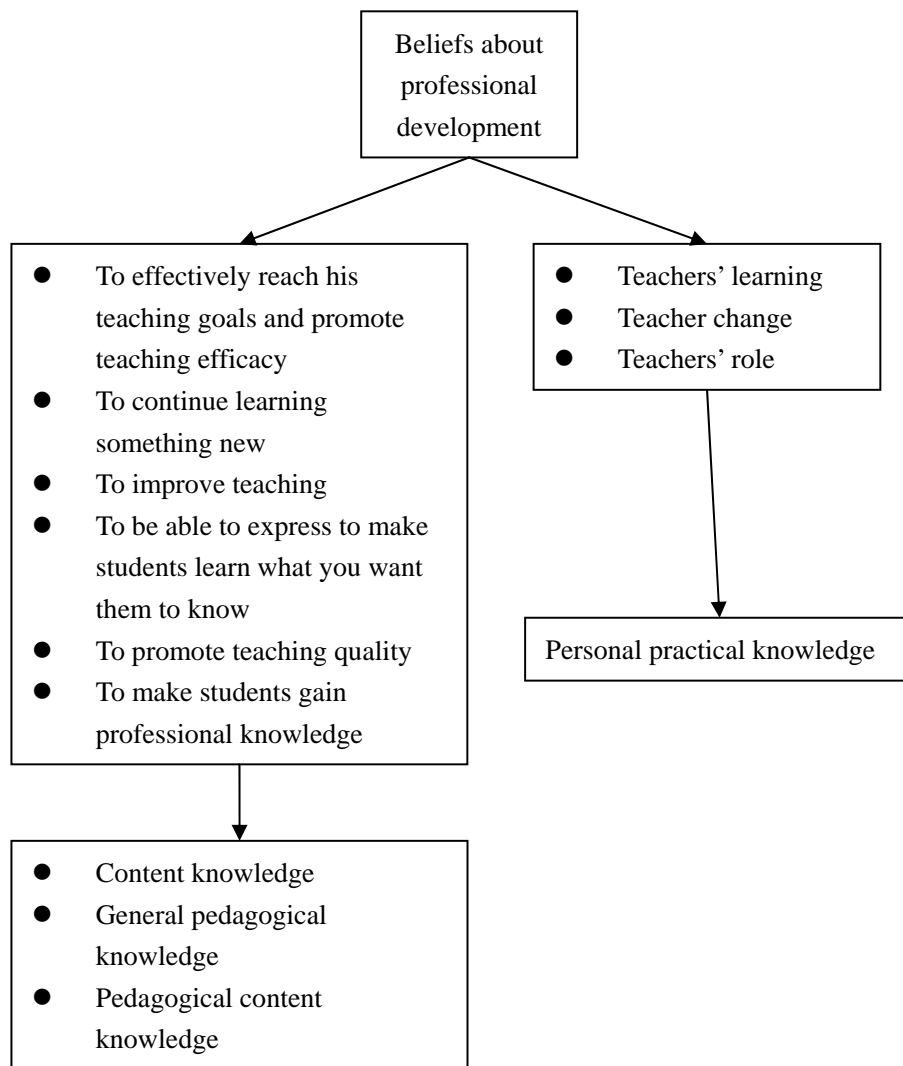
Wade, K. S. (1996). EE teacher inservice education: The need for new perspectives. *Journal of Environmental Education*, 27(2), 11-18.

Wasley, P. (1991). *Teachers who lead: The rhetoric of reform and the realities of practice*. New York: Teachers College Press.

Weinstein, C. S. (1988). Preservice teachers expectations about the first year of teaching. *Teaching & Teacher Education*, 4(1), 31-41.

Whitford, B. L. (1994). Permission, persistence, and resistance: Linking high school restructuring with teacher education reform. In Darling-Hammond (Ed.), *Professional development schools: Schools for developing a profession* (pp. 74-97). New York: Teachers College Press.

Yin, R.K. (1989). *Case study research: Design and methods*. Newbury Park, California: SAGE.



Appendix 1. Teachers' Beliefs about Professional Development