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MEANINGFULNESS OF LEARNING FROM TEACHERS' PERSPECTIVES: AN EXPLORATORY STUDY OF EXPERIENCED TEACHERS' LEARNING IN TAIWAN

By

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ABSTRACT

MEANINGFULNESS OF LEARNING FROM TEACHERS' PERSPECTIVES: AN EXPLORATORY STUDY OF EXPERIENCED TEACHERS' LEARNING IN TAIWAN

By

Cheng-hui Chen

Exponential growth in opportunities for global communication and access to information means that both our institutions and knowledge are dynamic and changing in the modern society. For teachers in such a constantly changing environment to be successful, they must become lifelong learners. This dissertation is concerned with the problem that there are practicing teachers who are not strengthening their attitude toward lifelong learning, or, even worse are ignoring the precepts of continuing teacher education specifically designed to support teachers' focus on to becoming lifelong learners. The research assumes that a positive attitude toward lifelong learning is likely enhanced when practicing teachers find their own inservice learning experiences meaningful in significant ways. What kinds of inservice learning do experienced teachers find meaningful? How do teachers who share instructional events differ in what they find learning meaningful? This study seeks to understand the kinds of learning that practicing teachers appreciate, believe to be worthwhile, and want to experience again--learning they find supportive in encouraging them to commit seriously to learning. I began with 9 experienced teachers in a university-based summer professional development program in Taiwan--a graduate program in school guidance that teachers attend for four consecutive

summers. Before the class began, the teachers were given a survey about their learning experiences. After attending classes with the teachers, I led 5 focus group interviews and 9 individual interviews with the teachers to identify those experiences each found meaningful. I used grounded theory strategies to analyze collected data: survey responses, classroom observation fieldnotes, and interview transcripts. I found perspectives on meaningfulness of learning to vary among teachers, but to emphasize practicality, relationship with instructors, and consistency of ideas with their current thinking. Teachers found learning meaningful in three areas: growth, instructor, and peer. The extent to which learning experiences contributed to intellectual growth was the most common criterion teachers applied in judging them to be meaningful. I developed a three-layer model to represent the nature of learning contributing to teachers' intellectual growth. When describing meaningful learning experiences, teachers claimed that they grew in three domains: taught disciplinary knowledge, serendipitous knowledge, and self-knowledge. Teachers appreciated learning both conceptual and procedural knowledge. Some of teachers emphasized that learning experiences were strongly meaningful when they learned the knowledge they desired to obtain. Teachers held multiple perspectives on meaningful learning. A common perspective was wanting to continue learning when the taught disciplinary knowledge was learned well. Teachers varied in finding meaningfulness in the same courses. They varied in their perceptions less in the courses that they highly valued than in those that they did not. Differences in their perceptions emerged in the areas of growth (taught disciplinary knowledge, serendipitous knowledge, and self-knowledge) each teacher valued, as well in the teachers' emphasis on the content that they desired to learn.

DEDICATION

This dissertation is dedicated to my parents for their giving me power to learn and freedom to search. I say a special thank to my partner, Mr. Sze, Tat Ming, for his love and encouragement on the way of understanding the world of adulthood. I also say thanks to both Professor John (Jack) Philips Smith III and Professor Lin, Sieh-Hwa for their kindness to offer me advice and help when I was down in my graduate study. Finally, this dissertation is to remember Professor Lu, Ching Ming for his graciousness.

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CHAPTER ONE

INTRODUCTION

We live in a time of such rapid change and growth of knowledge that only he who is in a fundamental sense a scholar – that is, a person who continues to learn and inquire – can hope to keep pace, let alone play the role of guide.

Nathan M. Pusey

Modern society is marked by rapid change. Exponential growth in opportunities for global communication and access to information means that both our institutions and knowledge are dynamic and changing. For teachers in such a constantly changing environment to be successful, they need to continue to learn and inquire throughout their teaching career. Not only must teachers learn continually in order to keep up with changes in knowledge and in approaches to teaching, but they must also be lifelong learners who can serve as models for this disposition for their students (Cropley & Dave, 1978), thus equipping them for success in a dynamic global society. Today's teachers need to show that they teach because they know. Furthermore, they teach because they are learning to know throughout their lifetime.

Many practicing teachers are lifelong learners, continually striving to become more effective with students and at the same time finding personal intellectual challenge in their work (Femain-Nemser, 1983). Like the veteran teacher interviewed by David Hawkins (1973), they believe that there is much to be learned even after teaching for years. Not a few people, however, observe that experienced teachers stop learning after they have mastered the routine tasks of teaching. Teachers who resist change once they have set up workable teaching routines are also subject to criticism (Feiman-Nemser,

1983). There are also those who, not entirely without reasons as being thinking of teachers: lazy, and conservative, lacking in spontaneity, imagination, flexibility, and intellectual rigor (Lightfoot, 1983). Obviously, the criticism cited above would find it difficult to think of teachers as lifelong learners.

Focus of the Study

This dissertation is generally concerned with the problem that admittedly there are practicing teachers who are not performing as lifelong learners, are not strengthening their attitude toward lifelong learning, or, even worse are ignoring the precepts of continuing teacher education specifically designed to support teachers' focus on to becoming lifelong learners.

There are many issues involved in the problem of teachers' lack of focus on their primary goals, despite their participation in teacher education programs. In this dissertation, however, I did not choose to focus on the complexity of this problem. Instead, I began with the assumption that a positive attitude toward lifelong learning is likely enhanced when practicing teachers find their own inservice learning experiences meaningful in significant ways. Conversely, a negative attitude toward lifelong learning frequently is the result of unproductive and/or meaningless learning experiences, as Wight (1972) pointed out:

> If something is not meaningful to a person, he is not likely to develop concerns, interests, or attitudes toward it, and it is not likely to be incorporated in his system of constructs, beliefs, values, goals, ambitions, etc. (p. 10)

What kinds of inservice learning experiences are meaningful to practicing teachers? What are the bases on which teachers determine one learning experience to be a meaningful and another to be a waste both time-effort? This study is an exploratory

venture in identifying these factors. It seeks to understand the kinds of learning that practicing teachers appreciate, believe to be worthwhile, want to experience again, learning they find supportive in which encourages them to commit themselves seriously to learning.

I began with a group of experienced teachers in a university-based summer professional development program in Taiwan--a graduate program in school guidance that teachers attend for four consecutive summers. After attending classes with the participating teachers, I led focus group interviews with nine of the teachers to identify those experiences each found meaningful in that days' classes. For purposes of these interviews, the following definition of "meaningful learning" was used to identify the kinds of learning experiences each felt might lead to the development of a positive attitude toward lifelong learning:

> *Meaningful learning is learning that teachers appreciate, believe to be worthwhile, want to experience again, and find supportive in becoming willing to commit to learning seriously.*

This research represents an attempt to describe the characteristics of meaningful learning in continuing professional education from experienced teachers' perspectives.

Characteristics of the Teachers as Lifelong Learners

I shall begin with an explanation of the phrase, "teachers as lifelong learners." It seems to me that teachers-as-lifelong-learners are not merely continuing to learn throughout lifetime, as all people do, in one way or another I mean teachers whose learning is deliberately focused, as that they (a) participate in continuing teacher

education, and (b) keep that they consciously strive to improve and validate their teaching methods.

The criterion of continuing to learn throughout lifetime is not sufficient to distinguish teachers who are performing as lifelong learners from those who are not, because every teacher, like every live human being, is always learning (consciously or unconsciously) something throughout life. The key issue involved in the concept of teachers-as-lifelong-learners is that teachers need to adopt their knowledge continually in order to teach successfully in a changing society. Of course, not every kind of learning experience contributes to a teacher's teaching performance, enhancing his/her competence to cope with the challenges of his/her work in a changing society. It is rather the kind of intentional learning for the purpose of teaching improvement that can help teachers to cope with current challenges and as they present themselves to become successful teachers. McClusky (1974) had elaborated the issue of intentional learning required by people for adjusting to a changing society, pointing out:

> It is now clear that man cannot cope with the over-powering fact of massive change by a simplistic and uncritical (the accent here is on 'uncritical') application of what has been learned in the past, nor can change be coped with by resorting to a strategy of trial and error improvisation. *Our only hope lies in the realization of the fact that continuous change requires continuous education.* (p. 101)

McClusky's choice of the term, continuous "education," instead of continuous "learning," designates the boundaries of lifelong learning, excluding the spontaneous, unplanned, or unconscious learning of everyday life, from the concept of lifelong learning in the context of changing environment. "Education" refers to engagement of purposeful learning or of "deliberative learning," (Tough, 1971), that the learner has clearly in mind an intent to make concerted efforts to gain and to retain certain particular

knowledge and skills. For a practicing teacher to perform as a lifelong learner, he or she, therefore, continues to participate in on-going teacher education in which teachers are involved in deliberative learning for the purpose of teaching improvement.

Focusing on continuing teacher education that includes only intentional or deliberative learning should not be interpreted as a denial of the role of other kinds of teachers' learning, such as unplanned learning, in teachers' growth. Rather, it emphasizes the significant impact of deliberative learning on teachers' response and adaptation to a rapidly changing environment. Continuing teacher education includes both planned learning activities that are initiated by teachers themselves and programs offered by accredited institutes of teacher education, such as, training programs or workshops for teachers.

Cropley and Dave's (1978) work inspired my thinking of the characteristics of the teachers as lifelong learners. They identify four characteristics of the teachers as lifelong learners as follows:

a. "[They] are aware of the need for lifelong education, and of its potential to achieve significant changes in educational practice.... and to practice lifelong education as a means of improving the quality of their own lives" (p. 37).

b. "[They] practice self-directed learning, and assume the responsibility for self-initiated and self-directed inservice education....and, helping [their pupils] to become lifelong learners" (p. 37).

c. "[They] integrate their own learning experiences by linking formal studies with out-of-school, real-life experiences, and would seek to foster such integration in the learning experiences of their pupils" (p. 38).

d. "[They] regard formal education structures as part of a wider life curriculum, existing in society as a whole.... would emphasize the structure, processes and key concepts of disciplines of study, not their specific facts" (p. 38).

The first two characteristics Cropley and Dave cite indicate that a practicing teacher regularly participate in continuing teacher education and incorporate into their teaching newly learned materials and/or methods where appreciate to their interests and needs.

The third and fourth features of the Cropley/Dave list cites the concept of teachers-as-lifelong-learners keeping central the goal of learning to teach by participating in teacher education programs. It emphasizes that the teachers-as-lifelong-learners are not merely motivated solely by their own development as teachers nor by insidental personal derived from continuing learning but they do not drive themselves to learn only for that reason. Whenever they engage themselves in inservice learning and educational activities, they focus on significance and nature of the particular experience and its applicability to their specific learning methodology and discipline.

Problem of Concern

I began to reflect on the problem -- that practicing teachers are not strengthening an attitude toward lifelong learning by their participation in continuing teacher education -- after I worked on my practicum research several years ago. That research was inspired by a conversation with my friend, Tai-Ang, an undergraduate cohort student in Taiwan, in which we talked about what she had learned in a university-based summer professional development program, a graduate program in school guidance that experienced secondary school teachers attend for four summers.

I visited Tai-Ang at that summer institute. It was her third year in the program, and she was busy writing a research proposal with her partner, Wei-Yi, another undergraduate acquaintance. They were reviewing literature about metacognition and

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Tai-Ang asked me what metacognition really meant. I answered that metacognition was a thinking mechanism which controlled and supervised humans' attention and cognition. "Thinking of it as a manager supervising labor in a factory", I advised. Tai-Ang thanked me for my explanation but still looked puzzled. I tried to talk more to her but she stopped me immediately.

She said she knew the definition of metacognition and was enthusiastic about learning the concept from instructors in the summer program, that it was new to her and helped her to appreciate the richness of her personal knowledge. She puzzled, however, about how to use the concept in her own teaching. After she and Wei-Yi began writing a research proposal for investigating the relationship between metacognition and teaching practices, she was struggled with this problem more than she had before. She felt that metacognition might be more useful to her if she were an educational researcher, who could use the concept to understand the cognitive processes. It could also, she thought, be more meaningful to her if she were a subject matter teacher, for example, a math teacher, who could teach students metacognitive strategies of learning mathematics. Nevertheless, as a middle-school counselor, she could not figure out what metacognition could mean to her. "I could pretend to be an educational researcher or a subject matter teacher and write a research proposal about metacognition," Tai-Ang said. "This research proposal, however, will become another required assignment if I don't know at all how this concept can help *my* own school work," Tai-Ang criticized. Wei-Yi nodded with smiles. Listening to Tai-Ang's explanation, I then realized that she was not asking me for a definition of metacognition, but wanted instead to find its relevance or usefulness to her as a counseling teacher.

Tai-Ang's inquiry of her learning of metacognition led me to think that teachers' perceptions of relevance of inservice learning to their own teaching seemed to be one of their major concerns about their own learning. Tai-Ang was happy to be learning new things. She could see the learned concept related to a researcher's work or a school subject matter teacher's teaching. She doubted her learning, however, when she could not see any relevance of the learning to her teaching as a school counselor. More specifically, I found that Tai-Ang's frustration with her learning might have stemmed from a difficulty of not being able to see relevance between her own learning and her students' learning. Like many teachers, teacher educators, and educational researchers, Tai-Ang assumed that the most important purpose of inservice teacher's learning was to improve students' learning through enhanced teaching (Sparks & Loucks-Horsley, 1990). If a teacher's learning was not related to his/her teaching and to his/her pupils' learning, why was the course called *teacher* learning?

Educational researchers have long recognized this problem of relevance. Writing about typical university-based inservice programs, for example, Feiman-Nemser (1983) noted:

> If teachers find intellectual stimulation in formal study, they often have trouble seeing the connection with their daily classroom work.... As a result teachers do not adapt new approaches to their own teaching situation and school practices do not change. (pp. 163- 164)

Being aware of the problem of relevance, I conducted my practicum research to understand how experienced teachers perceived relevance and irrelevance between inservice learning and their own school teaching. I visited the Taiwanese summer program again two years my conversation with Tai-Ang and met 32 experienced teachers

who were taking a computer course in the program. I observed the group of teachers learning in classroom and talked which them after classes. After instruction in the first unit, Internet[1], was completed, I asked those teachers whether or not they found relevance between learning about the Internet and their own teaching. If so, what relevance did they see?

Most of the participant teachers could see relevance either by making connections themselves or by rephrasing those connections pointed out by the course instructor. Yet some of these teachers enjoyed learning in that course and some did not. Of particular note were teachers who showed little interest or enthusiasm in their learning even though they could describe the relevance of the learning to their teaching. Some of the teachers were nervous about assignments; some were angry at classroom instruction; some were tired of copying a peer's homework; some told me that they were too old to learn computers; some told me that they did not want to commit to long-term learning anymore. I was confused with what I saw and heard from their groups of teachers. If they could perceive the relevance of inservice learning to their teaching, why were they not appreciating learning as their peers were? Why were they not willing to commit to another learning journey even though they had achieved the tangible result of being able to send an e-mail to a friend? I was surprised to realize that I had met a group of practicing teachers who could learn but preferred not to do so at that moment, and perhaps in the future. To some degree, the teachers seemed to be tuning their backs on being lifelong learners and chose not enhance their attitude toward lifelong learning.

[1] Internet was not popularly used in secondary schools in Taiwan at that time. Most of the participant teachers had no experience using Internet. The course instructor taught the group of teachers how to send mail with e-mail software and to download files with FTP clients.

My practicum research experience led me to think that the problem of practicing teachers' learning may not be simply a matter of relevance or usefulness. Rather, the teachers' more general attitudes toward learning appeared to be involved. I became concerned with the problem that practicing teachers are not developing a positive attitude toward lifelong learning after having participated in continuing teacher education.

Assumptions

I don't think that there are any schoolteachers who would reject the concept that a teacher *ought to* perform as a lifelong learner to be successful in a constantly changing society. A disposition toward lifelong learning is, however, not something a teacher is born with. Nor is such a disposition easy to obtain or to maintain. It is a challenge to any adult in the teaching professions to commit to constant serious learning, partly because deliberative learning requires hard work. We can always find excuses in our daily life to keep ourselves from the effort regarding for continuing professional education. Practitioners, practicing teachers in this case, need to foster an attitude toward and a habit of lifelong learning through individual efforts as well as with supportive conditions. One of the most important functions of continuing teacher education, hence, should be to help practicing teachers develop an attitude toward lifelong learning. Unfortunately, some of those teachers whom I observed and interviewed in my practicum research seemed not to develop a positive attitude toward learning after their participation in the program. On the contrary, the required educational activities seemed to push teachers away from learning. This problem is not unique to the summer program that I observed. It is a problem endemic to many educational systems. As Dewey (1938) pointed out:

> The experiences which were had, by pupils and teachers alike, were largely of a wrong kind. How many students, for example, were rendered callous to ideas, and how many lost the impetus to learn because of the way in which learning was experienced by them? (p. 26)

Dewey emphasized the significant impact of the learning experience on the formation of an attitude toward learning.

> Experience does not go on simply inside a person. It goes on there, for it influences the formation of attitudes of desire and purpose. (p. 39)

Of course, a practicing teacher's learning experiences in a teacher education program can not totally determine whether or not that teacher will continue to learn in the future. The learner's family situations, his teachers (teachers of teachers, in this case), his nature intelligence as well as other personal traits may have an impact on the teacher's attitude toward learning (Houle, 1982). Nevertheless, learning experiences do play an important role in shaping a teacher's attitude toward learning. As Wight (1972) said:

> We have feelings about what we are doing (or what is being done to us) and develop attitudes toward the experience. If an experience is pleasant, enjoyable, or rewarding, we develop positive attitudes toward it. If it is painful or unpleasant, our reactions will be negative, and in the future we tend to dislike, avoid, or reject whatever was associated with the experience. If an experience means little or nothing to us, it is neither positive nor negative and acquires neither an attractive nor an aversive quality. (p. 2)

This dissertation is based on the assumption that an attitude toward lifelong learning is most likely enhanced when the teacher finds his or her own learning experiences meaningful. On the contrary, disappointing or frustrating learning experiences typically hinder the teacher from becoming a lifelong learner.

Purpose and Research Questions

My practicum research experience led me to consider the problem that practicing teachers are not supported in their attempt to become lifelong learners by continuing teacher education. I began to reflect on the relationship between teachers' learning experiences and the development of an attitude toward lifelong learning. I made the assumption that an attitude toward lifelong learning is likely enhanced when teachers find inservice learning experience meaningful. Beginning with this assumption, I explored the characteristics of inservice learning experiences that teachers consider meaningful and find supportive in developing an attitude toward lifelong learning. The research aimed to identify and describe experienced teachers' perceptions of meaningful learning experiences in their continuing professional education.

Often, researchers or teacher educators begin with assumptions about what they think is important for teachers to learn. They, of course, can define what kinds of learning are meaningful or "healthy" to practicing teachers. They can not decide, however, what kinds of learning teachers themselves find meaningful because teachers are adult learners with perspectives subject to their unique experiences and roles. Only when we hear from teachers' voices, can we understand the kinds of learning they perceive as meaningful. Hence, it is essential to identify the kinds of learning from the teachers' own views.

Learning from my practicum research experience, I was also aware of the issue of individual differences involved in teachers' perceptions of their learning. As I mentioned earlier in this chapter, some teachers appreciated learning about the Internet and looked for other learning opportunities which other teachers were uninterested in the Internet, even though they saw its relevance to their own schoolwork. Although they shared the

same instructional activities and resources, the teachers seemed to have different learning experiences and different perceptions of their learning. Researchers (Prosser & Millar, 1989) have also recognized that the variation in the college students' perceptions of their learning is remarkable when the students are all in the same learning and teaching situations. This research, therefore, took the issue of individual differences into account for the purpose of describing the variance of practicing teachers' perceptions of the learning experiences that they find meaningful and supportive in developing an attitude toward lifelong learning.

The following questions served as a focus for the study:

a. What kinds of inservice learning do experienced teachers find meaningful--appreciate, believe to be worthwhile, want to experience again, and find supportive in becoming willing to commit seriously to learning?

b. How do teachers who share instructional events differ in what they find learning meaningful?

Significance of the Study

These research questions are worthy of study pursue for two reasons. First, the research findings can add to our understanding and knowledge of practicing teachers' perspectives on continuing learning and education in the teaching profession. The information obtained can serve as a foundation for further research on practicing teachers' development as lifelong learners. Second, teacher educators can build on this

new understanding to design teacher education program which help practicing teachers to become lifelong learners.

Most research on practicing teachers' learning has focused on whether teachers acquire recommended skills and knowledge -- pedagogical techniques, subject-matter content for teaching, or theoretical constructs believed to be important for teaching--whether and how teachers' classroom practice changes, and various factors affecting teachers' learning. Less attention has been paid to the impact of learning experiences on the teachers' disposition to pursue additional learning opportunities in the future.

Teachers' attitudes and beliefs have certainly not been ignored in research on teachers' learning (Richardson, 1996). Attitudes, beliefs, and prior knowledge are considered key "independent" factors in learning. As Showers, Joyce, and Bennett (1987) argued, for example:

> Teachers bring to staff development their knowledge and skills, their learning and teaching styles, and their personal characteristics such as states of growth, conceptual flexibility, sense of efficacy and self-concepts. They also bring perceptions about their needs and preferences for certain kinds of staff development. (p. 79)

What teachers know and believe has been shown to have a profound influence on what they learn--how they make sense of various learning opportunities (e.g., Borko, Mayfield, Marion, Flexer, & Cumbo, 1997; Heaton, 1992; Remillard, 1992). The more congruent a teacher education program is with the teachers' prior beliefs, the more likely it will enhance the teachers' learning in a particular domain (Tillema, 1995). The failure of many inservice education opportunities has been attributed to their failure to meet teachers' perceived needs (Fullan, 1990).

Researchers have taken seriously the role of teachers' attitudes and beliefs in assessing whether and how they learn. The impacts of various learning experiences on teachers' attitudes and dispositions toward learning, however, have received much less attention. This study is an exploratory venture in that direction. It seeks to understand what kinds of learning teachers find meaningful and supportive of their becoming lifelong learners.

There is a common belief that teachers attend professional development programs, just wanting "recipes", asking only for practical techniques to use in their classrooms. According to this common view, we can claim almost immediately that meaningful learning to practicing teachers is the kind of learning from which teachers learn practical techniques for teaching. In other words, the prime value of continuing learning and education of teachers is its practicality, form the teachers' viewpoint.

Doing my practicum research, I learned that some teachers were indeed looking for practical skills or concrete directions for their teaching; other teachers were not asking just for practicality, however. Does it really matter that inservice learning be closely related to the teachers' classroom work? How important is it for teachers to feel they are gaining important new understanding compared with their acquisition of practical techniques? There is a need for a research for the sake of better understanding the variances in teachers' perspectives on the subject of meaningful learning.

By understanding teachers' perspectives on meaningful learning, we can better know what makes teachers want to continue to learn. Current inservice teacher education program tend to use external rewards (e.g., salary increases or rank promotions) to motivate teachers to learn, perhaps orienting teachers away from an intrinsic motivation

to learn and failing to foster positive attitudes toward learning. Recently, some educational psychologists have emphasized the value aspects of motivation in education. Jere Brophy (1999), for example, argued that educators should build learning environments to help learners to appreciate the domain's value and experience its satisfaction so that the learners are willing to continue learning for its own sake. If inservice learning experiences are meaningful to teachers, teachers may become lifelong learners without relying on external rewards. Teacher educators could then build on these new understandings to design teacher education program in which learning experiences might be more consistent with teachers' existing perspectives on meaningful learning, or they might be designed to promote changes in teachers' perspectives to develop a more uniformly positive attitude toward lifelong learning.

Overview of the Study

In the chapter entitled Literature Review, I explained how I developed a conceptual framework for understanding and describing learning experiences, as well as citing characteristics of meaningful learning that researchers and practicing teachers have identified in the past. In Chapter 3, I describe how I collected data in the field and analyzed data during and after my fieldwork. In Chapter 4, I present the results of the study. In Chapter 5, I discuss the implications of the study and suggest directions for further teacher education and research.

CHAPTER TWO

REVIEW OF THE LITERATURE

This research focuses on the characteristics of learning experiences that teachers find meaningful and supportive in becoming lifelong learners. Drawing from a representative selection of definitions of experiences, this chapter presents a conceptual framework for understanding meaningful learning experiences from two perspectives: (a) the processes of interaction between the self and learning situations; and (b) the outcomes of the interaction. This framework will be used for describing the kinds of learning that the participant teachers found meaningful in continuing teacher education.

The issue of meaningful learning has fallen in and out of focus in educational psychology, psychology, and philosophy at several times in the past. Researchers have conceptualized meaningful learning in several ways and have pointed out several characteristics of meaningful learning experiences. Drawing from this body of literature, I describe the characteristics of meaningful learning from various researchers' perspectives.

Although the issue of meaningfulness of learning has not been the main focus of research on teachers' learning, researchers have documented practicing teachers' experiences in continuing teacher education and their comments on those experiences, both positive and negative. In addition, teacher educators and researchers have discussed the values of continuing learning in the teaching profession. Drawing from these two groups of literature, I present a selection of characteristics of learning experiences that are meaningful to practicing teachers for their professional development.

The characteristics of meaningful learning that are identified from the literature will serve as a reference for understanding which characteristics of learning experiences are important and unique to practicing teachers. The literature review is organized in three sections: (a) A Framework for Understanding and Describing Learning Experience; (b) Characteristics of Meaningful Learning; and (c) Meaningful Learning for Practicing Teachers.

A Framework for Understanding and Describing Learning Experience

Experience has been a major issue raised by researchers in the study of the mind. The word –experience– is also widely used by people in everyday life. Experience, however, defies easy definition. Many researchers have noticed the difficulty of managing this term and have made efforts to define it clearly (Boud, Cohen, & Walker, 1993; Oakeshott, 1933). By reviewing the literature about the issue of human experience, a framework can be developed for understanding and describing learning experience from two aspects: (a) processes of interaction between the self and learning situations, and (b) the outcomes of this interaction.

The *Collins Cobuild English Language Dictionary* (1987) captures two aspects of experience. As a noun, experience is either a process of feeling something and being affected by it, or knowledge in a particular area that one has gained over time. Whereas experience is viewed as the process of a person's feeling something and being affected by it, it also implies that experience needs to be understood as a process involving an interaction between a subject and an object. The notion of knowledge suggests describing experience in terms of the outcome status of the subject after the process of interaction.

Process of Interaction between the Self and Learning Situations

Scholars have emphasized experience as a whole, using both the subjective aspect of the perception of mind as well as the objective aspect of knowledge gained overtime. Dewey (1916), for example, viewed experience consisting of the two elements:

> The nature of experience can be understood only by noting that it includes an active and a passive element peculiarly combined. On the active hand, experience is *trying*-a meaning which is made explicit in the connected term experiment. On the passive, it is *undergoing*. When we experience something we act upon it, we do something with it; then we suffer or undergo the consequences. We do something to the thing then it does something to us in return: such is the peculiar combination. The connection of these two phases of experience measures the fruitfulness or value of the experience. Mere activity does not constitute experience. It is dispersive, centrifugal, dissipating. Experience as trying involves change, but change is meaningless transition unless it is consciously connected with the return wave of consequences which flow from it. (p. 139)

The active element of experience, according to Dewey, is the way that an individual acts on the learning situation; the passive element of experience refers to the consequence responding to the individual. The "peculiar combination" of both active and passive elements means the process of interaction between the subject and the object.

Of particular note is Dewey's rejection of viewing experience as merely sensation. Dewey derived his conception of experience from William James (1904) who claimed that experience is double-barreled: subjective (experiencing) and objective (to be experienced). Dewey (1925) argued that experience has objective and definitive characteristics that can be described without reference to subjective perception of the self. Dewey (1925) explained:

> It is not experience which is experienced, but nature-stones, plants, animals, diseases, health, temperature, electricity, and so on. Things interacting in certain ways are experience; they are what are experienced. Linked in certain other ways with another natural object-the human organism-they are how things are experienced as well. (p. 4)

> What men do and suffer, what they strive, love, believe, and endure, and also how men act and are acted upon, the ways in which they do and suffer, desire and enjoy, see, believe, imagine-in short, processes of experiencing. "Experience" denotes the planted field, the sowed seeds, the reaped harvests, the changes of night and day, spring and autumn, wet and dry, heat and cold, they are observed, feared, longed for; it also denotes the one who plants and reaps, who works and rejoices, hopes, fears, plans, invokes magic or chemistry to aid him, who is downcast or triumphant. It is "double-barrelled" in that it recognizes in its primary integrity no division between act and material, subject and object, but contains them both in an unanalyzed totality. (p. 10)

Dewey claimed that experience is an unanalyzed totality of interaction between act and material, subject and object.

Like Dewey, Oakeshott (1933) viewed human experience as a concrete whole, and furthermore claimed that there is no need to describe experience from both the subjective and objective elements:

> "Experience" stands for the concrete whole which analysis divides into "experiencing" and "what is experienced". Experiencing and what is experienced are, taken separately, meaningless abstractions; they cannot, in fact, be separated. Perceiving, for example, involves a something perceived, willing a something a something willed.... The character of what is experienced is, in the strictest sense, correlative to the manner in which it is experienced. These two abstractions stand to one another in the most complete interdependence; they compose a single whole. It would, then, be possible to build up one's view of the character of experience either from the side of experiencing, or from the side of what is experienced; and it would be superfluous to do both, for whatever is true of the one side will be true also of the other. (p. 9)

Oakeshoot's opinion the issue of objective existence of the world. We know there are things out there and they interact with each other. However, the characteristics of those things are perceived through the mind. That is why Dewey claimed that experience is an "unanalyzed totality "of interaction between subject and object and why Oakeshott argued that the single whole can not be described from either side. The key issue involved in these arguments is that the subjects perceive the objects; we are never sure how close the perceived objects are to the physical existence of the objects. The "objects" of experience

are the perceived objects, which are the interaction of self and the ontological objects. Accordingly, the objects of learning experience are not materials or people in the learning environment. Rather, the objects are the individual's perception of the learning environment.

Dictionaries of psychology and philosophy also contain definitions of experience. *The Penguin Dictionary of Psychology* (1985) points out the subjective and objective elements of experience:

> ...some now use the term with reference to the real world, where experience is characterized in terms of what is "out there" and others specifically use it only to refer to personal subjective phenomena and the experience is characterized in terms of what is "in the head." (Reber, 1985, p. 257)

The Oxford Dictionary of Philosophy (1994) also defines experience with elements of objective entity and subjective existence:

> Along with consciousness, experience is the central focus of the philosophy of mind. Experience is easily thought of as a stream of private events, known only to their possessor, and bearing at best problematic relationships to any other events, such as happenings in an external world or similar streams in other processors. The stream makes up the conscious life of the possessors. With this picture there is a complete separation of mind and the world....The aim of much recent philosophy, therefore, is to articulate a less problematic conception of experience, making it objectively accessible, so that the facts about how a subject experiences the world are in principle as knowable as the facts about how the same subject digests food. A beginning on this task may be made by observing that experiences have contents: it is the world itself that they represent to us as being one way or another, and how we take the world to be is publicly manifested by our words and behavior. (Blackburn, 1994, p. 130)

Experiences refer to events through which a person lives with in his or her consciousness. The events can be characterized in terms of both some existences out there in the world and subjective phenomena inside the person's head. The definitions of experience in the psychology and philosophy dictionaries still emphasize the nature of experiences as the

private perceptions of subjects who possess the events, but include the objective aspect of events which is public to observers other than the possessors of the experiences.

Extending from this position, learning experience can be characterized in terms of the objects interacting with the learner in the processes of learning. The objects of a learning condition in the processes of interaction can be the instructors' and peers' behavior (verbal or nonverbal), textbooks, syllabus, activities, assignments, and so forth. Ramsden (1979, 1991) developed the Course Perception Questionnaires to identify students' perceptions of their learning environments. Ramsden (1979) identified eight dimensions of learning environments (see Table 2.1). The first and most important factors identified in his analysis were "lecturers' understanding of students and commitment to good teaching" (p. 416). Ramsden (1991) then modified the questionnaire in the 90's, identifying five characteristics of learning environment based on a nation-wide sample in higher education in Australia (see Table 2.2).

Both the factors "relationships with students" and "commitment to teaching" in the original questionnaire were combined into a single factor called "good teaching" in the new form of this questionnaire. Both the factors "vocational relevance" and "social climate" were not included in the new form. The factor "appropriate assessment" was added to the revised form of the questionnaire.

To summarize, experience has been defined by researchers as an interaction between subjects and objects.

Table 2.1
Dimensions of Learning Environments

Factors	Items
Relationships with students	Closeness to lecture/student relationships; help and understanding shown to students.
Commitment to teaching	Commitment of staff to improving teaching and to teaching students at a level appropriate to their current understanding.
Workload	Pressure placed on students in terms of demands of the syllabus and assessment tasks.
Formal teaching methods	Formality or informality of teaching and learning (e.g. lecture v. individual study).
Vocational relevance	Perceived relevance of courses to students' careers.
Social climate	Frequency and quality of academic and social relationships between students.
Clear goals and standards	Extent to which standards expected of students are clear and unambiguous.
Freedom in learning	Amount of discretion possessed by students in choosing and organizing academic work.

Source: Ramsden, 1979, p. 416.

Table 2.2
Scales of the Course Experience Questionnaire

Scales	Example of Items
Good Teaching	Teaching staff normally gives helpful feedback on how you are doing.
Clear goals	You usually have a clear idea of where you are going and what is expected of you in this course.
Appropriate workload	The sheer volume of work required in this course means you can't comprehend it all thoroughly (negatively scored).
Formal teaching methods	Formality or informality of teaching and learning (e.g. lecture v. individual study).
Appropriate assessment	Staff seems more interested in testing what you have memorized than what you have understood (negatively scored).
Emphasis on independence	Students are given a lot of choice in the work they have to do.

Source: Ramsden, 1991, p. 134.

Outcomes of the Interaction

Many scholars share the view that experience is an outcome of the interaction between the subject and the object. Albert Wight's (1972) discussion of the affective objectives of education is interesting, particularly in addressing the nature of experience in terms of the subject's perception of the outcomes of interaction. Wight argued that a person has experiences that result in and are influenced by three mental structures: dispositions to actions, personal guiding systems, and action orientation. This leads to the person's next action and in turn, form another experience. Wight claimed that an experience is both cognitive and affective.

The cognitive aspect of experiences is the degree of meaningfulness (or how central the experience is to the self); the affective dimension is the person's felt reaction to the experience. Weigh presented a U shape (Figure 2.1) to illustrate the relationship between the two dimensions of experience:

> If something has no meaning or importance for a person, his reaction is likely to be one of complete indifference, neither positive nor negative. If an experience is either positive or negative, it becomes meaningful. As something takes on meaning for a person, his reaction will move up the vertical scale, following the curve to the left or right, depending on whether the experience is positive (unpleasant, enjoyable, rewarding, exciting, challenging, etc.) or negative (unpleasant, punishing, threatening, anxiety-producing, etc.) (p. 4)

To Wight, experience is a person's mental status with both of the dimensions of affect and cognition. The affective dimension is the person's feelings toward something. The cognitive dimension is the distance between the object and the person's self or the degree of perceived meaningfulness. Experience, accordingly, seems to reside in the person's perceptions and feelings about the "something".

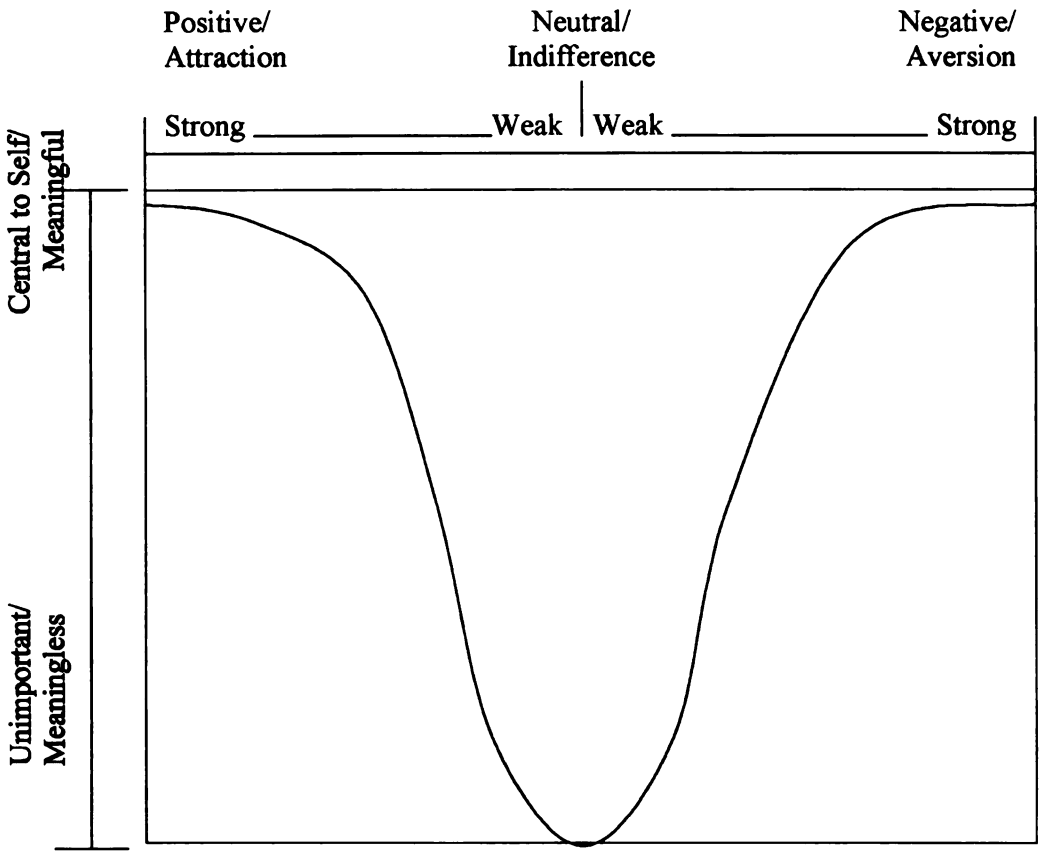


Figure 2.1. Two dimensions of experience.

Source: Wight 1972. p.3.

Like Wight, *The Penguin Dictionary of Psychology* (1985) also captures the aspect of outcomes of interaction in explaining experience. It emphasizes the dimension of cognition in terms of knowledge, however:

> Basically, the term [experience] is used in ways commensurate with lay language; that is: 1. Any event through which one has lived. 2. The knowledge gained from such participation in that event. 3. The sum total of knowledge accumulated. (Reber, 1985, p. 257)

Viewing experience as gained knowledge does not merely refer to the individual's reactions to the consequence of an event. It refers to the individual's growth as a result of the process.

Recently, some researchers, while acknowledging the importance of the interaction between objects and subjects, have emphasized the social and historical nature of experience. They have added the notion that experience involves a process of interpretation and evaluation of learning outcomes. That is, experience is not merely a fact, but a value that includes the learning processes and the learning outcomes. For example, Usher (1997) argued that:

> Experience is being placed in a social reality which is always perceived and comprehended as subjective, i.e., personal or "inside". Experience, then becomes the effect of an interaction between the world (social reality) and the ongoing construction of subjectivity. The subjective engagement with discourses, practices and institutions lends significance, i.e., value, meaning and affect, to the event of the world. (p. 104)
>
> It is difficult to see how selves could isolate their experience from its implication in historicality, sociality and discursivity. Here, the metaphor of experience as a 'text' has its use. To see experience in this way implies that experience is something to be 'read' or interpreted, possibly with great effort, and certainly with no final, definitive meaning. This must itself presuppose an interpretive, meaning-conferring structure of which selves (subject) are part. (p. 104)

Summary

All learning experiences include two facets: (a) processes of interaction between the self and learning situations; and (b) the outcomes of this interaction. Learning experiences can differ from each other in terms of the processes of the interaction between the self and situations. Learning experiences can also differ in terms of learning outcomes. The next section explores a selection of characteristics of meaningful learning

that researchers have already recognized regarding the two aspects of learning experiences.

Characteristics of Meaningful Learning

Helping learners to take on meaningful learning has been a central goal of many educational efforts and a challenging topic in research on learning and teaching. When educational researchers discuss characteristics of meaningful learning, some state features in terms of both desired learning outcomes and learning processes; others focus only on the aspects of desired outcomes; some others just state the characteristics of learning processes. Of particular note is the tendency of most researchers to focus on desired outcomes of learning more than on describing the features of learning processes.

The issue of meaningful learning can be traced in Gestalt psychologists' work in contrast with the views of associationist theories of learning in the 1930's. Wertheimer (in Katona, 1940) defined the essentials of learning in terms of understanding whereas the associationists'– defined learning in terms of repeated associations between conditioned responses and stimuli. Wertheimer described the characteristics of *sensible learning* from the aspect of learning outcomes:

> Every good teacher enjoys teaching and learning when really sensible learning takes place: when eyes are opened, when real grasping, real understanding occurs, when the transition takes place from blindness or ineptness to orientation, understanding, mastery; and when, in the course of such happenings, mind develops. (p. *v*)

All of these characteristics (i.e., *eyes are opened, real grasping, real understanding occurs, transition from blindness or ineptness to orientation, understanding, mastery, and mind develops)* are adjectives of learning outcomes. They are forms of learning outcomes

that Wertheimer desired and valued. They also can be interpreted as characteristics representing the aspect of learning processes, for example "real grasping."

Following Wertheimer, Katona (1940) conducted experiments to make a qualitative distinction between what he called "senseless learning," the kind of learning studied by the associationists, and "meaningful learning" the type of learning of interest to the Gestalt psychologists. Katona (1940) contrasted the two kinds of learning processes:

> Let us say: there are two kinds of learning. Connections established by the conditioned-reflex techniques or by repeating the same contents or responses over and over again, as in all forms of drill, are characteristic of one kind of learning. Then we draw a thick dividing line. On the other side of the barrier we find processes of learning that are described by expressions such as "apprehension of relations," "understanding of a procedure," "insight into a situation." ... "Senseless" may be written on one side of the line where there is the depository of connections, and "meaningful" on the other side, where the achievement brought about by learning may be called understanding. (pp. 5-6)

When Katona described senseless learning, he pictured the learner's action in the processes of learning, that is, drilling the same contents or responses. When describing the characteristics of meaningful learning, however, he described both the aspect of learning processes and the desired learning outcomes. The characteristics-- *apprehension of relations, understanding of a procedure, and insight into a situation*--represent learners' actions (i.e. apprehend, understand, and gain insight) and the experienced objects (i.e., relations, a procedure, a situation) in the processes of learning. However, these characteristics also refer to some achievement after learning--the desired outcomes of learning. In addition, Katona concluded that the achievement brought about by [meaningful] learning may be called *understanding*, which is a characteristic representing the outcomes of learning.

Therefore, meaningful learning, according to both Wertheimer and Katona, is learning through which learners achieve understanding and their minds develop as a result. Meaningful learning is a process in which the learner understands relations, procedures, or situations rather than repeatedly drilling contents.

Like Gestalt psychologists, psychologists taking cognitive perspectives on learning disagree with associationists' perspectives on learning and define the characteristics of meaningful learning for school learning. David Ausubel (1968), for instance, argued that meaningful learning should replace rote learning in classrooms. In terms of both learning outcome and process, Ausubel (1968) defined meaningful learning as a process that "involves the acquisition of new meanings, and new meanings, conversely, are the products of meaningful learning" (p. 37). The learner's acquisition of new meanings is the characteristic of outcome of meaningful learning; acquiring new meanings is the characteristic of the process of meaningful learning. Unlike Wertheimer and Katona who use "understanding" to characterize meaningful learning, Ausubel (1968) illustrated that the acquisition of new meanings requires two elements: (a) potential meaningful learning task or material; and (b) meaningful learning set. Potential meaningful learning task refers to the symbolically expressed ideas that can be related in nonarbitrary and substantive fashion to the learner's current knowledge structure. Meaningful learning set refers to the learner's current disposition to relate the new learning material nonarbitrarily and substantively. Ausubel (1968) therefore, defines meaningful learning as a process in which:

> symbolically expressed ideas are related in a nonarbitrary and substantive (nonverbatim) fashion to what the learner already knows, namely, to some existing relevant aspect of his structure of knowledge (for example, an image, an already meaningful symbol, a concept, or a proposition). (pp. 37-38)

On the other hand, rote learning takes place:

> if the learning task consists of purely arbitrary associations, as in paired-associate, puzzle-box, maze, or serial learning; if the learner lacks the relevant prior knowledge necessary for making the learning task potentially meaningful; and also (regardless of how much potential meaning the task has), if the learner adopts a set merely to internalize it in an arbitrary, verbatim fashion (that is, as an arbitrary series of words). (p. 24)

The contrast of the two kinds of learning shows that the relationship between the learning task and the learner's current status of knowledge is the major criterion to distinguish a meaningful learning experience from rote learning.

In sum, the characteristics of meaningful learning described by Ausubel include acquisition of new meanings (the aspect of learning outcome) and the connections between learning tasks and the learner's current structure of knowledge in the process of acquiring meanings.

Following Ausubel's analysis of the nature of meaningful and rote learning, educational psychologists have continued to explore the nature of learning that is meaningful to learners. More recent education efforts and research have focused on the concept of understanding. Jere Brophy (1989), for example, synthesized the notion of *meaningful understanding*:

> Schooling should be designed not merely to cause students to memorize factual information and reproduce it on cue in response to test or assignment questions, but should expose the students to coherent bodies of information organized around key concepts and generalizations that are related to one another and to the students' prior knowledge and experience, so that the students find the learning meaningful and are able to apply it in relevant situations in and out of school. (p. x)

The notion of students who "memorize factual information and reproduce it on cue in response to test or assignment questions" is similar to the rote learning, described by

Ausubel, in which the learner acquires learning material in an arbitrary, verbatim fashion. The characteristics of meaningful understanding described by Brophy, on the other hand, extend Ausubel's concep. In terms of process, Brophy emphasized: (a) exposing students to key concepts connected and coherent to each other; and (b) helping students relate learned concepts to their prior knowledge and experience. In terms of outcomes of learning for meaningful understanding, Brophy focused on students finding learning meaningful and being able to apply it in new situations.

Dewey (1938) also discussed the issue of the school learning experiences that can extend an individual's lifelong development. Dewy argued that the quality of any schooling experiences has two aspects: an immediate aspect of agreeableness or disagreeableness and its influence upon later experiences. He claimed that many learning experiences are mis-educative because they limit the individual's further growth even though those experiences seem to be currently agreeable or joyful:

> An experience may be such as to engender callousness; it may produce lack of sensitivity and responsiveness. Then the possibilities of having richer experience in the future are restricted. Again, a given experience may increase a person's automatic skill in a particular direction and yet tend to land him in a groove or rut; the effect again is to narrow the field of further experience. An experience may be immediately enjoyable and yet promote the formation of a slack and careless attitude; this attitude then operates to modify the quality of subsequent experiences so as to prevent a person from getting out of them what they have to give. Again, experiences may be so disconnected from one another that, while each is agreeable or even exciting in itself, they are not linked cumulatively to one another. Energy is then dissipated and a person becomes scatter-brained. Each experience may be lively, vivid, and "interesting," and yet their disconnectedness may artificially generate dispersive, disintegrated, centrifugal habits. The consequence of formation of such habits is inability to control future experiences. (pp. 25-26)

In Dewey's opinion, immediate enjoyment of a learning experience is not enough to decide whether or not that experience is worthwhile in education. It is the increase of ability and desire for continuous growth out of subsequent experiences that determine the quality of school learning experiences.

Continuity of growth is one characteristic of educative experience pointed out by Dewey (1938) in his two-criteria (i.e. continuity and interaction) model of experience for discriminating educative experiences from mis-educative ones. As Dewey explained:

> [E]very experience both takes up something from those which have gone before and modifies in some way the quality of those which come after. (p. 35)

The difference between an educative experience and a mis-educative one is dependent on whether the forms and direction of growth promote or retard growth in general:

> Does this form of growth create conditions for further growth, or does it set up conditions that that shut off the person who has grown in this particular direction from the occasions, stimuli, and opportunities for continuing growth in new directions? (p. 36)

Dewey (1938) listed the characteristics of educative experience in terms of the criterion of continuity:

> An experience arouses curiosity, strengthens initiative, and sets up desires and purposes that are sufficiently intense to carry a person over dead places in the future, continuity work in a very different way.... (p. 38)

The three characteristics- *arousing curiosity, strengthening initiative, setting up desires and purposes to carry a person over dead places in the future*- can be observed from the aspects of both learning outcomes and processes.

"All human experience is ultimately social; that it involves contact and communication"(p. 38), Dewey (1938) claimed, and accordingly, he pointed out the *interaction between subjective and objective conditions* as the second criterion to

discriminate an educative experience from a mis-educative one. The subjective conditions consist of an individual's personal needs, desires, purposes, and capacities in a particular situation and time. The objective conditions are the parts of situations that interact with the individual's personal conditions, including:

> persons with whom he is talking about some topic or event, the subject talked about being also a part of the situation; or the toys with which he is playing; the book he is reading...; or the materials of an experiment he is performing. The environment, in other words, is whatever conditions interact with personal needs, desires, purposes, and capacities to create the experience which is had. (Dewey, 1938, pp. 43-44)

Considering the quality of interaction between an individual's internal and objective conditions, Dewey (1938) defined educative experiences as involving issues of social control, self-control, and an individual's freedom of thought, desire, and purpose. An educative experience is one from which an individual can achieve self control in terms of possessing the freedom of intelligence (that is, freedom of observation, freedom of judgement excised on behalf of purposes) in a learning environment well controlled by the educator.

Humanists such as Carl Rogers (1961) also criticized the problems of rote learning in school arguing that helping students to experience *significant learning* should be the educator's goal. Rogers defined significant learning in psychotherapy but thought it could be applied to education:

> By significant learning I mean learning which is more than an accumulation of facts. It is learning which makes a difference – in the individual's behavior, in the course of action he chooses in the future, in his attitudes and in his personality. It is a pervasive learning which is not just an accretion of knowledge, but which interpenetrates with every portion of his existence. (Rogers, 1961, p. 280)

Rather than emphasizing the quality of cognition, Rogers' concept of significant learning highlights the change of the whole person through learning. A particular learning experience is meaningful to the extent that it changes the way a person perceives or behaves. In sum, Rogers' concept of significant learning provides a characteristic of meaningful learning from the aspect of learning outcomes: change of action, thoughts, and personality of a person.

Rogers (1961) then described the characteristics of conditions necessary for significant learning. First, the learner is aware of a problem that he or she is facing and perceives it as a serious and meaningful problem. Second, the instructors are honest and engaged in the teaching-learning relationship. The instructors mean what they say and express what they deeply feel. Third, the instructors express warm caring, acceptance, and unconditional positive regards toward the learners. The instructors, therefore, provide the learners a safe climate for learning. A fourth condition for significant learning is the instructors' empathic understanding of the learners' world and experiences. The more the instructors understand the learners, the more clearly they can communicate with each other. The fifth condition is that the learners perceive the instructors' congruence, acceptance, and empathy. Unlike Dewey who merely pointed out the elements of the learning condition, Rogers captured characteristics of the processes of meaningful learning. Of particular note is his emphasis on the instructors' characteristics and their relationship with the learners during the processes of interaction between the instructors and the learners.

Beginning with Rogers' concept of significant learning, Brookfield (1987) has studied adult learning, identifying four characteristics of *significant personal learning*:

(a) the learners recognize their lives being re-shaped significantly by the learning experiences; (b) the learners used self-reflection when facing a major life crisis; (c) the learners have re-defined some aspects of the self; and (d) the learners question their previous values or beliefs. Unlike Roger's emphasis on the role of instructors in the processes of learning, Brookfield instead focuses on the outcomes of learning in terms of self-changes.

Research focusing on meaningful learning is not limited to research using the exact term, meaningful learning. *Relevance* and *meaningfulness* are two major constructs used in researchers' discussion of meaningful learning. In their conceptions of these two terms, researchers also describe characteristics of meaningful learning that will motivate learners to seek further learning opportunities.

Keller (1984) defined relevance as one of the conditions of learning that have to be met for learners to become and remain motivated to learn. He claimed that the learners' perceived relevance of instruction can come from either the learning content or from the way it is taught. If course instruction provides an individual learner opportunities to satisfy his or her needs, the learner has a feeling that "this course is for me," and perceives the learning as relevant. Relevance refers to those things (i.e., taught content or the learning processes) which the learners "perceive as instrumental in meeting needs and satisfying personal desires, including the accomplishment of personal goals" (Keller, 1987, p. 379). If learners' needs were not satisfied or their goals were not achieved through a particular learning activity, that learning would not be considered relevant. Keller's conception of reference represents those people who carry the pragmatic perspective as a premise to learning: they would only consider learning

meaningful when it is consistent with their previous needs or goals which are already in mind.

Within the field of instructional design, scholars have used the principle of meaningfulness as a guide to motivate learners to promote transfer (Reigeluth, 1983; Yelon, 1996). Reigeth considered learning to be meaningful if it involved learners relating new knowledge to their prior knowledge. Later, Yelon (1996) in a definition broader than Keller's, defined meaningful instruction as:

> helping students make a connection between a topic to be learned and the students' past experiences, present situations (needs, interests, values), and future goals to motivate the students to learn, as well as to use their newly acquired knowledge. (p. 7)

Similarly, researchers in the field of curriculum development have considered the problems of boredom (Rowles, 1981) and decontextualization (Darlington & Dake, 1994). They tried to increase meaningfulness of course instruction by integrating disciplines into related curriculum and by situating course instruction in the contexts of everyday living.

These educational psychologists' conceptualization of relevance and meaningfulness cluster around two major characteristics: intentionality of human behavior and subjectivity of individuals' cognition in learning situations. From those researchers' perspectives, learners were not only learning to get needs satisfied, but were setting goals for their learning and evaluating the importance of engaging in that learning.

Some scholars have considered meaningfulness as a much broader context--the meaningfulness of a serious life. Meaningfulness of learning is related to how a person views the meanings of life. Klinger (1977), for example, who investigated people's sense of life meaning, viewed meaningfulness as an individual's incentives:

> When it comes right down to specifying what makes their lives meaningful, people turn to the incentives in their lives- the personal relationships, job goals, recreational activities, inner experiences, and simple daily pleasure that people spend most of their time pursuing and enjoying. The more of these that occupy them, the more meaningful their lives feel and happier their mood. Meaningfulness seems to arise out of people's relationships to their incentives; these, therefore, would seem to be the place to look for its sources and effects. (pp. 9-10)

Klinger's view on meaningfulness implies that a person feels his or her life meaningful when the person possesses goals to achieve. Klinger's interpretation of meaningfulness as incentive is similar to the instructional design researchers' emphasis on goal concept when they defined meaningfulness. However, he claimed that to have goals be achieved is not enough to make a person feel his or her life meaningful. The achievement of the goal should bring about affective involvement and excitement, as Klinger (1977) explained:

> they derive their sense of meaningfulness from involvements with significant incentives, incentives that are still fresh and powerful enough to command affective responses. In contrast, people become unhappy in various ways when their life situations fail to provide them with these sources of meaning, either because people lack the necessary personal relationships, goods, abilities, or freedoms, or because the incentives available to them have lost their power to command affect. Thus, when someone repeats a satisfying activity to the point of satisfaction and it leads to no further goals beyond itself, it comes to feel futile. (p. 314)

Summary

Through reflecting on this varied literature on meaningful learning, I noticed several characteristics of meaningful learning either in terms of learning outcomes that are desired by the learners or in terms of learning processes that are valued by them. Growth of intelligence and change of personality are the crucial features of learning outcomes that make the learning experience meaningful and valuable. The kind of growth

or change is explained broadly as "eyes opened," "mind developed," "achievement of understanding," or "acquisition of new meanings." Growth can also be observed when the learner has related new knowledge to their prior knowledge, met current incentives, achieved personal goals, and been able to apply learned knowledge to a new situation. Meaningful learning is also described as a process in which the learner is helped to become curious, to understand, to find new meanings, and to make connections between topics. Instructors' personality and their relationship to learners have been emphasized by researchers characteristics of learning situations in which there are meaningful learning processes.

Meaningful Learning for Practicing Teachers

Although issues of meaningfulness of learning have not been the main focus of research on teachers' learning, there has been literature documenting teachers' perceptions of their inservice learning and those learning experiences, which they find valuable.

Growth on Teaching Professional and on Self: The Outcomes of Meaningful Learning

Lange and Burroughs-Lange (1994) interviewed 12 experienced elementary school teachers in Australia. They asked the teachers to talk about the memorable experiences in their professional lives. They found four characteristics of significant experiences that experienced teachers considered salient and memorable in professional development:

a. Individual perception of the professional challenge;
b. Gaining an understanding of the nature of the professional challenge;
c. Having access to sources for resolving the challenge and for extending professional learning;
d. Adopting strategies for resolving uncertainty which in many cases lead to professional growth. (p. 622)

The issue of professional growth is central. It contains having an awareness and understanding of the professional challenges, and adopting strategies for eliminating uncertainty and solving the challenge.

Teachers often raise the issue of practicality when explaining why some in-service learning experiences are worthwhile and others are meaningless. For example, Day (1993) interviewed a group of practicing teachers about their experiences participating in several types of professional development programs. Teachers' learning activities included: sharing a day's course with other schools; visiting other schools to look at aspects of good practice; taking time out with a colleague to put together a syllabus; visiting colleagues in other classrooms in their own schools; exchanging materials between schools; in-school training days; and out-of-school training programs.

Day (1993) reported on the negative sides of teachers' responses to course learning:

> Some of the courses that are run are not as practically relevant to us as we'd like them to be. There's a lot of theory, whereas what we're mainly concerned about is getting in there and doing it at ground level. (p. 128)

> Some of the courses tend to be overbalanced by the theory of it and not heavily committed enough to the practical application in school, which for the classroom teacher is the priority. (p. 128)

On the positive side, some teachers valued the course learning, for example:

> The course I went to was most worthwhile. It was over five Mondays... We had two days looking at the National Curriculum, and coming up with ideas that he gave us, instead of trying to pick our brains to see what we did...I've tried a lot of the ideas out with the class...and that course renewed my thinking... (p. 128)

> For me it's been a great self development to be able to participate in the science course. It broadened my horizons... and opened up vistas for me as an infant teacher that I would never have thought possible...You're learning different things by meeting other colleagues, by observing what

> other people are doing...Whilst you're learning anything, what ever it is, if it's contributing towards school, you're developing your skills as a teacher, you're learning different things. (p. 129)

Davies (1993) reported in-service teachers' reflections on their learning about action research:

> There was a lot of value. It widened my experience and gave me deeper insights- a greater knowledge of my colleagues and what makes things tick. It was psychologically useful...It made me reassess myself-I had to come to terms with myself. I had to go from being a qualified teacher who knew it all to someone plunged into a new situation in an environment I usually thought of as safe. I had to reorganize myself and change my thinking. And sometimes with a longing for a return to the familiar old ways. It was all very difficult but very challenging...It widened and deepened my understanding of the parameters of education-- it was about introducing experience that would be educational for pupils and teachers alike...The project was heartening in that it seemed something was getting done. It was not static; it was a process evolving. (p. 148)

These teachers' words remind me that some experienced teachers find learning meaningful because it entails deep reflection on and discovery of the self. Their focus seems to be on something more than practicality for teaching, and particularly on new ideas. The statements from Day's teachers give the impression that practicing teachers value learning that is closely related to their school teaching. Some teachers emphasized the practical "action," whereas others were satisfied with the experience of renewing their thinking and ideas about learning, teaching, or schooling.

Doyle and Ponder (1977) analyzed evidence from several studies of in-service education to understand why teachers did or did not adopt teaching practices recommended by the in-service training. They concluded that teachers' perceptions of practicality might influence their decision regarding adoption of the recommendations. Teachers' perceived practicality refers to "an expression of teacher perceptions of the

potential consequences of attempting to implement a change proposal in the classroom" (p.6). The concept of perceived practicality, seems to be close to Keller's (1984) concept of relevance which was defined as instrumental for accomplishing personal goals.

This concept helps to understand what teachers mean by practical. If teachers foresee the potential consequences of the use of learned skills or knowledge, they will be more likely to try it and will be more likely to view the learning as meaningful. This utilitarian perspective on learning is reminiscent of Whitehead's (1929) concept of inert ideas or so-called inert knowledge. Whitehead defined inert ideas as "ideas that are merely received into the mind without being utilized, or tested, or thrown into fresh combinations" (pp.1-2). He claimed that ideas or knowledge are positively harmful if not utilized: "By utilizing an idea, I mean relating it to that stream, compounded of sense perceptions, feelings, hopes, desires, and mental activities adjusting thought to thought, which forms our life" (p.4). Both concepts of perceived practicality and inert ideas imply that learning can become a meaningful experience only when it performs functions in everyday life.

The following concepts--perceived professional needs, teachers' concerns, and teaching priority--are not directly related to the definition of meaningfulness of learning. Those concepts, however, might play roles in teachers' explanation of why a particular learning experience is meaningful. For example, a teacher may perceive a particular learning experience as meaningful because it satisfied his or her current professional needs. Another teacher may find a learning experience meaningful because that learning provide opportunities allowing the teacher to work on his or her lasting concern of teaching.

Perceived professional needs. Researchers tried to understand what teachers perceive as their needs for learning to teach better. For example, Abu Bakar et al. (1995) used The Science Teacher Inventory of Need (STIN; Abu Bakar et al., 1988), which they developed to investigate science teachers' perceived professional needs. They defined this concept as the "felt discrepancy between what a person wants and what he or she has" (Abu Baker ET al., 1995, p.2). Thus, the perceived professional needs of science teachers are the things the science teachers feel they need to successfully fulfill their professional roles. The inventory includes teachers' perceived needs in the following domains:

a. specifying objectives for science instruction
b. diagnosing and evaluating learners in science instruction
c. planning science instruction
d. delivering science instruction
e. managing science instruction
f. administering science instructional facilities and equipment
g. self-improvement as a science teacher.

Teachers' concerns. Fuller (1969; Fuller & Bown, 1975) investigated teachers' concerns. He found that, compared with pre-service or beginning teachers, most experienced teachers were more concerned with pupils than with the teaching situation or with self. This research supports the view that experienced teachers might view learning about pupils (for example, learning about pupils' mathematical thinking in the CGI program) as meaningful because it fits their current concerns.

Compared with the concept of professional needs, the concept of teachers' concerns emphasizes developmental stages or the long-lasting needs of teachers. Professional needs, in contrast, focus more on teachers' immediate needs in their current teaching situations. Some teachers may find learning meaningful when their current needs are satisfied. Some other teachers may find learning meaningful when they find solution to their long-lasting concerns.

Teaching priority. Pino (1991) had teachers rank their priorities for instruction. Teachers participating in his study ranked the following elements of teaching (from most important to least important): methods; curricula; materials; advocacy; teacher preparation; travel opportunity; testing; articulation; requirement; research; career application; and professional organization. This research sheds additional light on what knowledge teacher's value. If teachers learn knowledge to which they give a high priority, they may find learning meaningful.

Little research in the field of teacher learning and teacher education focuses directly on meaningfulness of learning. Rather, the emphasis has been on teachers' knowledge, teachers' characteristics as learners, the nature of teachers' learning processes, and teachers' roles in learning and professional development. Teacher educators and researchers have examined the knowledge influencing teachers' practices and how teachers put learned knowledge into practice. Although this body of research is not aimed at finding teachers' perspectives on meaningful learning, it reflects the kinds of learning teacher educators and researchers (some of whom are teachers themselves) view as meaningful learning to teachers.

For example, Carpenter, Fennema, Peterson, Chiang, and Loef (1989) derived knowledge from research on children's learning and taught the body of knowledge to inservice teachers. This group believed teachers need knowledge about children's learning to teach effectively. They assumed that teachers would draw on this knowledge in ways that would transform their teaching and improve students' learning. Results of the study supported their hypothesis.

Other researchers (Ball & McDiamid, 1990; McDiarmid, 1995) have argued that teachers need to have strong knowledge about the subject matter or curriculum to teach all students appropriately. Another group of researchers (Shulman, 1987) proposed that a significant amount of teachers' knowledge is pedagogical content knowledge, which is knowledge about how to teach a group of students specific subject matter.

Other teacher educators have argued that not teachers need to learn not only about children's learning psychology, content knowledge, and general pedagogy, but they also need to learn about educational policy and ecology (Dean, 1991).

No matter what kinds of knowledge these teacher educators and researchers promoted, they explicitly expressed their opinions on which knowledge is good for teachers to learn. The researchers' implicit assumption is that teachers would find learning the recommended knowledge meaningful.

Situated Learning Processes

Another group of researchers has tried to understand the nature of teachers' learning processes and to understand how to support teachers' learning. An important debate among researchers about appropriate professional development models arises from different perspectives on teachers' learning. Some researchers have criticized the

decontextualization of traditional in-service teacher training, which they argued, has not satisfied the needs of teachers and schools. Others, however, have argued that the learning setting is not the issue (Shower, Joyce, & Bennett, 1987) and that teachers can learn successfully in well-designed instructional conditions regardless of the setting. According to this argument, even the traditional training model could play a successful role in teachers' learning if teachers' prior knowledge is appropriately taken into account (Tillema & Imants, 1995). In all of these cases, researchers and teacher educators have tried to find what learning models best-fit teachers' characteristics as learners.

Sparks and Loucks-Horsley (1990) identified five types of professional development models based upon different assumptions about learners' characteristics and the nature of learning. The *guided staff development model* assumes that teachers are capable of self-directed learning and the teachers' learning should be initiated and designed by teachers themselves. The *observation/assessment model* provides teachers' opportunities to learn to teach through feedback from other's observation of their teaching. This model assumes that teachers learn through reflection on information about their own teaching. In *the development/improvement process model*, teachers develop curriculum or engage in school improvement, on the assumption that teachers learn best when they know the needs of their schools and participate in the planning of school improvement. The *inquiry model* is based on an assumption that teachers have the ability to formulate questions about their professional development and to conduct independent inquiries about school teaching and learning. All four models of teachers' professional development are grounded in a fundamental assumption that teachers' learning should be situated in their work. Similarly, a number of scholars have argued that a situated

perspective on cognition can provide a useful framework for considering teachers' learning processes and teachers as learners (Feiman-Nemser & Remillard, 1996). They argued that teachers' learning should be situated in the contexts of teachers' teaching. It is worth noticing that some researchers (Putnam & Borko, 2000) argued that teachers' learning can be thought of as situated in a number of different contexts, not just their own classrooms.

This body of research reveals researchers' underlying premise that the meaningfulness of teachers' learning grows out of appropriate learning models. If the setting and process of teachers' learning experiences fit teachers' unique characteristics as learners, for example, self-directed or practice-oriented, teachers may perceive their learning as a meaningful endeavor.

Summary

Practicing teachers and researchers have both emphasized that teachers' growth in various domains of knowledge for professional practice is the major criterion for the meaningfulness of teachers' learning. Some teachers also recognized the value of self-growth in their learning. The aspect of process is rarely mentioned.

CHAPTER THREE

METHOD

What kinds of in-service learning do practicing teachers appreciate, believe to be worthwhile, want to experience again, and find supportive in becoming willing to seriously commit to learning? How do teachers who share instructional events differ in what they consider to be meaningful learning? I pursued these two research questions through a descriptive case study focusing on nine experienced teachers who as a group took five courses during their 6-week residence at the same Taiwanese summer certification program at which I visited my friends Tai-Ang and Wei-Yi, and at which I interviewed a group of experienced teachers for my practicum research.

Design

I chose a case study approach to pursue these questions because the teachers' learning experiences and their perceptions of those experiences are situated in the interaction between the teachers' selves and the learning environment. A case study would be more appropriate than a single large sample survey study to have access to the learning environment and to the teachers' thoughts on and reactions to particular kinds of learning experiences.

No researcher would be surprised to find that teachers would not become bored when asked to talk about the learning experiences they found meaningful in their lives. Many teachers can tell their stories for hours. If a researcher listens carefully, he can learn from the stories what teachers remembered most and how they interpreted the shining moments in the individual's learning career. A researcher can rely only on each

teacher's memory however to know what happened in those learning events, the teacher recount, which will lead to a problem, for a researcher has only the teachers', not the researcher's perspective on the learning events recounted. Besides, without having shared the experiences of the particular learning events, the researcher may find it difficult to develop meaningful conversations with the teachers about the precise nature of the meaningful learning experiences that particularly impressed the teacher responding. I therefore chose to do my case study by sitting side-by-side a group of teachers in their classes as they learned, so that I could experience with them the instructors, the course content, and the instructional activities, thus enabling me to develop more knowledgeable conversations with my group of teachers, and to better understand the kinds of learning they experienced and found meaningful.

Using Yin's (1994) suggestions for the design of case studies I focussed on three issues: (a) types of research questions, (b) control of investigators over observed phenomena, and (c) focus on observed phenomena. Yin (1994) suggested that case study is chosen "when 'how' or 'why' questions are being posed, when the investigator has little control over events, and when the focus is on a contemporary phenomenon within some real-life context"(p. 1).

The first research question of this study accordingly became: "What kinds of learning do experienced teachers find meaningful?" Theoretically, a large-sample-sized survey study should be more appropriate than a case study to pursue a "what" question, since the former approach would allow researchers to collect a comprehensive list of those kinds of learning teachers find meaningful. A narrow case study would not help a researcher to obtain a wide range of teachers' perspectives on meaningful learning

especially when there are no research findings on the issue available from previous systematic investigations. One major concern I had with the design of the survey study was that a single large- sample survey might not allow participant teachers to report their experiences and perspectives in adequate depth. In addition to this concern, I mentioned earlier in this section that the researcher would not be able to develop significant conversations with each teacher to learn about what he or she found meaningful. In sum, I was concerned with the validity of data collected through a survey study. In contrast, I was more confident with the validity of data collected by means of a case study because it would allow me, as a researcher, to observe the situations in which the teachers' learning took place and would create a situation for the teachers and the researcher to converse knowledgeably about shared.

The case study is particularly appropriate for pursuing the second research question of this study, i.e., How do teachers who share instructional and learning events differ in which respects to what they find meaningful? because it will allow me to analyze teachers' responses, all of whom, including the researcher, all are learning simultaneously common materials in a common classroom, being taught by the identical instructors or instructional staffs.

Considering the issue of investigators' control over the observed phenomena of teachers' experiences on meaningful learning, I had, in fact, almost no control over the participants' learning since I played no instructional role in this specific learning experience. However, my research is aimed at identifying meaningful learning experiences through the teachers' eyes, rather than on changing teachers' perspectives on learning through intervention. Although there might be minor effects on teachers'

reformulating of their perspectives by inviting them to reflect on this particular learning experiences, reformulation of the perspectives was not the intent of the research. In summary, a case study approach is appropriate for exploring the phenomena of teachers' learning experiences and their views on those experiences.

Finally, the focus of this particular research is the teachers' perceptions of their learning experiences, not some imaginary or theoretical ideas of what constitutes meaningful learning. Although the term "meaningful" learning itself seems to imply an ideal image of learning, its significance, in fact, is based on the teachers' current perceptions of a single shared experience that took place in a learning environment. When teachers identify a learning experience as a meaningful endeavor, they are actually reporting the perceived values of some facts that had, at some level, already occurred to them, as Abraham Maslow (1966) has claimed of his subjects, who were reporting both values and facts of the world when they were asked to describe how the world looked different to them when they had, as he labeled them "peak experiences." In my study, teachers were not asked merely to comment on "good learning," which each teacher identifies his own percepts what learning should be like, but each is asked to describe the shared of their particular learning experience. Thus, the case study is the appropriate vehicle for the focus of this particular study, a diagrammatic overview of which is presented in Figure 3.1.

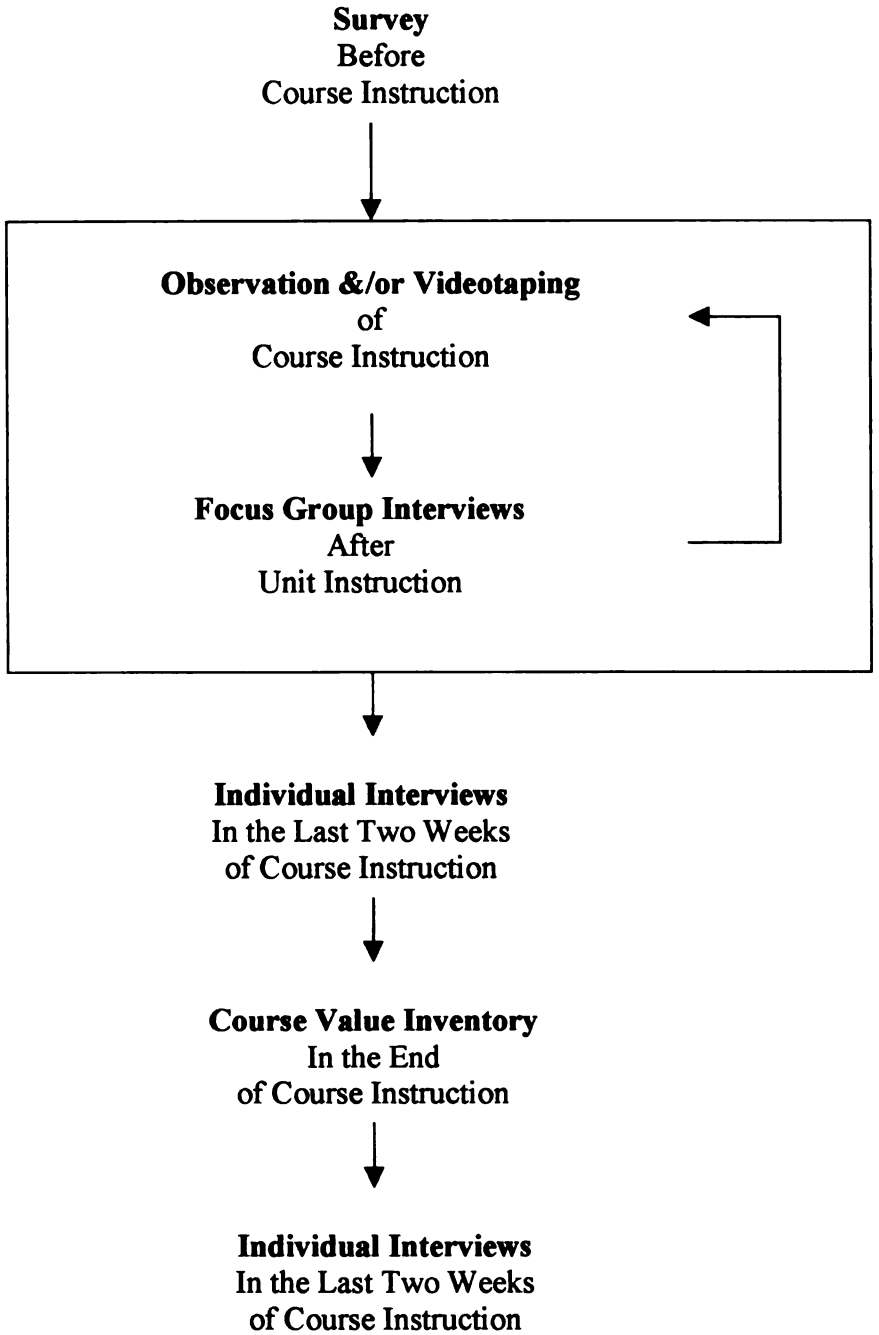


Figure 3.1. Overview of the research design.

The survey served the purpose of obtaining an overall understanding of teachers' perspectives; participating observation of the understandings of instruction; focus group interviews for deeper understandings of teachers' perceptions of learning meaningfulness; and individual interviews for understanding individual teachers' perspectives. The major data were from the focus group interviews. The reason for choosing focus group interview was that participant teachers might have opportunities to explain their perspectives on learning meaningfulness to others in a group, in which a variety of different perspectives could be brought into the discussion (Vaughn, Schumm, & Sinagub, 1996).

Subjects and Contexts

Nine experienced teachers voluntarily participated in the study at the time they were all taking five courses in common in the summer program in Taiwan in which my friends, Tai-Ang and Wei-Yi, had earlier completed.

Participant Teachers

I visited a group of 41 experienced middle school teachers who were taking courses in educational research methodology, educational statistics, instructional measurement, computer application to education, and counseling techniques, as required by the curriculum for their third year in the summer program. All teachers were experienced, having taught in middle schools for more than a five-year minimum. Nine of the teachers volunteered to participate in this research. The participant teachers' demographic backgrounds are listed in Table 3.1. They taught a variety of subjects in their schools, except for one participating teacher who worked exclusively as a school counselor who was not teaching any subjects in his school.

Table 3.1

Participant Teachers' Demographic Backgrounds (N=9)

1. Gender	Frequency
Male	2
Female	7

2. Highest degree earned	Frequency
B.A.	8
Summer M.A.	1

3. Age	Frequency
33-34	3
44-45	2
48-49	2
51-52	2

4. Major	Frequency
Biology	1
Chinese	1
Educational Administration	1
Edu. Psy. & School Guid.	3
Political Science	1
Public Administration	1
Transportation Management	1

5. Teaching Length	Frequency
7 years	1
9-10 years	2
20-21 years	2
25-26 years	3
28 years	1

6. Teaching Positions	Frequency
Subject Matter Teacher/Adviser	3
Subject Matter Teacher	1
Subject Matter Teacher/Scout Dir.	1
School Counselor	2
Chief of Department	2

7. Teaching Subject	Frequency
Accounting	1
Chinese	1
Civil Education	2
Geography	1
Guidance Activity	3
None	1

8. Size of Class	Frequency
30 students	1
39-41 students	3
45-48 students	2
50-52 students	2
None	1

9. Teaching School	Frequency
Junior High School	5
Senior High School	1
Junior/Senior High School	1
3-year Vocational High School	2

10. School Location	Frequency
Urban	4
Suburban	2
Small Town	2
Country	1

The Summer Program

The summer program was a four-summer program that was sponsored by the Taiwan government and offered by a university to enhance secondary school teachers' competencies in school guidance. Any secondary school in-service teachers were eligible to apply for this program, regardless of whether their major areas or teaching subjects were related to school guidance. Teachers applied one year in advance to attend the program, with 35 to 40 teachers admitted each summer. All attending teachers in the program were required to take at least 40 credits (about 20 courses) and to write an educational research report covering the four summers. After completing the requirements, teachers were awarded a certificate of mastery study in the area of school guidance and would receive promotions and salary increases as holders of that certificate.

After reflecting on my practicum research, I saw a need to revisit the summer program to investigate teachers' perspectives on meaningful learning. Some members of my dissertation committee questioned why I chose this site to study teachers' perspectives instead of other learning situations, such as professional development programs, in which teachers are actually doing the teaching, as are many programs that are currently highly valued by some researchers, teacher educators, and teachers (Hargreaves, 1994). In my understanding, each type of professional development program has its unique function and limitation and teachers may experience meaningful learning in any of several different types of teacher education programs. Therefore, I did not choose a program to study for that program was particularly successful or problematic.

I chose this summer program to investigate teachers' learning for two reasons. First, the type of teacher education program involved teachers in long-term learning (four

summers) rather than in one-day workshops or one-week's training. Teachers especially need to experience meaningful learning to support them to continue the long journey of learning and teachers would have more chances for contact with instructors and subject matter in a more extended program over a period of four years and teachers would be more likely to reflect on their learning and its meanings to them than in courses lasting from a single day or even a single week. Second, Taiwanese view the university as a place for their students' exposure to new ideas, knowledge, or techniques, where they learn diverse perspectives or opinions on education. When in-service teachers are invited to the university to learn from experienced educators, it is expected that students listen open-mindedly, think critically, and explore ideas creatively. Many experienced teachers in Taiwan view the university as a good place to refresh their minds and explore new concepts in a climate which promotes attitudes and a disposition favorable to lifelong learning. If teacher educators can learn more about the kind of teachers' learning taking place in the sort of educational climate which will be more likely to help teachers encounter more meaningful learning experiences which will encourage them in becoming lifelong learners. It was because of my interest in teachers' finding the motivation to become lifelong learners that I chose to do my research at this four-summer university-based professional development program.

The program offered five courses for the third-year teachers, courses which were to be completed by the group of teachers within six weeks. None of the five courses was required, but most of the teachers took all five course during that summer since teachers needed to take 20 courses during the four summers and the program usually offered five courses each summer. Some of the participant teachers took four courses that summer

because they had taken more than 10 courses in the first two years. Teachers took courses with their cohorts. Because of the structure of the curriculum and scheduling issues, no teachers took courses that were offered for those students at another level of the 4-year program of students. For example, the third-year teachers did not take courses offered for only the fourth-year teachers/students.

Instructors who taught in this summer program were full-time (12-month) faculty employed by the university. They all had Ph.D. or were full professors, receiving additional payment for teaching in the summer program.

Limitations

Generalization of this research finding is limited to in-service teachers because of the limited cases of participant teachers in this study. This group of teachers' perspectives cannot represent the views of all experienced teachers' views on learning nor be considered to be typical of all learning situations. Nevertheless, the ecological validity of these research findings is high because of the density of the collected data within its parameters of daily research over a six-week period of the learning experience of a stable group of participants.

Variables

This study explored three groups of variables: (a) teachers' perspectives on meaningful learning; (b) teachers' disposition; and (c) course-instruction-interaction.

Teachers' Perspectives on Meaningful Learning

It seemed that the most direct way find an answer to the question about the teachers' perspectives on meaningful learning would be to ask each teacher his definition of the term, "meaningful learning," a task that sounded simple but in reality was not easy

at all. A simple definition could not possibly explained any person's understanding of the philosophical and practical information of the term "meaningful learning," nor could I obtain a better understanding of the teachers' thoughts about their learning solely by means of their definitions of "learning." Therefore, I chose to ask teachers to identify first those learning experiences they had found meaningful and then explain to me why those experiences were meaningful to them.

Another problem of understanding teachers' perspectives on meaningful learning is how teachers interpret the semantic meanings of the word "meaningful". When working on my practicum study, I asked thirty-two elementary and secondary teachers questions: "Among the courses which you have taken in the program, which courses do you think most helpful or meaningful for your personal development? Why?" and "Among the courses which you have taken in the program, which courses do you think most helpful or meaningful for your vocational development? Why?" All participant teachers could name and describe meaningful courses and could explain to me why those courses were meaningful to them. Most reported that which courses helped them to get new understanding and to be useful in personal living or teaching were judged to be meaningful. Few teachers reported that they found learning itself to be meaningful, regarding that aspects of the experiences simply the acquisition of a practical skill. Teachers' common responses to my questions about "meaningful" course learning experiences were generally that they appreciated those experiences which led to a deeper understanding or to a new and different views from their own. It appeared that meaningful learning to these teachers was primarily the gaining of fuller understanding of a subject. However, when I was doing my practicum research I came across an event that

I called "restroom shock" and which led me to be aware the problem of asking teachers question with the term "meaningful."

When I was doing my practicum research several years ago, I observed participant teachers' learning in a course about computer application in education on the last day. The instructor was teaching the second unit of that course: how to use statistical computer software in analyzing educational research data. Instead of teaching that software, the instructor first gave an introductory lesson about how to pursue an educational problem by conceptualizing problems, formulating research questions, and considering research approaches and analysis methods. I found that lecture was very well organized and was really helpful for learners to know the function of the statistical computer software in the processes of doing research. I, as a researcher-learner, personally appreciated that lecture very much. In the break, I went to rest room and heard three participant teachers complaining that the instructor was wasting time in talking nonsense and not teaching how to use that software immediately. I was shocked that the three teachers were not enjoying the lesson which I had thought enlightening and helpful when I later checked those three teachers' interview records, I was more surprised. One teacher reported that meaningful courses those that were practical and which helped to reflect her own thinking. The other teacher reported that meaningful courses helped her to observe and to reflect on her own habits, to regain self-esteem and her learning ability. The third teacher reported that meaningful courses helped her to review learned knowledge and to gain new understanding of it.

I wondered why the teachers seemed bot to appreciate that lesson if they were truly enjoying the courses which helped them to gain new understanding. My sense was

that any lesson, if taught well, should help teachers to understand the goals of research work. They might perceive their effectiveness differently from one another, certainly, but I did not now know what teachers really meant by "meaningful" learning, apparently regarding it with "useful" or "understandable." "Meaningful" is a word commonly used in Chinese society. Teachers and I took it for granted that we shared the meanings of the word and used it to categorize past experiences and to analyze them. However, the results of my practicum research were that I found I did not know now what teachers really meant when they used the word "meaningful."

Considering the linguistic and media issues, I asked participant teachers of these study questions situated in both general and specific contexts by means of both paper-pencil surveys and face-to-face interviews. Every participant teacher was asked to write in a pencil-paper survey to describe and explain meaningful learning experiences in different contexts, e.g., in general, in in-service teacher education, in a university setting and in a particular teacher education program (See Appendix A, Part IV). Asking teachers to recall their learning experiences taking place in different situations and stages is a strategy used to learn what kinds of learning they found meaningful. In the instruction included with the assignment, I used the term "meaningful" in contrast to two types of learning experiences.

> In your life, you have experienced learning in many different settings, for example, at home, in school, in museum, in your work, etc. You might find yourself bored, confused, or frustrated in some learning experience, while in other situations, you appreciated your learning and found it meaningful. Think of some learning experiences you found meaningful and respond to the next two questions.
>
> 14. Describe that learning experience(s) briefly.
>
> 15. Why was that learning meaningful for you?
>
> (Appendix A, Part IV)

Although I still left the meanings of "meaningful" open in the survey, I tried to lead teachers to identify those learning experiences they appreciated.

In the focus group interviews, I gave teachers my definition of "meaningful" learning:

> Meaningful learning is learning that teachers appreciate, believe to be worthwhile, want to experience again, and find supportive in becoming willing to commit to learning seriously.

I asked teachers, according to the definition, to identify those kinds of learning which they were experiencing currently in the five courses in the summer program and to explain to me why that learning was meaningful to them. With this information, I understood that the kinds of learning related more to teachers' attitudes toward lifelong learning and I understood better what teachers meant by "meaningful" learning experiences. In addition to the data collected by survey and interview, I used Course Valuing Inventory (Nehari & Bender, 1978) to measure teachers' final overall perceptions of each course.

Teachers' Disposition

Two groups of variables of teachers' disposition to learning were measured by the survey in this study.

Demographic background. This group of variables includes teachers' gender, age, education and teaching experiences. All of these variables were treated as nominal variables and were measured by survey (see Appendix A, Part II, III, and I: Item 1 to Item 11).

Teachers' prior knowledge of subject matter. This variable was measured by the survey. The subject matter knowledge refers particularly to those courses which participant teachers in the summer program when I did the fieldwork for this study (see Appendix A, Part IV, item 28). Teachers responded to 5 point Likert scales in the survey.

Course-Instruction Interaction

This is a description of the course interaction and reactions to the classroom instructions, in the classes which all participant teachers attended that summer. The description is based upon my observation of the classroom instruction in each of the five courses.

Instrumentation

Experienced Teachers' Learning Survey

I developed the survey (See Appendix A), first, I writing it in English. Then, I modified it by discussing it with my dissertation director, Dr. Ralph Putnam. Subsequently, I translated the survey into Chinese and did a pilot study, using the services of two teachers whose native language was Chinese. I, finally, changed some of words of the survey based upon the two teachers' recommendations.

Classroom Observation Guide

I developed an observation guide (See Appendix B) for taking notes in classroom observation. I changed the observation guide during the process of instruction.

Focus Group Interview Guiding Questions

I developed a focus group interview guiding questions (See Appendix C) for the purpose of leading focus group interviews. The two major guiding questions were:

"According the definition of meaningful learning, which learning events did teachers find meaningful among the five courses?" and "What reasons did teachers gave for their perceptions of those meaningful learning experiences?"

Focus Group Interview Room

The summer institute assigned a group counseling room for me to run the five focus group interviews during that summer. The room was located in the same building as the classrooms but on different floor. It was not an open area, but it was used only by researchers or counselors for private activity and conversations. I set two big tables together and arranged 9 chairs and 2 tables for the participant teachers, facing to the blackboard. One video camera was set behind the group of teachers; one audio recorder was put at the center of the tables. I used the blackboard to write down teachers' comments, which they made in the group interviews. The arrangement of the room for the focus group interview is shown in Figure 3.2. Participant teachers knew the video camera and audio tape recorder were being used to keep records of the interviews for later analysis.

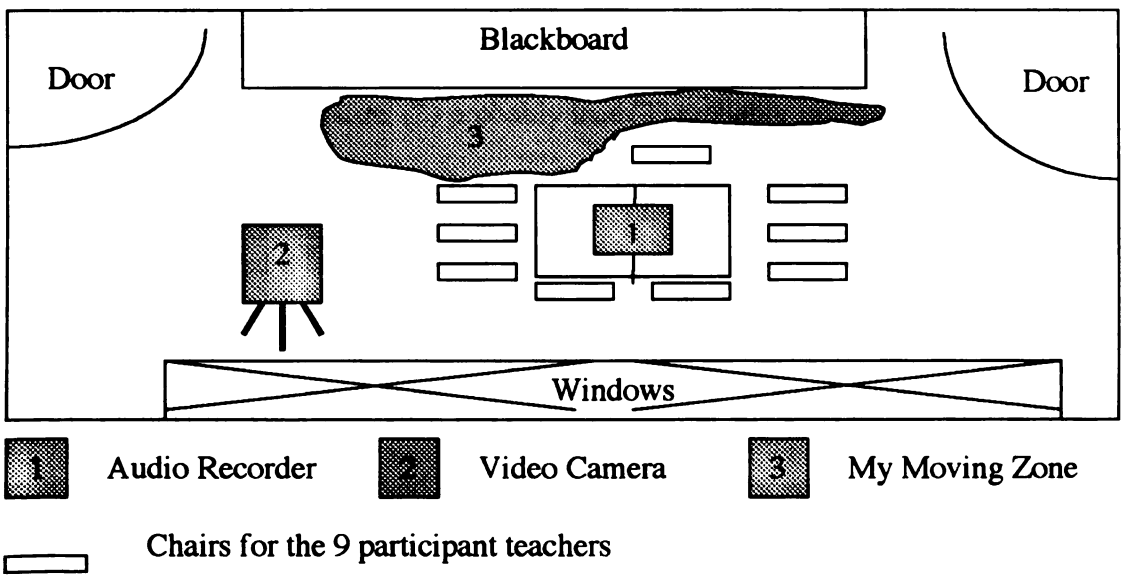


Figure 3.2. Furniture arrangement of the room for focus group interviews.

Course Valuing Inventory

Nehari and Bender (1978) developed the Course Valuing Inventory to measure learners' perceived values of a course learning experience. I translated this inventory from English to Chinese to understand participant teachers' perceptions of the learning each course that took place in that summer. I tested the Chinese versions of the inventory with the feedback from two graduate students who were taking courses in the university and whose native language was Chinese.

Nehari and Bender's inventory was used to measure undergraduates' judgment of the meaningfulness of a university course. It is reliable. The original inventory consists of 36 items on 4 scales, which 9 items in each scale (See Appendix D). Each scale represents a dimension of perceived meaningfulness and value of course learning. The four scales are course valuing, cognitive-content learning, affective-personal learning, and behavioral learning. Contents of each scale are shown in Table 3.2.

Scales with correspondent items are listed in Table 3.3. Fourteen out of the 36 items are reversed items. I translated all the 36 items from English to Chinese. The original inventory asked to respond to 4-point Likert scales indicating whether the statement is (1) positively true, (2) probably true (3) probably untrue and (4) positively untrue in each case. No neutral choice is given. Because of the change from English to Chinese, I considered it less confusing for participants for me to change to the more familiar 5-point likert scales (1) totally disagree, (2) partly disagree (3) not sure (4) partly agree (5) totally agree. The choice 'not sure' is a neutral choice. The survey was used at the end of instruction of observed courses for understanding variance of participant teachers' perception of meaningfulness of learning in the various courses.

Table 3.2.
Content of the Four Scales of the Course Valuing Inventory

Scales	Contents
Course Valuing	Refers to the extent to which a learning experience is judged to be valuable, meaningful, significant and positive.
Cognitive-Content Learning	Refers to the extent to which the learner feels he gained information and knowledge and an integrated comprehension of the subject matter.
Affective-Personal Learning	Refers to the extent to which the learner feels the course to have been a personal experience and in which he feels he gained awareness, sensitivity and understanding of self and others.
Behavioral Learning	Refers to the extent to which the learner judges the course to have had an impact on his behavior inside or outside the classroom, in his relations with others or with the content of the course.

(The table was modified from Nehari & Bender, 1978, p. 3)

Individual Interview Guide

I developed a guide (See Appendix E) for the use of individual interviews for better understanding of teachers' responses on the Experienced Teachers' Learning Survey and in their comments in focus group interviews.

Notebook for Summer Program Learning

I made one notebook (See Appendix F) for each participant teacher to keep notes relevant those learning experiences in the summer program which they found meaningful. Teachers could share their notes in the focus group interviews.

Procedures of Data Collection

I used to believe that I would collect data step by step with my planning. When I entered the field, I did some and I did not do the others. I realized that I had to change some of my plans. Looking back to what I had done in fieldwork, I knew I had made

some decisions appropriately and some poorly. Most importantly, after having completed all the fieldwork and reflected on the collected data, I realized that the ways I worked in the field had made me think differently of this research. In this section, I described exactly what I did in the fieldwork, and what changes I had made subsequent to the field work. A diagrammatic overview of this research procedure is presented in Figure 3.3.

Contacted Course Instructors

Before I began my fieldwork in the summer program, I contacted the instructor who was going to teach the computer course. He agreed to let me observe and videotape in his class, so I was sure that I would at least have one course to observe and knew which group of teachers would be candidates for my study. After I went back Taiwan that summer, I met all five instructors who were going to teach courses to the group of teachers in that summer program. All asked me details of my research and why I needed to observe in class. I explained to them that the purpose of my research was to understand teachers' perspectives on learning and I wanted to understand their perspectives with references to learning contexts. That is, I planned to ask participant teachers to talk about their current learning in the summer program in order to understand their perspectives.

I needed to be in the classes so that I could understand what learning facets were being introduced to them and could rose more appropriate questions when I interviewed them. I convinced them. However, I did not ask them to videotape or audiotape any portions of their instruction. I was satisfied to be allowed to observe all five courses and did not ask more! In addition, the counseling course was not appropriate for videotaping or audiotaping because teachers might share personal stories they did not care to have recorded because of their personal nature.

Table 3.3
Description of Scales and Items of Course Valuing Inventory

Course Valuing Scale
This course was a very valuable learning experience for me
I consider this learning experience as time and effort very well spent
This was (not) a meaningful learning experience
This course was a rewarding learning experience
This was (not) an inspiring course
This was a constructive and definitely helpful learning experience
I would like to take another course like this one
I would (not) recommend this course to a friend
Taking the course made (little) difference for me

Content Learning Scale
The course helped me to acquire important basic knowledge
I can now relate to the subject matter of the course from a wider perspective
I did (not) gain much information in this course
I am now better able to conceptualize problems presented in the course
My understanding of the subject matter has (not) increased much
The course helped me achieve a deeper understanding of the field
The course did (not) help me gain through knowledge of the field
I have now a much clearer integrated notion of the subject matter of the course
I have (not) been able to tie things together and make much sense of the content presented

Personal Learning Scale
This learning experience helped me to become more aware of my own feelings and reactions
This course had (no) impact on my personal growth
This experience helped me to realize this importance of my own feelings
I feel more perceptive of others now, and more sensitive to their needs
I understand better how others perceive me
In some ways I feel good about myself due to this course
This course had (no) impact on my understanding of my self
Some of my values have been clarified due to this learning experience
I think I have learned to be more tolerant

Behavioral Learning Scale
This course had (no) impact on the ways in which I communicate
In this course I had (not) achieved my own learning goals
Somehow I worked harder in this course than I usually do
This course was useful in helping me develop new ways of learning
Somehow I was more open and sharing
I participated in this course (less) than was actually expected
Somehow I have taken more risks in this course, and I feel good about it
I did (no) more reading or thinking than was actually expected
In this course I have taken more responsibility for my own learning than I usually do

In short, I was allowed to observe all five courses, with only the computer course being videotaped. The statistics instructor asked me to participate in all class activities, including answering questions in class, writing assignments, and taking tests. The counseling instructor asked me to do non-participant observation and give her feedback at the end of course.

Recruited Participant Teachers

In the first day of the summer program, the 2 co-instructors of the Research Method course introduced me to the group of teachers to recruit voluntary participants in this study. I had 20 minutes in which to introduce my research and myself. I used the "overt approach" (Biklen, 1992), telling the teachers my current role, my interests, and my research planning to seek teachers' cooperation in this study. Two of that group of teachers asked me questions about my research during these periods. After I explained my research to them, I gave each teacher a Letter of Invitation (See Appendix G) and the Assurance Form (See Appendix H). I read the letter and form to the teachers and asked them to return the forms to me whether or not they decided to participate in the study. That afternoon, I collected all the teachers' returned forms. Eight teachers agreed to participate in the study and formed a focus group. One more teacher asked to join the group on the day I had the first focus group interview. Since I had not prepared extra materials, I initially rejected that teacher, after the first group interview, I changed my mind and asked her to join.

Administered Experienced Teachers' Learning Survey

Eight of the nine participant teachers were given copies of the Experienced Teacher's Learning Survey (See Appendix A) when they returned the assurance forms to me.

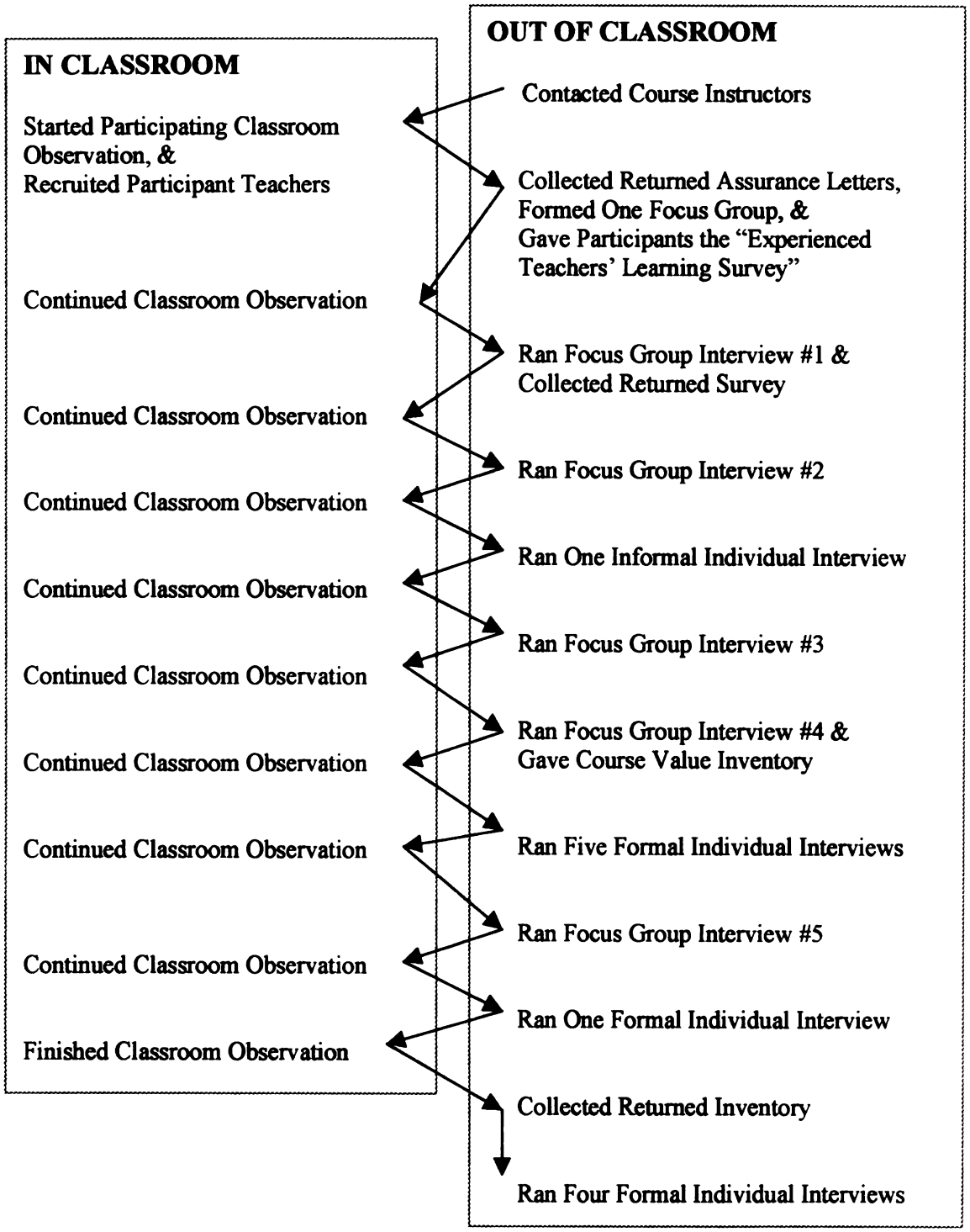


Figure 3.3. Overview of research procedures of fieldwork.

They were asked to bring the completed in surveys with when the focus group met a week later. The teacher who joined the study after the first focus group meeting was given the survey and asked to being it in also when the group met in the second group interview. I photocopied all teachers' returned surveys and returned the original surveys to the teachers.

Classroom Observations

I participated in all classroom instruction in the 5 courses and took field notes of the courses in class. Field notes included, among a variety of information, comments on the course instructional activities, instructors' behavior, and the teachers' general behavior, especially that of the nine participant teachers. The summer institute assigned one classroom to this class. All courses were taught in this classroom except the computer course, which sometimes used the computer labs. I sat in the back of the classroom and shared a table with two teachers (see Figure 3.4).

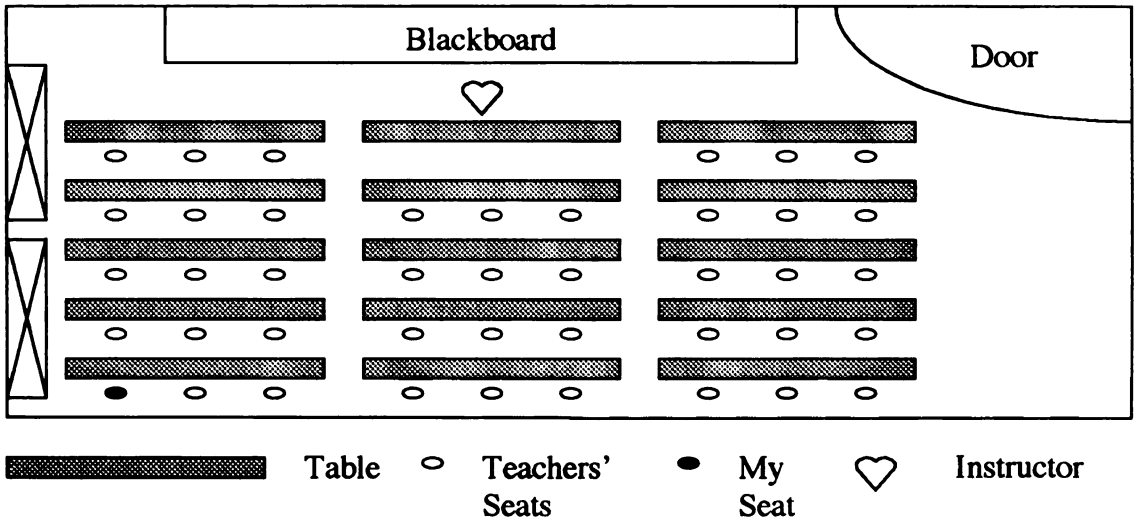


Figure 3.4. Overview of the classroom arrangement.

I decided to follow every lesson presented to that the group of teachers for two reasons. One was that both the instructors and teachers asked me to participate in all activities. The instructors repeatedly expressed that I would in this way better know the whole essence of the instructions. Some of the teachers were suspicious about what I intended to know about their learning if I only observed some lessons. I read from their faces the message: "Another superficial graduate student's study!" After I told them I planned to stay with them every minute that summer, most of teachers smiled at me but warned me that it would be a challenging journey. I was glad that I had insisted on attending each lesson with the teachers. Actually, I participated in all activities and shared the duties of arranging the furniture, for example, in class and after class. Some of the teachers asked me questions about their assigned English reading; some discussed with me their research proposals; some asked me to give a tutorial lesson in statistics to prepare them to teach their peers in class; some teachers chatted with me about their school work. The more days I attended classes with the teachers, the more they showed their friendships to me. Some teachers shared soft drinks and food with me; some asked me to join their chat during lunch break. Some teachers voluntarily told me their feelings about the summer program, even though they did not participate in my study. Some teachers explained that they were too busy to participate in my study but they would like to help me if I needed some help. If they participated in my study or not, the group of teachers were very supportive of me and my work. During the second week of my observation, I was sick, but I still attended every lesson. Two teachers gave me a box of vitamins, and asked that I should take them for health. Other teachers came to cheer me up. Although I was exhausted and sick, I attended all lessons with the group of teachers,

and I knew that I had made the right decision, because I could feel that teachers, as well as the five instructors, accepted me and became willing to share their feelings and thoughts about their learning with me in the summer program. This was the key to the completion of my fieldwork and, it led to a very happy research experience.

The other reason for my persisting in participating in all activities that summer was that I found that the instructions and learning activities were intensive and varied during the 6 weeks. I didn't think that I could have understood the participant teachers' comments in focus group interviews if I had missed classes.

Five Focus Group Interviews

The nine participant teachers formed one focus group and met one hour in each of the first five weeks that summer. The teachers were asked primarily to focus on memorable experiences in their professional lives.

I originally planned to have four to five teachers in each group so that each teacher might have sufficient chances to talk the in group meetings, as other researchers had suggested (Vaughn, Schumm, & Sinagub, 1996). Nine teachers are too many for a focus group. However, I found the schedule of summer program was very intensive and the participant teachers could only meet during the lunch break from noon to two o'clock, when they reserved classes. Some of the teachers needed to go back their own schools if there were no classes in the program. Some teachers needed to travel back home when there were no classes or when course schedule changed. All teachers needed as well to work after class on their individual projects and group projects, such as research proposals. Moreover, I found myself too exhausted to run two groups, besides participating in all five courses.

The focus group met five times during the six weeks of summer study. Each meeting lasted about 50 minutes, starting from 12:40 p.m. and finishing at about 1:40 p.m. There were about 40 minutes between morning classes (ending at 12:00 noon) and the focus group interviews, for teachers to have lunch. The class began at 2:00 p.m. in the afternoon. I ordered lunch boxes and soft drinks for the teachers whenever the group met so that they did not need to walk out for lunch.

In the first group meeting, I introduced the purposes of the group meetings, interview questions to be directed to them, the definition of meaningful learning, the kinds of information I wanted from the teachers in the group interviews, and the ground rules for the focus group. I explained all the details orally and also gave each participant teacher a written note of these factors (see Table 3.4). Three courses (Research Methods, Statistics, and Assessment) had began before the focus group met first time. The classroom instruction of the three courses was introducing course goals, agenda, activities, and assignments. Therefore, I did not ask the group to talk to the courses that they were currently taking in the summer program. Instead, I asked them to talk about the one meaningful learning experience that they had written about on the Experienced Teachers' Learning Survey. I used this as a warm-up activity for later focus group interviews. From the second group interview to the last group interview, I encouraged participant teachers, according to the given definition of meaningful learning, to identify meaningful learning experiences and to report their experiences, feeling, opinions, and reasoning as part of the group discussion, focusing on the five courses they were currently taking in the summer program. I posted on the blackboard each point teachers made in commenting on the five courses.

During the last minute of each focus group meeting, I checked with teachers the time for the next meeting, and one day before the focus group meeting, I gave each teacher a memo to remind them about the time for the next meeting.

I initially planned to run one group interview each week of the summer term. However, the class changed schedules and there were only two days of classes in the last week. The participant teachers could not find time to meet that week, so the group actually met only five times.

Individual Interviews

Each teacher was interviewed individually once during the last two weeks of the summer school. I used the individual interview sessions to get a better understanding of each teacher's perspectives based on the survey data and focus group interviews. The interviews ranged from 50 minutes to 2 hours. All individual interviews were audiotaped.

Course Valuing Inventory

I gave each participant teacher five copies of Course Valuing Inventory in the fifth focus group interview. There were two courses, Counseling and Statistics, that had not finished. Teachers brought the inventories home over a weekend. Six of the teachers returned the completed inventories to me during the last day of course instruction. Three of them mailed the inventories to me before I left Taiwan.

All group interviews were videotaped, audiotaped, and transcribed in Chinese. Observational and field notes relating to the school and to the interview context were also completed. Interview transcripts were returned to the teachers for checking and comment. These notes, dialogues, and transcripts formed the raw data for analysis.

Table 3.4

Teachers' Learning Focus Group Interview Guide.

Theme of the focus group interview:
Meaningful Learning.

Purposes of the group:
1. to help the researcher understand experienced teachers' perspectives on "meaningful learning";
2. to help researcher understand experienced teachers' value systems for evaluating learning experiences.

Interview Questions:
1. As an experienced teacher, what learning experiences did you find meaningful?
2. Why do you find those learning experiences meaningful?

Definition of the theme:
Meaningful learning is learning that teachers
appreciate,
believe to be worthwhile,
want to experience again, and
find supportive in becoming willing to commit to learning seriously.

Contents of Interviews
Do Want to Know:
Learning experiences and feeling occurring in response to current 5 courses of this summer program

Do Not Want to Know:
Learning experiences and feeling NOT occurring in current 5 courses of this summer program

Ground Rules:
1. Silence is acceptable.
2. Interruptions are policed, one may raise hands to let the moderator know.
3. Evaluation is deferred.
4. Disagreement is acceptable, but personal attacks are not.
5. Interviews are to begin and end on time.
6. All discussion within the group between members of the group is to be considered private.

Analysis

I analyzed data during and after field work (Lincoln and Guba, 1988; Strauss, 1987). Survey responses and transcript were coded for categories. The textual data were analyzed through the processes of open, axial and selective coding (Strauss & Corbin, 1990).

I used the grounded theory approach (Strauss, 1987) with the data: Experienced teachers' learning survey: responses, focus group interview transcripts, individual interview transcripts and classroom observation field notes and used two procedures to identify the characteristics of meaningful learning. One procedure was constant comparison to assign text units to the same categories; the other procedure was searching negative examples that challenged the emerging categories (Glaser & Stauss, 1967).

I used *within-case analysis* (Miles & Huberman, 1994) to build a categorization scheme of the kinds of learning teachers find meaningful and to identify individual teacher's patterns. Analyzed data included survey responses, focus group interview transcripts and individual interview transcripts.

I used *cross-case analysis* (Miles & Huberman, 1994) to explore the issue of teachers' differences in perception of shared instructional and learning events. Analyzed data included scores of Course Valuing Inventory, focus group interview transcripts, individual interview transcripts, and classroom observation field notes.

Within-Case Analysis

When I was in the field, I read the survey responses, watched and listened to the focus group interview videotapes, and wrote memos about the nine teachers' perspectives on meaningful learning. After I finished the fieldwork, I typed the survey responses in

Chinese. I transcribed all the five focus group interviews in Chinese and typed them in Chinese. I viewed the nine teachers as a case and developed a coding scheme (See Table 3.5) by sorting the survey responses and focus group interview transcripts. I also counted the coded data and calculated the proportion of each category to the total responses. I wrote the coding scheme in English and translated selected abstracts from the survey and also translated the focus group interviews from Chinese to English. I also discussed the coding scheme with my dissertation director, Dr. Putnam. One graduate student whose native language was Chinese and whose second language was English coded the original survey responses and focus group interview transcripts according to the developed coding scheme. I then used the scheme to describe each teacher's patterns of perspectives on meaningful learning, using the individual interview transcripts to confirm individual teacher's perspectives. I also coded teachers' perceptions of learning in the five courses learning to explore the structures of the teachers' perspectives as reflected in various learning situations.

Cross-Case Analysis

In order to answer the second research question of this study: How do teachers who share instructional and learning events differ in determining what is meaningful, I computed the nine teachers' responses to the Course Valuing Inventory in. I also compared and contrasted the educational proclivities of the nine teachers in each course. Although I created a group of teachers who participated in the focus group interviews, I did not analyze data by choosing the group as a unit of analysis. Instead, I focused in this dissertation on each individual teachers' reports as units to capture each teacher's distinct characteristics.

Table 3.5
Coding Scheme.

Meaningful Learning	**Definitions**			
I. Growth	Teachers found a meaningful learning experience as one contributing to their growth on taught discipline knowledge, on disciplines other than taught disciplines, especially on instruction, or on self.			
Type of Knowledge	**Conceptual Knowledge (CK)**		**Procedural Knowledge (PK)**	
Desiredness Domains of Growth	**Desired Contents (D)**	**No Emphasis on Desiredness**	**Desired Contents (D)**	**No Emphasis on Desiredness**
1. Taught Disciplinary Knowledge **(G-TDK)** The major discipline taught by the instructors	Teachers merely gained new understanding but had not thought how to act differently based on the new understanding. Teachers learned the knowledge that they were seeking.	Teachers merely gained new understanding but had not thought how to act differently based on the new understanding. Teachers did not emphasize the new understanding that was desired.	Teachers acted differently or had thought about how to apply learning to their lives. Teachers learned to change their behavior to which they were seeking.	Teachers acted differently or had thought on how to apply learning to their lives. Teachers did not emphasize the new ways of action that were desired.
Instruction as Explanation **(G-TDK-I)**	Teachers explained how the quality of instruction, e.g., instructional delivery, scaffolding, contributing to their growth on taught disciplines.			
2. Serendipitous Knowledge **(G-SK)**	Reflect on or gain new understanding of knowledge other than taught disciplines.		Be able to act differently with new understanding or, plan to apply to teaching practices or personal life.	
* Discipline of Instruction **(G-SK-I)**	Teachers reflected on the discipline of Instruction or on their own teaching.		Teachers knew what to change in their teaching after reflecting on the discipline of instruction.	
3. Self **(G-Self)**	Teachers became aware of or understood WHO they were or gained new self-concepts.		Teachers became to be able to act differently with new self-concept.	
II. Instructor (INST):	Teachers were just impressed by the high quality of instruction. Their comments on instruction were not directly related to their growth.			
III. Peer (PEER):	Teachers learned from peer's experience or support.			

CHAPTER FOUR

RESULTS

In this chapter, I first present a detailed description of the characteristics of meaningful learning experiences that the nine participant teachers appreciated, wanted to experience again, believed to be worthwhile, and found supportive of being willing to commit seriously to learning. The identified characteristics were categorized into two aspects of the learning experience: learning outcomes and the processes of interaction between learners' selves and the learning situations. Experienced teachers appreciated learning when they found themselves gaining intellectual growth as a result of the learning endeavor. Teachers also appreciated learning processes in which the instructors were impressive or their peers were supportive. These three identified characteristics were grouped into several combinations to represent each teacher's unique perspectives on the meaningfulness of learning. Since teachers have multiple perspectives on meaningful learning, the identified characteristics were examined across learning situations to understand which characteristic is salient to each teachers in a particular learning situation. Finally, I determined the variation in the nine teachers' perceptions of their learning of the same courses in the summer program.

The results that I discuss in this chapter were based mainly on my analysis of nine volunteer teachers' written and verbal responses to their learning in the summer program. Following is a brief description of the nine participant teachers' backgrounds:

Of the nine participant teachers, three female teachers were subject matter teachers. None of these three teachers were graduated from colleges of education and all

they had little formal training in the disciplines of counseling, educational psychology and school guidance.

Chin was in her early fifties, taught history and has been as an advisor of a class in a suburban junior high school for 28 years. She was currently teaching 13 to 14 year old students in her school, with class sizes of about 30 students. Her highest degree was a B.A. in political science.

Hong was in her late forties, taught accounting and business management in an urban vocational high school for 25 years. She was currently teaching 17 year old students in her school, with class sizes of about 50 students. Her highest degree was a B.A. in transportation management.

Tong was in her mid forties, taught Chinese in a junior high school in a small town for 20 years. She was teaching 13 to 15 year old students in her school with class sizes of about 40. Her highest degree was a B.A. in Chinese.

Three other female teachers were involved in school administration as well as in teaching. Two of these three teachers were graduates of teacher colleges and had inservice training of school guidance before they attended this summer program.

Fang was in her early fifties, currently directing a girl scout program, and having previously taught civil education in a small town junior high school for about 25 years. She was teaching 14 and 15 year old students in her school, with class sizes of about 45 students. Her highest degree was a B.A. in public administration.

Kai was in her late forties, a new chief of a guidance department, taught civil education as well in an urban senior high school for about 25 years. She was teaching 16 and 17 year old students in her school, with class sizes of about 50 students. Her highest degree was a B.A. in educational administration.

Yang was in her mid forties, a chief of guidance department, taught biology and conducted guidance activities as well in a suburban junior high school for about 25 years. She was teaching 13 to 15 year old students in her school, with class sizes of about 40 students. She had a B.A. in biology. Before she came to the school guidance summer program, she had finished her study in a biology summer program for inservice teachers. Therefore, she could not get promotion nor a salary increase after she finished the program for school guidance. Besides, she had to the expenses pay for the summer program herself, because her school had paid the biology summer program expenses for her several years ago.

The other three teachers were graduates of school guidance departments in teacher colleges. Two of them were currently working as school counselors, and the other was becoming a school subject teacher.

Ding was in his mid thirties, a male school counselor, not teaching any subjects but being responsible for school research, group counseling, and the school publication in an urban vocational high school for 10 years. His students were 16 to 18 years old. His highest degree was a B.A. in school guidance.

Ming was in his mid thirties, taught geography and physical education as an advisor to a class in an urban junior high school for 7 years. He was teaching 14 year old students in his school, with class sizes of about 40 students. His highest degree was a B.A. in school guidance.

Pong was in her early thirties, a female school counselor, taught guidance activity and ethics in a country high school for 10 years. She was teaching 13 to 18 year old students in her school, with class sizes of about 50 students. Her highest degree was a B.A. in school guidance.

Growth, Model Instructors, and Supportive Peers:

Three Main Characteristics of Meaningful Learning to the Experienced Teachers

In the survey responses and the focus group interviews, the nine participant teachers made comments on those learning experiences that they found meaningful. I saw three broad characteristics of meaningful learning – *growth, model instructors, and supportive peers* – emerge from the teachers' comments that reflected their thoughts on the meaningfulness of teachers' learning. By growth, I mean the teachers who have perceived intellectual growth as a result of a learning endeavor. Both model instructors and supportive peers refers to teachers who have found learning meaningful because of the interaction with instructors or peers in the processes of learning.

Growth: Perceived Values of Teachers' Learning Outcomes

The participant teachers reported some learning as meaningful experiences because they found the outcomes of learning valuable. Some teachers, for instance,

claimed that they learned new concepts or skills in a particular discipline because of meaningful learning experiences. The following excerpt from the Survey represents this kind of thought about meaningful learning:

> The Instructional Psychology course [was meaningful because] I learned new concepts and new teaching techniques from each lesson of the course instruction.
>
> Although the goal of the Science Management, Administration Management, and Interpersonal Relationship course was to teach theories about management, the contents of this course were substantive and applicable to personal living and working. I learned new skills in this course and improved working relationships with my colleagues in school.
>
> – *Fang*

Some teachers claimed that they gained a new understanding of disciplinary knowledge that they had heard about but did not understand well before. The following excerpt from the second focus group interview indicates how a male teacher found learning meaningful when he took the Educational Research course in the summer program:

> Ming: I want to comment on the Educational Research course. I appreciated the ways in which the instructor taught us principles of reading research reports critically.... He [the instructor] always explained by giving examples that clarified for me[the taught principles]. I found the experience of learning those principles from this instructor to be very meaningful. In addition, I found this course helped me to clarify many concepts that I had previously heard about doing research. I also learned many new concepts about doing research in this course. I found this course meaningful because it made me better equipped to evaluate research findings.

Ming viewed becoming capable of criticizing research reports as a meaningful experience because he now understood some concepts that he had heard of (or remembered) but had not previously understood well before. It was learning that made the vague become clear that Ming found meaningful. He also appreciated learning new concepts and higher

thinking skills. As he explained in the individual interview, being able to evaluate the validity and reliability of research reports on his own was valuable because he had viewed all research reports as truth before.

Some other teachers found learning meaningful because they gained insights into areas of learning not actually intended by the course instruction. For example, teachers reflected on their own teaching or on their culture by taking a course on educational research. Tong's comments on her learning in the Educational Research course represent this kind of thought. Following Ming's comments on the Research Method course, Tong claimed in the second focus group interview:

> Tong: I also found it meaningful taking the Research Method course so far. I had no idea of research methodology before I took this course. Everything the instructor of the course has taught in this course is new to me. I agree with Ming that the instructor taught well and helped me to learn this disciplinary knowledge. In addition, I found that the instructor shared some of his own fruitful life experiences, and some of his lectures inspired me greatly even though the words sounded ordinary. For example, I took notes in his class on the 14th of June about qualitative research. When he concluded his remarks on the research tradition, he asked the class, "Is it correct [to use the qualitative research to study all topics?" Then he commented, "Don't just believe what people say or accept opinions simply because they are popular.' (The focus group members laughed.) I intended to write these words in my notebooks because I had a lot of thoughts to evaluate. I talked to my classmates about our traditional culture and educational systems that encourage us to obey authority older people say so, too, especially some elders or scholars say so, too. Or because something is currently popular, and we follow and simply just believe in it because others say it is good. We can not think differently from them. What I want to say is that I found my learning in this course interesting. The professor's lectures should serve to remind me as a teacher to think for myself, especially as the role of authority to students. We are accustomed to authority. I hope I can criticize myself, not to force students to follow me without careful consideration. I would try my best to guide students not to step in the frame of authority. I want to encourage them to thin bravely. Their mind will become freer. In sum, I found the professor's talks led to a pretty huge inspiration.

Like Ming, Tong appreciated the learning in this course because she learned the discipline of research methods, a subject that was completely new to her. Furthermore,

she claimed that the instructor's comments on the choices of a research method inspired her to reflect on the problem of authoritarianism in Chinese culture as well as to consider her role as a teacher. She, therefore, expected herself to teach by helping students to become independent thinkers (the mind will then only become free, she claimed).

Pong joined the conversation after Tong. She found this course meaningful because she could easily understand the disciplinary knowledge as it was taught. Similar to Tong's comments, Pong also found the learning of research methods meaningful because she was "reminded" by the course instructor's effective teaching about the importance of using examples appropriately in teaching students and young children.

> Pong: Research methodology, I also want to add some comments on it. I appreciated the instructor's teaching very much. He always gave examples when he explained [new concepts]. The way he used examples [made the concepts] easy to understand...and let us enter the core of [new ideas] very quickly. This is what I found meaningful about this course. And, I appreciate his doing this because he really reminded me that I should teach my own students in this way to help students to learn abstract concepts more easily. I should even teach my own children this way, using analogy to help children understand [abstract concepts]. Therefore, the instructor was a good model for me.

I viewed both teachers' learning of the disciplinary knowledge, and their reflections on areas other than the taught disciplines as forms of teachers' growth in disciplines. In addition, some teachers recognized meaningful learning experiences when they found that they had acquired a better understanding of their own selves. Others found learning meaningful because it led them to reflect on their lives. Following are some representative excerpts from the survey representing aspects of the students' thoughts:

> My major in college was Chinese. I was not graduated from the college of education. When I became a teacher, I took some courses in education in a program designed for inservice teachers. After taking those courses, I found myself interested in interacting with people. In particular, I found that I enjoyed in developing curricula and liked to work with children.
>
> – *Tong*

> I found that my learning counseling was very meaningful because that experience provided me opportunities to clarify the directions and duties of my life. They also help me to cope with my family, especially on the matters of teaching and taking care of children. The greatest contribution of the learning experience to me is the personal growth. I discovered I had the ability to solve problems. I also gained a better understanding of myself and developed positive feelings of myself.
>
> – *Pong*

Pong's final comment (above) is especially significant because growth in the self is an essential characteristic of meaningful learning.

Model Instructors: Making the Learning Process Joyful

Some teachers reported learning as meaningful when they were impressed by the instructors' overall performance in classrooms. Teachers enjoyed instructors' humor and admired their responsible teaching attitudes, or had a chance to look up to a scholar.

Ding wrote on the survey that his learning of geography in the university was a meaningful experience because of this instructor's personality, which made complex ideas easier to comprehend.

> The instructor was humorous and responsible.
>
> – *Ding*

Like Ding, Fang wrote that many of her learning experiences were meaningful because of the instructor' personality and knowledge of subject matter.

> The instructor of the Civil Education course was humorous and entertaining. The instructor of the Personality Psychology course was very energetic, easy-going, and responsible. He helped us to learn; he was gentle and kindly. The instructor of the Instructional Psychology course was open-hearted and cheerful, refreshing both my body and mind. The learning climate was positive.
>
> - *Fang*

Teachers enjoyed taking courses taught by instructors who were both cheerful and knowledgeable. The following extract from the second focus group interview sums up how teachers found learning of research methods meaningful because of the instructor's personal attraction.

> Yang: I enjoyed the Research Methods course. Although the instructor is older, he teaches with a good attitude and it moved me. He commits to teaching seriously. In addition, his body language is expressive. He gave examples, even though a little bit exaggerated, implying deep meanings and making his teaching so effective.
>
> Researcher: Could you name a particular learning event that was taking place in classroom that made you feel this way?
>
> Yang: He played an actor in the classroom. He imitated [teenagers'] behavior vividly and expressively.
>
> Researcher: Why do you find this kind of learning meaningful when the instructor with a serious teaching attitude, uses expressively body language?
>
> Yang: I felt he was a paragon among educators because he could change his role appropriately as a teacher, sometimes being a serious scholar, sometimes being an actor to illustrate a particularly concept.

Yang emphasized that the instructor's attitude and commitment to teaching made her find the learning of research methods meaningful. In the focus group interview, she explained that the instructor was good at playing different roles, as a teacher, a serious scholar, or an actor, as the content of his lecture required. I was puzzled by this comment. In the individual interview, I asked her to explain further:

> Yang: He was such a wonderful teacher. I liked being in his class.
>
> Researcher: I don't understand how his performing as a paragon of educators is related to your finding his class a meaningful learning experience.
>
> Yang: Oh! Now I see your question. I really think he is good. He was always serious about academics. He also took this course very seriously. I could feel that. I was touched by his attitude. In the whole process of learning in his class, I did

not see him change this attitude. It's not easy. You just need a teacher to be like him to teach you. He makes you want to learn. He can play any roles to help you to learn.

Researcher: That is why you mentioned in the focus group that "he can change his role appropriately as a teacher, sometimes playing as a serious scholar, sometimes playing as an actor." You think that he has a good attitude, trying anything to help you to learn in class.

Yang: Right. I also want to emphasize that he is serious on academics. I appreciate listening to a person who is serious about his or her own specialization.

All in all, Yang seemed to view the instructor's attitude toward his disciplines and toward teaching as key factors in motivating her to learn. Later in the second focus group interview, Ming echoed this point:

Ming: I enjoyed the Research Methods course, probably because of the instructor's charming personality. As Yang mentioned, he is a paragon of a scholar.

The teachers identified an instructor's attitude as a significant factor in meaningful learning, because for it made the learning process enjoyable and motivated teachers to learn.

Supportive Peers: Making the Learning Go Smoothly

Only one of the nine participant teachers reported that she found learning meaningful because of the supportive climate of peers. Fang wrote on the Survey about her learning experience in the summer program:

> The interactions between classmates were very good in the Instructional Psychology course.... Our peers in the class helped each other in working on the course projects and learned much from each other's projects.
>
> *- Fang*

Fang also talked in the fifth focus group interview about a field trip to the museum in the Assessment course:

Fang: I was very familiar with the contents of the exhibitions in that museum. The exhibitions were not new to me at all.

Researcher: You did not learn any new knowledge in that trip?

Fang: No.

Researcher: What made you think that trip a was meaningful experience?

Fang: The experience was rewarding for me because I observed many classmates having fun in the museum.

Fang found the field trip meaningful because she had a good time with peers in the museum even though she did not learn anything on the trip. Hers, too, the instructor's attitude, the learning climate established by peers became a characteristic of meaningful learning because of a positive learning atmosphere.

Growth: The Prime Value of Learning

I coded each participant teacher's survey responses and their comments on the five courses in focus group interviews and individual interviews. Most of the teachers found more than two types of learning were meaningful. Among the nine participant teachers, three of them found learning meaningful because it contributed to their personal and professional growth. Five found learning meaningful because they grew intellectually and were expressed by the capability and knowledge ability of their instructors. One found the learning meaningful because of gaining growth, the instructors' personal attraction, or supportive peer relationships. (See Figure 4.1)

I counted each teacher's statements about meaningful learning experiences (from both surveys and interviews) and computed the proportion of statements that were about each kind of meaningful learning. As can be seen in Figure 4.2, the most frequently reported items was learning that contributed to a teachers' academic growth.

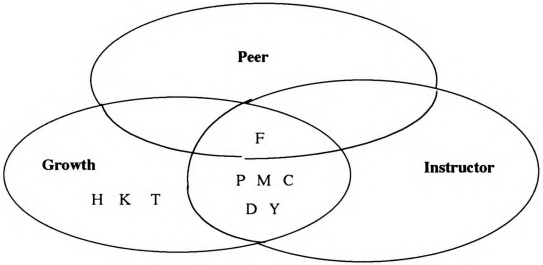
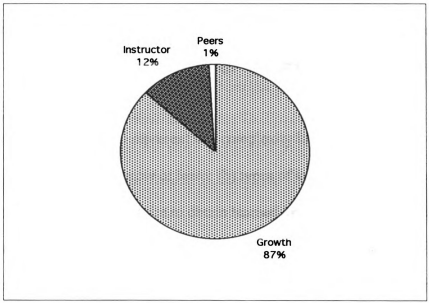


Figure 4.1 Three characteristics of meaningful learning from the nine participant teachers' perspectives. In the figure, each capital letter represents the initial of a teacher.



P(Growth) = [PT1(growth) + PT2(growth) + ... PTn(growth)]/n

PTi(Growth) = Total(Growth statement)/ Total (Meaningful Statement)

Figure 4.2 Proportions of teachers' comments on the meaningfulness of experienced learning.

A Three-Layer Model of Growth out of Meaningful Learning

Having opportunities for various kinds of intellectual/professional growth was the most prevalent criterion for meaningful learning. Within this broad criterion of growth, however, was a rich variation both in the broad spectrum of their observations as well as on a personal level. When teachers referred to growth in explaining the meaningfulness of their experienced learning, they raised various points. Some claimed that they learned the disciplinary knowledge taught in classes, some reported that they discovered disciplinary knowledge unintentionally taught by instructors, and some said that they gained better understanding of themselves. Among these three domains of knowledge, some is conceptual and some is procedural. In addition to pointing out what it was they learned, some teachers emphasized that the learning experiences were meaningful because students learned what they wanted to learn. Other teachers, in contrast, did not emphasize their desire to learn particular things to determine what learning was meaningful.

I developed a model to represent this complexity in three layers: (a) domains of knowledge in which teachers grow or learn; (b) types of knowledge which teachers learn; and (c) degree of emphasis on desire to obtain learned knowledge (See Figure 4.3). When describing meaningful learning experiences, teachers claimed they grew (learned) in three domains: (a) taught disciplinary knowledge that was the explicit focus of the course, (b) serendipitous knowledge that resulted from the course experience but was not intended by course design, or (c) knowledge of self or personal growth. Within these domains, teachers varied in their evaluation of conceptual knowledge and procedural

knowledge. Some teachers emphasized that learning experiences were strongly meaningful when they resulted in the knowledge they desired to obtain.

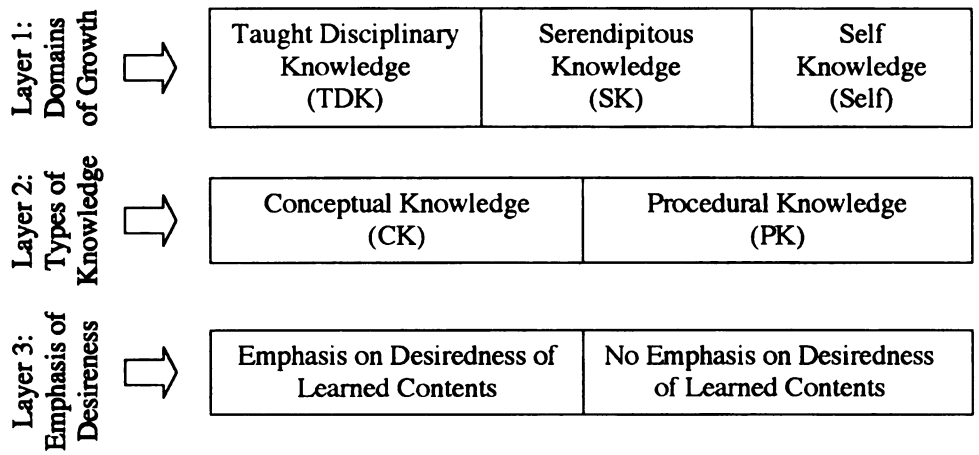


Figure 4.3. A three-layer model of growth out of meaningful learning.

In the following sections, I describe briefly each layer of this model with corresponding excerpts from the surveys or from the focus group interviews.

Taught disciplinary knowledge: (Layer 1). Teachers talked about their growth in terms of the disciplinary knowledge that was the objective of the course instruction. Some teachers, for example, delighted in learning new concepts or new skills of instructional psychology. In the survey, Fang wrote that her learning in the Instructional Psychology course was meaningful because she learned new content and new teaching methods from each lesson. Some teachers found the course meaningful because it clarified previously confusing concepts. For instance, Ming found his learning of research methodology meaningful because he was able to clarify many concepts about this discipline.

Teachers also mentioned that the learning of taught disciplinary knowledge was meaningful because they learned things they did not know. The following excerpts are from the second focus group interview:

> Yang: The contents [of the Research Method course] were explained clearly by the instructor.
>
> Researcher: Could you give me a concrete instance where you found his explanation to be clear.
>
> Yang: When he introduced methodology, he explained the contents very clearly, which make a lot of sense to me.
>
> Researcher: Could you tell me more in detail, such as, which lesson?
>
> Yang: Within the introduction of the research methodology, he introduced [the approaches of] quantitative and qualitative research analysis. Because we understood qualitative research less than the quantitative approaches, he spent much time in introducing the qualitative research which help us to understand it. Although we are not very familiar with the quantitative research, we at least have some basic concepts about it. Compared to the understanding of the quantitative approach, we had no prior knowledge on the qualitative research method. He knew what we knew and what we did not know at all.
>
> Researcher: Is the reason why you found the learning meaningful that the instructor knew students' current knowledge about a discipline?
>
> Yang: Yes. He knew which parts of knowledge we lacked and from what basic knowledge we need to begin to learn.

Another female teacher, Chin also made comments on the course in the second focus group interview, claiming her learning of the research methods was a meaningful experience because of learning new skills.

> Chin: I wanted to make some comments on the Research Method course. I was impressed by the course instruction. I did not know how to write a research proposal before I took this course. Now I have some ideas about research and how to write a research proposal.

Teachers also commented on the importance of becoming fluent with the taught disciplinary knowledge, as in the following excerpt from the fifth focus group interview.

Hong: I'd like to talk [about my learning in the Counseling course]. I had a negative feeling about the other four courses that were taught earlier this summer. As far as the Counseling course, it is the course that I expected to learn the most from in the summer program. I wanted to learn counseling skills to help students in my own school. The contents of this course instruction are consistent with my learning goals. By taking this course, I realized that being a counselor is not an easy job. The class had raised the issue about the difficulties of continuing the conversation [in the processes of counseling]. When I practiced the counseling skills taught in this course, I found myself often talking around and around, and didn't know what to say to continue the conversation with my clients. I agree with the instructor's opinions that experiences [of practicing counseling skills] are very important to become a competent counselor. I agree that learning should be connected with experience. If there are related courses offered in the future, I am willing to come again. Although I can not handle the taught counseling skills very well yet, I found I am more capable of talking than I was last year. We learned something like this information last year. (The group members laughed.)

Researcher: Information?

Hong: That's right. When we did role playing in that class last year, we did it on the surface. Last year's course [about counseling] was not as intensive as this year's. This year's is better than last year's. In addition, we also have a textbook this year. You have an on-hand aid. Last year, [that instructor] gave us some handouts to read in class but that instructor took those handouts back immediately. So we could not use those aids to practice. (The group members laughed.) This year is different. The textbook itself is an on-hand learning aid. We could read it while we were practicing in and out of class. I even could try some skills that the instructor had not taught yet. (Hong laughed) I think the Counseling course was very meaningful. I would like to attend more courses like this course. It provided me opportunities to practice and to go through each step of conducting a counseling interview. I liked this course because it helped me to step out a little and I am satisfied with this little accomplishment already.

I created the term *growth in taught disciplinary knowledge* to represent the group of teachers' perspectives on meaningful learning in terms of their learning of the disciplinary knowledge that was the objective of the course instruction. Perspectives of this group include learning new concepts or new skills, clarifying previously confusing concepts, or mastering skills.

Serendipitous knowledge: (Layer 1). In contrast to teachers' learning of taught disciplinary knowledge, teachers claimed learning experiences to be meaningful because they discovered unexpectedly interesting or valuable disciplinary knowledge that were *not planned* or ***intended*** by the instructors. Some teachers gained new understanding of cultural influences on individuals' behavior in courses that were not about sociology or cultural issues. For example, Tong analyzed how traditional culture might constrain people's thinking when she reflected on her learning of research methods.

> Tong: ...In addition, I found that the instructor shared some of his own fruitful life experiences, and some of his lectures inspired me greatly even though the words sounded ordinary. For example, I took notes in his class on the 14th of June about qualitative research. When he concluded his remarks on the research tradition, he asked the class, "Is it correct [to use the qualitative research to study all topics?" Then he commented, "Don't just believe what people say or accept opinions simply because they are popular.' (The focus group members laughed.) I intended to write these words in my notebooks because I had a lot of thoughts to evaluate. I talked to my classmates about our traditional culture and educational systems that encourage us to obey authority older people say so, too, especially some elders or scholars say so, too. Or because something is currently popular, and we follow and simply just believe in it because others say it is good. We can not think differently from them. What I want to say is that I found my learning in this course interesting. The professor's lectures should serve to remind me as a teacher to think for myself, especially as the role of authority to students. We are accustomed to authority. I hope I can criticize myself, not to force students to follow me without careful consideration. I would try my best to guide students not to step in the frame of authority. I want to encourage them to thin bravely. Their mind will become freer. In sum, I found the professor's talks led to a pretty huge inspiration.

According to my fieldnotes from that course, the instructor reminded teachers to think carefully when choosing research approaches for pursuing research questions after he introduced quantitative research and qualitative research methods. I think the instructor intended to remind teachers not to choose qualitative methods just because they are popular; he did not intend for teachers to reflect more broadly on the role of culture nor on the issue of authoritarianism in the teacher-student relationship. This unintended

reflection on culture and on a teacher's role, however, made Tong's learning experience meaningful.

Of particular note were many teachers who learned knowledge related to pedagogy or learning psychology when they took courses not directly related to these topics, such as research methodology or statistics. For example, Tong reflected on her role as a teacher after attending the Research methods course. The following excerpt from the second focus group interview also illustrates this kind of serendipitous learning. Chin commented on her learning in the Research method course:

> Chin: ...Another example of meaningful learning experience is that the instructor mentioned that boys are more aggressive than girls. The ways he imitated boys' aggressive behaviors and girls' verbal behaviors are very cute. I was very impressed by that class episode. Of course, it also led me to reflect on my perspectives on boys and girls. In addition, I learned from him how to teach inductive and deductive methods. I needed to teach my own students these two types of reasoning but I did not know how to help students to understand them before I took this course. Now I learned from this instructor how to teach these two methods. I am happy at learning a lot from this course.
>
> Researcher: Could you say more about why you chose these learning events as examples of meaningful learning experiences? For example, why did you choose to talk about the instructor's expression on the gender differences between boys and girls? Or, why did you talk about the learning of teaching deductive and inductive methods?
>
> Chin: Because the instructor's body language about boy and girl is impressive. Another example [of learning to teach inductive and deductive methods] is what I need so I found it meaningful.
>
> Researcher: They were consistent with your....
>
> Chin: Right, [they are consistent with] my current needs.
>
> Researcher: Teaching needs. The instructor's teaching modeled a method to teach the subjects that you are currently teaching your own students.
>
> Chin: Yes.

Methods for teaching inductive/deductive research methods and views on gender differences were not the disciplinary knowledge that the instructor intended to teach. Chin simply actively paid attention to these issues and found them meaningful.

Another example of serendipitous knowledge is Kai's learning about students' struggles in mathematics when she took the statistics course in the summer program. Kai was a female teacher in her late 40s who had taught civil education in a senior high school for about 25 years. The following excepts are from the fifth focus group interview.

> Kai: I found the Statistics course pretty frustrating. However, the learning experience helped me understand my own students' learning problems. My students always told me that learning mathematics was a tough task and I had difficulty understanding their feelings because I did not have problems in studying mathematics myself. I eventually experienced the feelings of helplessness and hopelessness after I took the Statistics course this summer.
>
> Researcher: Learning statistics is meaningful to you because you....
>
> Kai: I realized what my students' were feeling when they did not learn mathematics well. I felt helpless and hopeless when I learned statistics. However, I am learning statistics in this summer with peer's support and help. Even though I feel it is l hard now, I am still willing to continue to learn this discipline. Learning from this experience, I know how to empathize with my students after I go back to teaching.
>
> Researcher: Will you use the same instructional methods to teach your students?
>
> Kai: No, I will not teach my students by the same ways the instructor used in the Statistics course. I will gradually teach my students from basic to advanced subjects. I will use my learning experience in the Statistic course to understand my students' learning, however. Then, I believe that I will better know what to do to help my students.
>
> Researcher: Kai, did you find your learning of statistics in the summer meaningful?
>
> Kai: Pretty meaningful.
>
> Researcher: Pretty meaningful?
>
> Kai: Not just meaningful.

Researcher: Strongly meaningful?

Kai: Right. I don't think that I have learned [statistics] well so far. Actually, I feel very frustrated in this course. However, I understand better why students did not learn well, and about their feelings when they did not learn well. I know how to empathize and accept their feelings and complaints. Or, to put it this way, I know what to do to motivate frustrated students to try to learn again.

Researcher: Let me summarize. You found the course meaningful for two reasons. First, you understood students' feelings when they had difficulty in learning subjects and you know how it happened.

Kai: Yes.

Researcher: Second, you learned how to help those students. Do you find the course very meaningful for these two reasons?

Kai: Yes.

The statistics instructor clearly did not intend to create a frustrating leaning situation to help teachers to understand their own students' struggling and frustration in learning. Rather, Kai constructed knowledge about learning psychology from what she was experiencing in the course.

Chin's learning about teaching inductive/deductive research methods in the Research Method course and Kai's gaining understanding of her own students' learning by taking the Statistics course were not the disciplinary knowledge that the instructors intended to teach. I call this kind of learning growth in serendipitous knowledge and distinguish it from teachers' growth in taught disciplinary knowledge. Many educational researchers (Barker & Hapkiewicz, 1979; Duchastel & Brown, 1974; Klauer 1984) used the term *incidental learning* referring to an individual's learning of material irrelevant to the goals of instructions. Some other researchers (Gennaro, Picciarelli, Schirinze, & Bilancia, 1992) made a term, incident scientific knowledge, for a learner's "understanding of science aspects which have not yet been specifically taught in the

school environment" (p. 118). I think that both terms catch the characteristic that an individual has learned something that is not intended to be taught in classroom. They, however, do not highlight the values of learned knowledge that the individual learners have found. I made the term, growth in serendipitous knowledge, to represent the kind of meaningful learning that teachers gain serendipitously in a formal learning setting and to emphasize the values they place on the learning.

Self: (Layer 1). Some teachers found learning meaningful experience that led to new understandings about themselves. For example, Tong found her interest in learning and interpersonal interaction through taking education courses. This discovery of new interests – a new way of viewing herself – made those courses meaningful learning experiences.

> My major in college was Chinese. I was not graduated from the college of education. When I became a teacher, I took some courses in education in a program designed for inservice teachers. After taking those courses, I found myself interested in interacting with people. In particular, I found that I enjoyed in developing curricula and liked to work with children.
>
> – *Tong*

Another aspect of teachers' self-growth is that they use learning opportunities to examine their current inner worlds and become more sure about whom they want to be. Pong's survey responses, for example, reveal that she found learning experiences meaningful because they provided opportunities to clarify her life directions and duties.

> I found that my learning counseling was very meaningful because that experience provided me opportunities to clarify the directions and duties of my life. They also help me to cope with my family, especially on the matters of teaching and taking care of children. The greatest contribution of the learning experience to me is the personal growth. I discovered I had the ability to solve problems. I also gained a better understanding of myself and developed positive feelings of myself.
>
> – *Pong*

Like growth in serendipitous knowledge, teachers' self-growth sometimes takes place in frustrating learning situations. The following excepts from the third focus group interview represent this kind of self-growth.

> Tong: I want to talk about my learning in the Computer course. I should say this course stimulated me to think. I always like to learn new things. However, I used to keep my distance from the computer although I did not intend to refuse to learn to operate it. In fact, I even had already attended four in-service workshops to learn the computer. Unfortunately, I still did not know how to use the computer after attending those workshops.
>
> Researcher: Computer workshops?
>
> Tong: Right. [I didn't even know how to use computers] because I didn't touch computers after the workshop and because I didn't need to use them in my daily life. I remember that in the first Computer course lesson, the instructor asked if there was anyone who did not even know how to turn on a computer. I raised my hand. I thought I was that kind of person, although I have had three or four certificates given by computer workshops.
>
> After the first Computer course lesson, it was a Friday. I usually planned not to go home. However, I found myself quite nervous after I reviewed my learning of [the software--Microsoft Excel]. I, therefore, decided to go home because I had a computer at home and my family could help me to learn the computer software. Unfortunately, my hometown was attacked by typhoons on that weekend so I did not go home.
>
> I was indeed nervous about not learning the computer well during that weekend. It was the first time I found myself nervous about my learning. After for a while I told myself that I could not just be nervous. I should do some practice. So, I called my friend that lives in this area. I told her I needed to go to her place to practice on the computer. I needed her help teaching me how to use the computer for I was not familiar with the whole procedure. In my friend's place, I reviewed the whole procedure that the instructor demonstrated in class. I could usually follow the instructor's demonstration in class, but I could not do the same procedure when I faced a computer alone. This time, I immediately went to review the taught procedure in that lesson. I practiced the whole procedure at my friend's place on Saturday. I was not familiar with the procedure of word processing. For example, I even didn't know how to save a computer file on a floppy disk. My friend helped me to practice the needed procedure on Saturday. I practiced them again on Sunday by myself. I found it was not very difficult to use a computer.
>
> What I have tried to say is that such a learning experience creates an opportunity for me to face my inner nervousness. When I faced something of which I had fear,

I used to get nervous immediately. [This learning is meaningful to me] because I experienced how to conquer my nervousness and told my self very determinedly that you have to face it. You have to face the fact that you came to take this course. You have to do it and to face it. And, I made it. The result made me realize that a person can do many things if he or she learns to do them step by step. Be not afraid of the new things. Don't reject learning them. If the person does it step by step, perhaps he or she can make it, perhaps not. No matter what the results are, it is meaningful to a person if that person have tried hard to achieve. Now, I have courage to face a thing that I used to be afraid of. I don't think there is any thing that can not be learned. Speaking of the learning contents, I do not find anything new. However, I learned from this experience that I can learn well.

Researcher: The Computer course itself merely caused your nervousness. This is a starting point. It is not the feelings of nervousness that are meaningful, right?

Tong: It depends on how you view nervousness. If it is just a feeling of nervousness, it is not meaningful. If it makes you think and to try to handle it, nervousness becomes a motive to take action.

Researcher: Do you think the nervousness coming from the Computer course was meaningful?

Tong: I think so.

Researcher: Will you be willing to come to learn even if a course makes you feel nervous?

Tong: Yes, I will. I have courage to deal with it. Owing to this learning experience, I found that I have the ability to face nervousness although I may not face it immediately.

Researcher: You know your self, your ability because of the experience in this Computer course, right?

Tong: Right. I know how to face it.

Tong seemed overwhelmed with the happiness of the discovery of self and with her potential capacity to deal with challenges. It was her self-growth – not the learning of particular computer skills – that made this course a meaningful learning experience for Tong.

The coding of the teachers' survey responses and the comments in interviews revealed that all the participant teachers found learning meaningful in the domains of taught disciplinary knowledge and self. Some of them also found meaningful the discovery of serendipitous knowledge. (See Figure 4.4)

Conceptual versus procedural knowledge: (Layer 2). Across the three domains of growth, some teachers found learning meaningful when they learned new concepts or clarified concepts about which they were confused. That is, they knew "what X is." Or, they found they understood some theories or concepts better than before. I coded this type of growth as knowing conceptual knowledge. For example, Fang found that learning theories about management was meaningful because those theories can be applied to everyday life.

> Although the goal of the Science Management, Administration Management, and Interpersonal Relationship course was to teach theories about management, the contents of this course were substantive and applicable to personal living and working. I learned new skills in this course and improved working relationships with my colleagues in school.
>
> – *Fang*

In the second focus group interview, both Ming and Yang learned concepts of research methodology.

> Ming: ...In addition, I found this course helped me to clarify many concepts that I had previously heard about doing research. I also learned many new concepts about doing research in this course. I found this course meaningful because it made me better equipped to evaluate research findings.
>
> Yang: Within the introduction of the research methodology, he introduced [the approaches of] quantitative and qualitative research analysis. Because we understood qualitative research less than the quantitative approaches, he spent much time in introducing the qualitative research which help us to understand it. Although we are not very familiar with the quantitative research, we at least have some basic concepts about it. Compared to the understanding of the quantitative

approach, we had no prior knowledge on the qualitative research method. He knew what we knew and what we did not know at all.

Teachers also found learning of procedural knowledge meaningful. Some teachers commented on learning as meaningful because they learned how to do something. For example, teachers claimed that – as a result of a learning experience -- they knew how to write a research proposal or how to do a brief counseling technique. I coded this type of growth as knowing procedural knowledge. In the survey, Fang wrote that she found learning of new teaching methods meaningful.

> The Instructional Psychology course [was meaningful because] I learned new concepts and new teaching techniques from each lesson of the course instruction.
>
> – *Fang*

Chin, for example, viewed her learning of teaching deductive/inductive methods as useful knowledge for her own teaching.

> Chin: ...In addition, I learned from him how to teach inductive and deductive methods. I needed to teach my own students these two types of reasoning but I did not know how to help students to understand them before I took this course. Now I learned from this instructor how to teach these two methods. I am happy at learning a lot from this course.

Finally, Hong found it meaningful to practice counseling skills in class.

> Hong: ...I wanted to learn counseling skills to help students in my own school. The contents of this course instruction are consistent with my learning goals.... Although I can not handle the taught counseling skills very well yet, I found I am more capable of talking than I was last year. We learned something like this information last year.

The coding of survey responses and interviews revealed that all the teachers valued both conceptual and procedural knowledge. (See Figure 4.4)

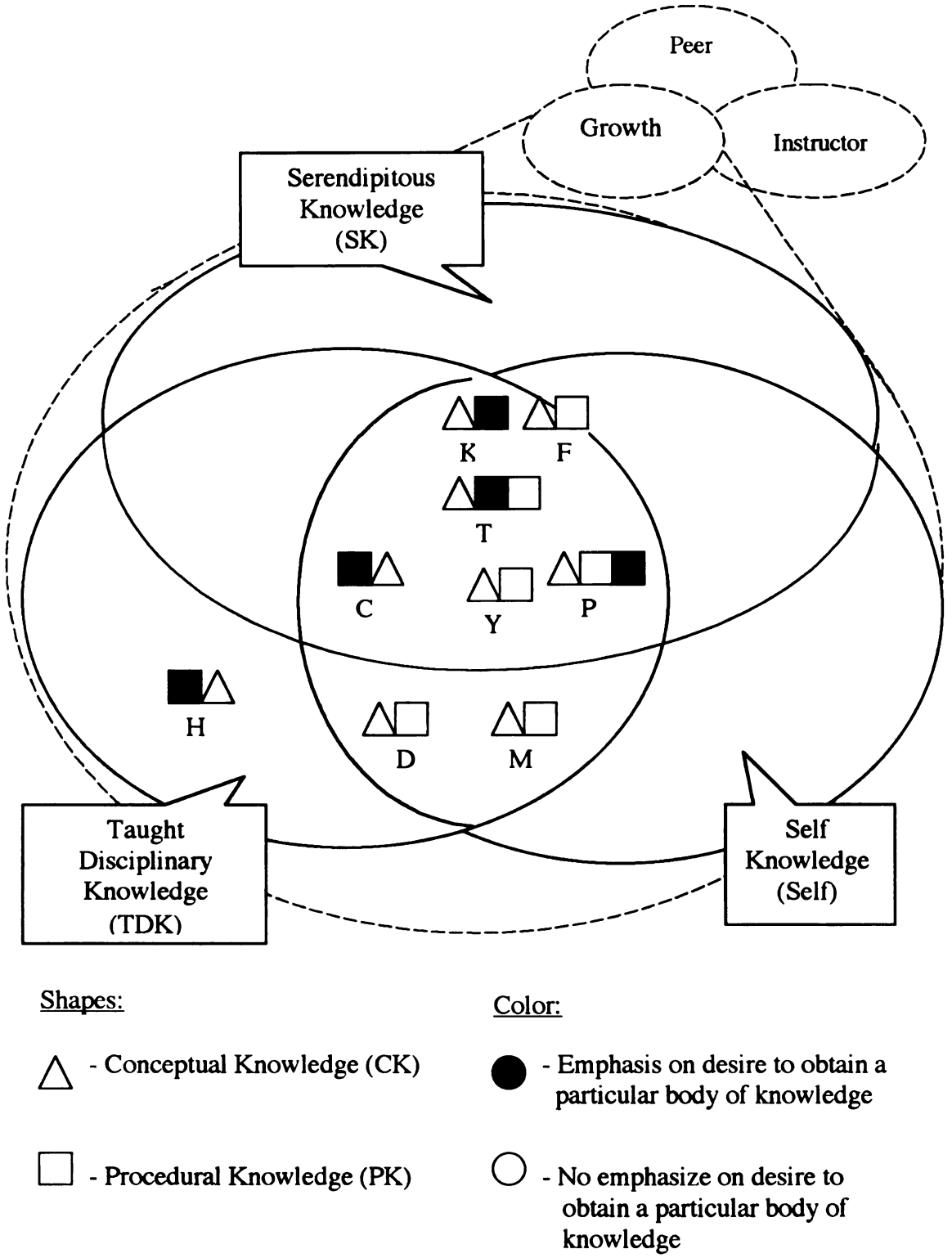


Figure 4.4 Distribution of teachers' perspectives on the 3-layer model of growth.

Emphasis on desire to obtain a particular body of knowledge versus no emphasis on desiring (Layer 3). Within the domain of taught disciplinary knowledge, teachers weighted the meaningfulness of learning experiences with the criterion of desire to obtain a particular body of knowledge. Some teachers confirmed that learning was strongly meaningful when the taught disciplinary knowledge was exactly what they desired to learn from this summer program. In contrast, other teachers did not emphasize the issue of desire when they talked about the meaningfulness of learning. The teachers who emphasized the desire issue viewed learning as not strongly meaningful when the taught disciplinary knowledge was not what they hoped to learn. For example, Chin criticized her learning in the fifth focus group meeting:

> Chin: I still learned some research concepts and statistics. But, those were not what I wanted to learn in this summer program.
>
> Researcher: Did you find this learning meaningful at all?
>
> Chin: No, not meaningful at all because I don't need those learned skills and knowledge, except the counseling skills. My learning in the Counseling course is meaningful because it is what I expected to learn in the summer program. I wanted to learn guidance skills. And, I learned them from the course. It's really meaningful to me.

In contrast, she valued her learning about teaching inductive/deductive methods because it fit her needs for improving her own teaching.

> Chin: ...In addition, I learned from him how to teach inductive and deductive methods. I needed to teach my own students these two types of reasoning but I did not know how to help students to understand them before I took this course. Now I learned from this instructor how to teach these two methods. I am happy at learning a lot from this course.

Like Chin, Hong was satisfied with her learning of counseling techniques because it was consistent with her goals. She commented in the fifth group interview:

> Hong: I'd like to talk [about my learning in the Counseling course]. I had a negative feeling about the other four courses that were taught earlier this summer. As far as the Counseling course, it is the course that I expected to learn the most from in the summer program. I wanted to learn counseling skills to help students in my own school. The contents of this course instruction are consistent with my learning goals.

Both Chin and Hong emphasized what they wanted to learn from the summer program. They were excited at learning the desired knowledge and skills from the counseling course. They were either uninterested in or unhappy with learning knowledge that they did not intend to learn. Even though they did learn something new, they did not value this learned knowledge. Teachers viewed this learning as a meaningless route viewed learning because the learned knowledge was not relevant to the teachers' desires.

Some teachers, however, did not emphasize that what they learned was the same as what they desired to learn. Rather, they simply claimed as meaningful the learning of some new knowledge, such as Yang's learning of qualitative research methods. Or, they valued learning experience that helped them clarify their prior knowledge, such as Ming's getting clarification of concepts about research methods.

The coding of survey responses and the interviews showed that all the teachers appreciated learning knowledge that was not the same as their major learning goals. However, most of teachers confirmed their learning meaningful when the learned knowledge was exactly what they wanted to learn. (See Figure 4.4)

Thus within their valuing of growth, individual teachers possessed multiple perspectives on what was meaningful, with different teachers giving different reasons for what made learning experiences meaningful. There is, however, no simple one-to-one correspondence between individual teachers and the given reasons. Rather, most of the teachers gave multiple reasons for meaningfulness. For example, Pong, Tong, and Yang

all viewed learning as meaningful in the three domains of growth, and valued both conceptual and procedural knowledge, but had no preference for knowledge which was desired or not. (See Figure 4.4) In contrast to these three female teachers, two male teachers found learning meaningful only in the domains of taught disciplinary knowledge and self.

Although teachers varied in their perspectives, a common perspective on meaningful learning is that the teachers wanted to continue to learn when they found that taught disciplinary knowledge was learned well. (See Figure 4.4)

Summary

Teachers found learning meaningful in three areas: growth, instructor, and peer. Teachers vary on the ways finding learning meaningful. Some teachers found learning meaningful only when that learning experience contributed to their growth. Other teachers found learning meaningful either when that learning led to growth or when they found the course instructors impressive during the processes of learning. Still other teachers found all the three kinds of learning meaningful: growth, instructors, and peers.

Growth was the major issue within which teachers discussed what made learning meaningful. Within growth, teachers' perspectives on meaningfulness were complex; teachers possessed multiple perspectives on what makes learning meaningful. Teachers held in common, however, the view that they would like to continue to learn when they found that the taught disciplinary knowledge was learned well.

I used sailing as a metaphor for teachers' learning, and I pictured the variance of teachers' perspectives on the meaningfulness of learning. Some teachers appreciated the sailing because they saw beautiful corals which they did not have a chance to look at

closely before. Some teachers were interested in watching the captain and his fancy equipment on the ship. Some were happy in making fun with friends. Some teachers enjoyed diving practice of diving. Some teachers felt excited at finding a new self. Some teachers felt dizzy on the ship and jumped into the water. They swam very hard to find a place to stay. Some landed on a treasure island full of surprise; some landed on a barren island. Some teachers were so satisfied when they finally caught that big fish they were looking for. Some caught crabs but they did not have the teeth to eat them.

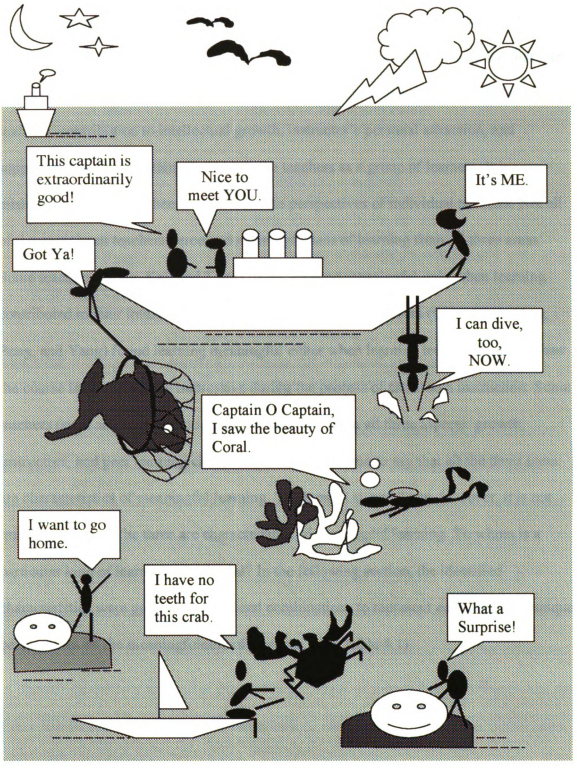


Figure 4.5 The ways teachers found learning meaningful.

Meaningful to Whom

My analysis thus far has focused on the first research question of this study – what kinds of learning do experienced teachers find meaningful? I have argued that there are three major characteristics of learning experience that make them meaningful for teachers: contribution to intellectual growth, instructor's personal attraction, and supportive peers. This claim focused on the teachers as a group of learners. It is misleading, however, when viewed from the perspectives of individual teachers. Not all of the participant teachers perceived meaningfulness of learning from all three areas. Some teachers (Hong, Kai, and Tong) found learning meaningful only when learning contributed to their intellectual growth. Another group of teachers (Chin, Ding, Ming, Pong, and Yang) found learning meaningful either when learning led to growth or when the course instructors were impressive during the process of classroom instruction. Some teachers (such as Fang) found learning meaningful from all three aspects: growth, instructors, and peer learning climates. For Fang, it is true to say that all the three areas are characteristics of meaningful learning. To Hong, Kai, and Tong, however, it is not true to say that all the three are characteristics of meaningful learning. To whom is a particular kind of learning meaningful? In the following section, the identified characteristics were grouped into several combinations to represent each teacher's unique perspectives on the meaningfulness of learning. (See Table 4.1)

Table 4.1

Individual Teachers' Perspectives on Meaningful Learning

GROWTH ONLY	
Hong	TDK(CK;PK-D)
Kai	SK(CK) + TDK(CK-D;PK-D)
Tong	Self(CK;PK) + TDK(CK;PK-D) + SK(CK)
GROWTH & INSTRUCTOR	
Ding	TDK(CK;PK) + Self(PK)
Ming	Self(CK;PK) + TDK(CK;PK)
Chin	Self(PK)+TDK(CK;PK-D)+SK(PK)
Pong	Self(CK) + TDK(CK;PK-D)+SK(PK)
Yang	Self(CK;PK) + TDK(CK;PK)+SK(CK)
GROWTH, INSTRUCTOR & PEER	
Fang	Self(CK;PK) + SK(CK;PK) + TDK(CK;PK)

Note. TDK = Taught Disciplinary Knowledge; SK = Serendipitous Knowledge
CK = Conceptual Knowledge; PK = Conceptual Knowledge; D = Desired content.

Considering the distribution of three major characteristics – growth, instructors, and peers –that were identified by the participant teachers, I found that growth could stand alone for making teachers find their learning experiences meaningful. In contrast, neither the instructors nor peers can stand alone as a characteristic of meaningful learning. That is, teachers could find learning meaningful when they experienced intellectual growth without noting model instructors or supportive peers. They did not, however, find learning meaningful solely because of the instructors' personal attraction or because of meeting a group of supportive peers. All of the teachers who mentioned the characteristics of instructors or peers emphasized the issue of growth as the prime value of learning.

For example, Ding, Ming, Chin, Pong, and Yang all recognized the characteristic of meaningful learning in terms of instructor, but also valued those learning experiences that contributed their growth. Another example is Fang, who was the only teacher who considered learning experience significant with the three characteristics. Since only one teacher mentioned supportive peers as a characteristic of meaningful learning, no participant teachers found meaningful learning based on both instructors and peers. The results showed that there seems to be a pattern representing teachers' perspectives on meaningful learning. The combinations of the three identified characteristics of meaningful learning were not random. Growth existed alone; instructors and peers did not. Growth was grouped with instructors or with peers, however, instructors and peers did not chain together.

Accordingly, I can now answer the question (To whom are the kinds of learning experiences meaningful?) in more detail. To some practicing teachers, the only characteristic of meaningful learning was their intellectual growth as a learning outcome. To other teachers, the meaningfulness of learning was found the learning contributing to overall their growth or when they found themselves appreciating the instructors' teaching methods Finally, one teacher found learning meaningful in both the learning outcomes and in the learning process of studying with the instructors and peers.

Hong, Kai, and Tong found learning meaningful only when those learning experiences contributed to their intellectual growth. They did not explain the meaningfulness of learning experiences in terms of the instructor' personal attraction or their interaction with peers. Although the three teachers shared an emphasis on growth, they varied in the kinds of growth they valued.

Hong valued a learning experience only when she learned the taught discipline knowledge well. Writing in the Experienced Teachers' Learning Survey, Hong explained that her learning about computers, business practices, civil law, and the psychology of personality was meaningful because of her growth in those disciplines. This knowledge was new to her and helped her to adapt in her surroundings. In the first focus group interview, Hong explained more about why her learning about computers in a workshop was a meaningful learning experience:

> Hong: I am teaching in a private school. The principal always tells teachers that the private school is not easy to survive, and teachers need to do more in-service learning. If some curricula are gone in our school, teachers can teach new disciplines which they learned from in-service programs. Therefore, I attended computer workshops several years ago.... I found the requirements for schoolwork are changing through the years. So I always participate in in-service programs, depending on the needs of the school. Now I can easily use computers to make school tests, which my school required teachers to do after I attended the computer workshops.
>
> Researcher: Did you find it meaningful when you were attending those computer workshops?
>
> Hong: Yes, I did.
>
> Researcher: Could you describe some of those experiences?
>
> Hong: Because I was older, I forgot every computer command that I had learned in class after I went home. I was very unhappy about that, so I practiced repeatedly. I remember that I practiced computer procedures from 8 a.m. to 10 p.m. I practiced until the computer lab closed. I did not want to stop until the computer lab closed.
>
> Researcher: You found a learning experience meaningful when you persisted on completing a task and you did it, right?
>
> Hong: Right. It is very interesting. In addition, my friends were always talking about computers when we were together. I did not know what they were talking about. Now, after that learning, I know. I am happy that I learned about computers. I think that people need to learn more even though they may not see the relevance of the learning in their daily lives immediately. However, they will eventually find the usefulness of the learning.

Hong did not mention other aspects of the learning experience, such as being impressed by the instructors, or peer learning climates, as being meaningful. She talked only about her growth in the taught disciplinary knowledge. Nor did she explain her learning as meaningful in terms of self-- growth or growth in serendipitous knowledge. I coded her values on learning as GROWTH (Taught Disciplinary Knowledge) based upon her survey responses and the first focus group interviews.

Hong did not say anything about her learning in the four courses (Research Methods, Statistics, Assessment, and Computers) in the second, third, and fourth focus group interviews. After the fourth group interview, I interviewed her individually and asked her why she did not speak in the three group interviews. She told me that she did not know what to say in the group interviews because she found all of the four courses meaningless. She told me that she wanted to learn guidance skills from this summer program so that she could help students and new teachers to solve problems. However, the four courses were not related to guidance at all. In the last focus group interview, Hong made comments on the Counseling course. She claimed that her learning in this course was a meaningful experience and she was looking for other learning opportunities like this course.

> Hong: I'd like to talk [about my learning in the Counseling course].... If there are related courses offered in the future, I am willing to come again. Although I can not handle the taught counseling skills very well yet, I found I am more capable of talking than I was last year. We learned something like this information last year. (The group members laughed.)
>
> Researcher: Information?
>
> Hong: That's right. When we did role playing in that class last year, we did it on the surface. Last year's course [about counseling] was not as intensive as this year's. This year's is better than last year's. In addition, we also have a textbook this year. You have an on-hand aid. Last year, [that instructor] gave us some

handouts to read in class but that instructor took those handouts back immediately. So we could not use those aids to practice. (The group members laughed.) This year is different. The textbook itself is an on-hand learning aid. We could read it while we were practicing in and out of class. I even could try some skills that the instructor had not taught yet. (Hong laughed) I think the Counseling course was very meaningful. I would like to attend more courses like this course. It provided me opportunities to practice and to go through each step of conducting a counseling interview. I liked this course because it helped me to step out a little and I am satisfied with this little accomplishment already.

Researcher: Let me summarize your comments. First, I heard that you said that you found the Counseling course more meaningful than the other four courses because it is consistent with your learning goals. May I share your learning goals with this group?

Hong: You may.

Researcher: In the individual interview, Hong mentioned that she is planning to begin a new career after retiring. She told me that she was influenced by her senior high school teachers and always wanted to help others. Since she needs to work intensively, however, she does not have many chances to do it. She hoped she could do something really helpful to others when she retired. She thought she could do voluntary social work related to guidance after retiring so she brought a goal to the summer program—learning guidance. Since the Counseling course is consistent with her goal, she found her learning of this course meaningful.

Hong: No, I was not saying that. I said that at first I was facing some students' problems in school. I asked my colleagues for advice about how to deal with students' problems. Sometimes, my colleagues' suggestions did not work. Then, there were new teachers coming to ask me how to handle students' problems. I did not know how to give them advice. So, I thought that I could come to the summer program to learn about guidance. As far as the career planning which I mentioned to you in the individual interview, it was a new goal which I recently had in mind after I was granted a 25-year-service award [by the Taiwan government]. I am stepping into another stage of my career.

Researcher: The career planning is a new goal that you just recently set. So, the original reason you came to the summer program was to learn guidance skills to help your students solve problems, and to help new teachers in your school?

Hong: Right.

Researcher: Which goal was consistent with your learning of the counseling skills?

Hong: Both.

Researcher: The new goal and the original goal?

Hong: Right.

As in her survey responses, Hong explained meaningful learning only in terms of her growth in the taught disciplinary knowledge. From the individual interview and the fifth focus group interview, I learned that the desired disciplinary knowledge was the dominant criterion that she held to evaluate learning experiences. What she desired to learn was embedded in her learning goals. It is worth noting that Hong kept the same goal to learn guidance, but she saw the meanings of learning in different roles in different stages of her life (first as an in-service business teacher, and after retiring as a volunteer social worker). Using the coding scheme of this study, I coded Hong's perspectives on meaningful learning as valuing learning which contributes to her Growth on the Desired Taught Disciplinary Procedural Knowledge – G-TDK (CK; PK-D). In my mind, she was like the "Got Ya!" teacher who was always looking for tuna in the sea and was happy with finally getting a big tuna (see Figure 4.5).

Kai found learning meaningful when she obtained either serendipitous knowledge or taught discipline knowledge. She was like the teacher who swam hard to an island and found surprising treasures on it. In addition, she also carried a fish net to find the tuna she wanted badly. (See Figure 4.5).

Kai always found learning meaningful when those learning experiences (such as her learning of theories) helped her to improve her teaching practices. For example, Kai wrote in the survey about her undergraduate study in a teacher college after she taught in an elementary school for 10 years. She explained why she found that learning experience most meaningful:

> When I was studying in college and learning theories about psychology and education, I found myself already have practical experiences. I taught my own children and students by the methods similar to the theoretical recommendations.
>
> *-Kai*

> It was very happy when I took the Early Childhood Education course in college because I found that I had raised my children in the ways consistent with the early children learning theories. I was happy that I had my prior experiences to testify those theories. I found that the ways I taught my children and my students similar to the educational principles.
>
> *-Kai*

Kai elaborated on this in the third focus group interview. Kai was asked to read a research proposal about learning motivation in class and she practiced doing a critique of that proposal with peers. The purpose of that learning activity was to learn to write critiques rather than to learn about motivation theory. Kai, however, paid attentions to the contents of the motivation theory and found it meaningful because it confirmed her teaching practices.

> Kai: I'd like to make comments on the Research Methods course. This morning, the class was studying a research proposal about attribution theory. I didn't have knowledge enough to criticize that proposal. However, I was very happy to read the literature review because I found that I did not malpractice when I was guiding my students in school. I was assured by the attribution theory that my methods are correct.
>
> Researcher: You found it meaningful when you read the attribution theory?
>
> Kai: Yes. I had not heard about the attribution theory before. After I read this theory today, I found that I was already practiced teaching appropriately even though I could not verbally explain why I did it. I found that my practice of including the directions and details was not wrong. In fact, I found that the theory helped me verify every thing that I had done with my students.
>
> Researcher: You found the learning meaningful because this theory helped you proove...

Kai: Clarify.

Researcher: Clarify your previous teaching?

Kai: Right, Right. Clarify what I was doing as being correct.

Researcher: You found the learning meaningful because it helped you to clarify your existing teaching methods?

Kai: Right, right, right.

Apparently, Kai appreciated the reading of the research proposal. She did not, however, grow in the taught disciplinary knowledge, that is, how to criticize a research proposal. Instead, she was happy with her learning about attribution theory from this reading. Most importantly, she had a chance to clarify and justify her teaching practice by means of the academic theory. The value of the learning was that it helped Kai, a practitioner, justify and theorize her practice crafted through expertise—to connect her practice to "the Theory." I coded this kind of meaningful learning Growth on Serendipitous Knowledge, especially on the discipline of pedagogy and student guidance.

Kai made comments on her learning about statistics that were similar to her comments on the Research Methods course, although she was frustrated with her learning of statistics in the summer program. She explained to me in the fifth focus group interview why she found her learning of statistics meaningful because of her frustration:

> Kai: I found the Statistics course pretty frustrating. However, the learning experience helped me understand my own students' learning problems. My students always told me that learning mathematics was a tough task and I had difficulty understanding their feelings because I did not have problems in studying mathematics myself. I eventually experienced the feelings of helplessness and hopelessness after I took the Statistics course this summer.
>
> Researcher: Learning statistics is meaningful to you because you....

Kai: I realized what my students' were feeling when they did not learn mathematics well. I felt helpless and hopeless when I learned statistics. However, I am learning statistics in this summer with peer's support and help. Even though I feel it is l hard now, I am still willing to continue to learn this discipline. Learning from this experience, I know how to empathize with my students after I go back to teaching.

Researcher: Will you use the same instructional methods to teach your students?

Kai: No, I will not teach my students by the same ways the instructor used in the Statistics course. I will gradually teach my students from basic to advanced subjects. I will use my learning experience in the Statistic course to understand my students' learning, however. Then, I believe that I will better know what to do to help my students.

Researcher: Kai, did you find your learning of statistics in the summer meaningful?

Kai: Pretty meaningful.

Researcher: Pretty meaningful?

Kai: Not just meaningful.
Researcher: Strongly meaningful?

Kai: Right. I don't think that I have learned [statistics] well so far. Actually, I feel very frustrated in this course. However, I understand better why students did not learn well, and about their feelings when they did not learn well. I know how to empathize and accept their feelings and complaints. Or, to put it this way, I know what to do to motivate frustrated students to try to learn again.

In the Statistics course, Kai was not learning much of the taught disciplinary knowledge, but she found the experience very meaningful. She valued the understanding of others – her students and how they learn – she gained. To Kai, this understanding was new and became a guide for her to help students in the future. For a teacher, learning can become meaningful when it increases understanding of students' learning difficulties and know to change teaching, even though learning experience itself is frustrating. I coded Kai's learning of statistics as an example of Growth on Serendipitous Knowledge.

If I did not know what she thought about the Counseling course, I would think Kai was a teacher who always found learning meaningful by gaining growth in serendipitous knowledge. Like Hong, Kai found the counseling course meaningful because of the taught disciplinary knowledge she learned. Furthermore, counseling is what she wanted to learn from this summer program. Before the fifth focus group interview, Kai and I had an individual interview for one hour. She told me that the Counseling course was very meaningful because it provided her opportunities to see a new counseling model and made her aware of a "blind spot" in her counseling practice. Kai still used her learning of counseling to verify her existing counseling practice. However, she paid attentions to the taught disciplinary knowledge rather than discovering serendipitous knowledge. Her learning in the Counseling course weakened rather than assured her previous practices. I coded this experience as gaining Growth in the taught disciplinary knowledge, which the teacher desired to learn.

Tong found learning meaningful when she gained self-growth, taught disciplinary knowledge, or serendipitous knowledge. Tong found learning meaningful when it led to better understanding of her self as a "human." In the survey, Tong described her learning in a reading group, and how she better understood her own self through this very meaningful learning experience. Self-growth is the reason why Tong found the group learning meaningful. She gained the competencies to handle her emotions, and most important, she defined her life direction.

> Six years ago, I formed a study group with some friends. We discussed in the group to obtain a better understanding of our behaviors, feelings, thoughts and motivations. We wrote journals everyday and shared in the group. We helped each other to solve problems in everyday life. In the past six years, some members joined the group; some others left. There are always seven or eight members in the group. We became best friends. We encouraged each other on the road of life. This is the most meaningful learning that I have had so far in my life. It helps me think of many things.
>
> I learned to think many things of human life from this study group. I become assured where I want to go in my life. I become capable of dealing with my emotion problems. With this competency, I realize where I am in the instructional situations and how to interact with students.
>
> – *Tong*

> My major in college was Chinese. I was not graduated from the college of education. When I became a teacher, I took some courses in education in a program designed for inservice teachers. After taking those courses, I found myself interested in interacting with people. In particular, I found that I enjoyed in developing curricula and liked to work with children.
>
> – *Tong*

Tong also talked in the focus group interview about finding of her potential through learning about computers. She was happy with gaining computer skills. She, however, was most excited at conquering her anxiety about machine and finding ways to approach new domains.

> Tong: ...What I have tried to say is that such a learning experience creates an opportunity for me to face my inner nervousness. When I faced something of which I had fear, I used to get nervous immediately. [This learning is meaningful to me] because I experienced how to conquer my nervousness and told my self very determinedly that you have to face it. You have to face the fact that you came to take this course. You have to do it and to face it. And, I made it. The result made me realize that a person can do many things if he or she learns to do them step by step. Be not afraid of the new things. Don't reject learning them. If the person does it step by step, perhaps he or she can make it, perhaps not. No matter what the results are, it is meaningful to a person if that person have tried hard to achieve. Now, I have courage to face a thing that I used to be afraid of. I

don't think there is any thing that can not be learned. Speaking of the learning contents, I do not find anything new. However, I learned from this experience that I can learn well.

Researcher: The Computer course itself merely caused your nervousness. This is a starting point. It is not the feelings of nervousness that are meaningful, right?

Tong: It depends on how you view nervousness. If it is just a feeling of nervousness, it is not meaningful. If it makes you think and to try to handle it, nervousness becomes a motive to take action.

Researcher: Do you think the nervousness coming from the Computer course was meaningful?

Tong: I think so.

Researcher: Will you be willing to come to learn even if a course makes you feel nervous?

Tong: Yes, I will. I have courage to deal with it. Owing to this learning experience, I found that I have the ability to face nervousness although I may not face it immediately.

Researcher: You know your self, your ability because of the experience in this Computer course, right?

Tong: Right. I know how to face it.

Tong also actively reflected on her own teaching methods and her society during her learning in the Research Methods course.

Tong: ...In addition, I found that the instructor shared some of his own fruitful life experiences, and some of his lectures inspired me greatly even though the words sounded ordinary. For example, I took notes in his class on the 14th of June about qualitative research. When he concluded his remarks on the research tradition, he asked the class, "Is it correct [to use the qualitative research to study all topics?" Then he commented, "Don't just believe what people say or accept opinions simply because they are popular.' (The focus group members laughed.) I intended to write these words in my notebooks because I had a lot of thoughts to evaluate. I talked to my classmates about our traditional culture and educational systems that encourage us to obey authority older people say so, too, especially some elders or scholars say so, too. Or because something is currently popular, and we follow and simply just believe in it because others say it is good. We can not think differently from them. What I want to say is that I found my learning in this course interesting. The professor's lectures should serve to remind me as a

> teacher to think for myself, especially as the role of authority to students. We are accustomed to authority. I hope I can criticize myself, not to force students to follow me without careful consideration. I would try my best to guide students not to step in the frame of authority. I want to encourage them to thin bravely. Their mind will become freer. In sum, I found the professor's talks led to a pretty huge inspiration.

Tong was very serious about the research proposal writing project. She asked me to read her group's proposal – a survey research. She and I discussed the draft proposal for almost 2 hours without her team's presence. In the individual interview, I asked her whether she found her learning about writing a research proposal meaningful. She said yes but did not mention any disciplinary knowledge about research. Instead, she talked about how she learned to work with a group of colleagues who were careless in their learning – another growth in serendipitous knowledge.

Tong was not completely satisfied with a learning endeavor merely leading to her growth in serendipitous knowledge, however. In the third focus group interview, she argued:

> Tong: You wanted me to comment on the four summer courses. My opinion is that everyone attending the classes will find something meaningful from learning. The problem is that, according to my personal opinion, some growth is "micro." I brought big learning goals to the summer program. Considering the big goals, I felt very disappointed with my learning in the summer courses. Of course, some instructors' words often inspired me to reflect on something. I usually found difficulty in choosing what to talk about the group. Do you want me to report feelings to you according to my big goals or to talk about tiny inspirations?

Differing from commenting in the growth on serendipitous knowledge, Tong was assured about the values of the growth in disciplinary knowledge that she was eager to learn from the summer courses. And, she focused her comments on the taught disciplinary knowledge, not wandering into other domains:

Tong: The counseling skills are what I wanted to learn and expected to learn. I had the same expectation the past three years. I felt this summer's instruction was more consistent with my needs. The instructional objectives, the counseling strategies, the ways the instructor presented the strategies, and her teaching attitudes, I liked all of that pretty much. To me, it is a very meaningful learning experience. I had touched on some counseling models, but (laugh) I did not learn them very well I just got a very broad concept. I found this strategy very succinct. It is a very rational approach. This is the model of counseling which I imagined and I wanted eagerly. The instructor mentioned in class that you have to deal with the person's thought if you want to change that person's behavior. I agree. That is, that person has a way of thinking, and you need to read from that thinking to know why that person could not do something. Then, you change his thinking and help him change his behavior. I watched the instructor's role–playing in class, and that she always used this principle to do counseling. I found she did it so well and always asked questions that were to the point. I felt every question she asked was meaningful. However, I could not ask questions like she did when I did role-playing. (Laugh) I found that instructor is very skillful at picking points about which to client. Actually, I found that she always tried to find the client's thoughts from his talk and to find his problem. She then asked the client more questions until they figured out the problems causing his misbehavior. I feel that this skill is the one that I want to learn. To me, this course is really very meaningful.

Researcher: I heard many points. Let me rephrase. First, this course is consistent with your expectations of the summer program. You wanted to learn counseling from this program.

Tong: Correct.

Researcher: The reasons you find the course meaningful is the content, right?

Tong: Correct.

Researcher: The second point is still about the issue of content. You said this counseling strategy is a kind of rational approach. You prefer this approach. Considering this approach to counseling, you found this course meaningful.

Tong: Yes.

Researcher: The second point I heard is about the instructional methods which the instructor used in the Counseling course.

Tong: Teaching attitudes and methods.

Researcher: Did her teaching attitudes and methods help you learn in this course?

Tong: Yes.

Researcher: Did she become a teaching model to you?

Tong: I did not think about the issue of a model before you asked me.

Researcher: It is her teaching methods that helped you learn.

Tong: Right. Helped me.

Researcher: The third point I heard is that you said that you did not learn counseling well. However, you witnessed in the class that the instructor modeled the techniques, and that it is not just a theory written in textbooks. She really did it in action. You had chances to observe an experienced counselor performing the counseling skills in front of you. Is that what you tried to tell me?

Tong: Yes.

Researcher: Let me try this: a meaningful learning situation is one that lets you see an action performed out of a theory. If a learning situation provides you this kind of experience, you will find it meaningful, right?

Tong: Yes. In addition, because this is what I lack.

Researcher: You lack?

Tong: Because I did not have this kind of knowledge before. I did not have this kind of counseling skill before. I should go back to the point that I had mentioned at first. This is consistent with my expectation, with what I wanted.

Researcher: It is the content that you wanted. So, the content is the major reason for your finding the learning meaningful?

Tong: The major reason is the content. Yes.

Tong was a teacher actively exploring her self and was able to land on a treasure island. She was, however, a teacher looking deeply into the water for the dreaming fish.

Summary

There seems to be a pattern representing teachers' perspectives on meaningful learning. The combinations of the three identified characteristics of meaningful learning were not random. Growth existed alone; instructors and peers did not. Growth was

grouped with instructors or with peers; however, instructors and peers did not chain together. To some teachers, the only characteristic of meaningful learning was their intellectual growth as a learning outcome. To other teachers, the meaningfulness of learning was perceived when they found themselves appreciating both the learning outcomes and the learning process of studying with instructors and peers.

In what situations are the characteristics salient to teachers?

Since teachers had multiple perspectives on meaningful learning, I examined the identified characteristics across learning situations to understand which characteristics were salient in particular learning situations. This section is another way to examine the identified characteristics by considering the issue of situations. In what situations does a teacher consider the values of learning based upon the criterion of growth? In what situations is the same teacher inclined to notice the significance of learning processes in terms of instructors or peer's learning climate?

To address this issue, I first examined the teachers' written responses to the Survey and their discussion in the first focus group interview. In those settings I had asked them to describe and explain those learning experiences they had found meaningful so far in their lives, in the university, in inservice programs, and in the summer program. The identified characteristics of those recalled experiences across the four situations were shown in Table 4.2.

In those descriptions, some teachers focused on only one kind of meaningful learning, regardless of the conditions or settings of learning. For example, Hong found learning meaningful in all settings because of her growth (G) on the taught disciplinary knowledge (TDK). Pong found learning meaningfulness of learning in all situations

because of her self-growth (G-Self). Other teachers, Tong and Ming for example, both found learning meaningful so far and in university courses because those learning experiences contributed their self-growth (G-Self). When they talked about meaningful learning experiences in in-service programs and in this summer program, however, they focused on their growth in taught disciplinary knowledge (G-TDK). Pong also added the characteristic of growth on taught disciplinary knowledge (G-TDK) when describing her experienced in in-service programs and this summer program. Some other teachers valued growth in taught disciplinary knowledge, but they changed to talk about other characteristics in different learning situations. From this analysis of teachers' responses to the Survey and the first focus group interview, no clear patterns of meaningfulness depending on the learning situations emerged. One point worth noticing, however, is that the growth of taught disciplinary knowledge was particularly salient for teachers when they recalled their learning in the continuing education settings.

The teachers' discussions in the last four focus group interviews served as an additional site for examining how teachers' perspectives on meaningfulness varied across settings. In these group sessions, I asked teachers to focus on their current learning in the five summer courses that were taught by different instructors. I coded the teachers' comments on the five courses – Research Methods, Statistics, Computer, Assessment, and Counseling – for characteristics of meaningful learning (Table 4.3). I looked into each teacher's comments across the five courses. I found that the characteristic of growth in taught disciplinary knowledge (G-TDK) was identified by some teachers in their perceptions of every course. For example, Pong and Yang talked about the issue of G-TDK when commenting about each of the five courses (see Table 4.3). For them, G-TDK

was a salient criterion regardless of the learning situation. Other teachers, Kai and Tong for example tended to vary their perceptions of meaningfulness in different courses. Kai talked about the issue of growth in serendipitous knowledge (G-SK) and on self-growth (G-Self) in the Research Method course; growth in serendipitous knowledge (G-SK) and in taught disciplinary knowledge (G-TDK) in the course of statistics; and in G-TDK in the Counseling course.

Summary

> What kinds of in-service learning do experienced teachers find meaningful? What do they appreciate, believe to be worthwhile, want to experience again, and find supportive in becoming willing to commit to learning seriously?

The results showed that teachers view meaningful learning as having three characteristics: intellectual growth, model instructors, and supportive peers. The growth issue seems to be the major area through which the teachers found learning meaningful. Within the growth aspect, there was variation across and within teachers because teachers possess multiple perspectives on finding leaning meaningful. Common among the teachers was the perspective that they would like to continue to learn when they found that the taught disciplinary knowledge was learned well.

Table 4.2

Perceived Meaningful Learning across Learning Situations: Survey Responses and the 1st Focus Group Interview

Teachers	So far	University Courses	In-service Programs	Summer Program
Hong	G-TDK(CK)	G-TDK(CK)	G-TDK(PK)	G-TDK (CK)
Kai	G-TDK(CK)	G-SK(CK)	G-TDK(PK)	G-TDK(PK)
Tong	G-Self(CK)	G-Self(CK)	G-TDK(PK)	G-TDK(CK)
Ding	G-Self(PK) G-TDK(PK)	INST	G-TDK(PK)	-
Ming	G-Self(PK)	G-Self(PK)	G-TDK(PK)	G-TDK(PK)
Chin	G-Self(PK)	-	G-Self(PK) G-TDK(CK)	G-TDK(PK)
Pong	G-Self(CK)	G-Self (CK)	G-TDK (PK) G-Self (CK)	G-TDK (CK) G-Self (CK)
Yang	G-Self(CK) G-TDK(CK) G-Self(PK)	G-TDK(PK) G-Self(PK)	G-TDK(CK)	G-TDK(CK) G-TDK(PK) G-Self(CK)
Fang	G-Self G-SK Peer	G-TDK(PK) INST Peer G-SK(PK)	INST G-TDK	G-TDK(PK) Peer INST

Note. G-TDK= Growth - Taught Disciplinary Knowledge; G-SK= Growth -Serendipitous Knowledge; G-Self: Growth-Self; CK = Conceptual Knowledge; PK= Procedural Knowledge

Table 4.3

Perceived Meaningful Learning across Learning Situations:

All the 2nd, 3rd, 4th, and 5th Focus Group Interviews

Teacher	Research Methods	Statistics	Computers	Assessment	Counseling
Hong	(-)	(-)	(-)	(-)	G-TDK(PK-D) G-TDK(PK)-I
Kai	G-SK(CK) G-Self(CK)	G-SK(CK) G-TDK-I		N/A	G-TDK(D)
Tong	G-SK(CK;PK)-I G-Self(CK) G-SK(CK) (-)G-SK(CK-D)	N/A	G-Self(CK) G-TDK(PK) G-Self(PK)		G-TDK(D) G-TDK-I
Ding		(-)G-TDK(CK)-I			
Ming	INST G-TDK(CK)-I	(-)G-TDK(CK) G-Self(CK)	G-TDK(CK;PK)	N/A	G-Self(PK)
Chin	G-TDK(PK) G-TDK-I G-SK(CK;PK-D) INST	(-)G-TDK(CK)-I (-)G-TDK(D)	G-TDK(CK)-I G-TDK(PK) (-)G-TDK(PK)-I (-)G-TDK(D)	(-)G-SK(CK)-I	
Pong	G-TDK(CK)-I G-SK(PK)-I G-TDK(CK) G-SK(PK)	(-)G-TDK(PK)-I	G-TDK(CK)-I	G-TDK(CK;PK)	G-TDK(PK-D)
Yang	INST G-TDK(CK)-I G-TDK	INST G-SK(CK) (-)G-TDK(CK)-I	G-TDK(CK)-I (-)G-TDK(D)-I	G-TDK(CK)	INST G-TDK-I
Fang	G-TDK(CK)	G-SK(CK;PK) INST (-)G-TDK-I (-)G-TDK(CK)-I	G-TDK(CK)-I (-)INST	G-SK(CK)-I PEER	G-TDK G-TDK(PK)-I

Note. G-TDK= Growth -Taught Disciplinary Knowledge; G-SK= Growth – Serendipitous Knowledge; G-Self: Growth-Self; CK = Conceptual Knowledge; PK= Procedural Knowledge; D= Desired content; INST= Instructor; G-TDK-I= Growth-Taught Disciplinary Knowledge- good Instruction; G-SK-I= Growth-Serendipitous Knowledge-Instruction discipline; (-) negative comments or feeling.

Same Boat, Different Journey

As I mentioned in the introductory chapter, I was also aware of the issue of individual differences involving in teachers' perceptions of their learning while I was doing my practicum research experience. Teachers shared the same instructional activities and resources, but teachers in the same classroom varied in their perceptions of the meaningfulness of learning. This research, therefore, took the issue of individual differences into account for the purpose of describing the variance of practicing teachers' perceptions of the learning experiences that they find meaningful and supportive in developing an attitude toward lifelong learning. It seeks to understand how teachers who share instructional events differ in what learning they find meaningful.

The nine teachers did vary in finding meaningful learning in the same courses. The difference of teachers' perceptions of meaningfulness in the same instructional situations was shown on the teachers' responses on the Course Valuing Inventory (Nehari and Bender, 1978). Teachers, however, varied less in their perceptions in the courses they highly valued than they did in the courses they did not highly value. In focus group interviews, teachers often agreed their peers' comments about their learning in the five courses. In fact, there was only one debate, between teachers about whether one particular learning event was meaningful or meaningless.

Course Valuing Inventory was used in this research to understand the participant teachers' perceptions of meaningfulness in the five courses. The four scales are course valuing, cognitive-content learning, affective-personal learning, and behavioral learning. The contents of each scale were shown in Table 3.2 in Chapter 3.

The results of the Course Value Inventory showed that the variance of teachers' perceptions of the Course Value (CV) in the Counseling course is very low, SD = 0.03, compared to the variance of teachers' in the Statistics course, SD = 1.06 (Table 4.4). The Counseling course is highly valued by the teachers, mean of CV = 4.74 (highest score of this scale is 5). On the other hand, the Statistics course was not appreciated by teachers, mean of CV = 2.43. In short, the five courses can be divided into three groups by considering the variance of perceived values between teachers. The variance of perceptions among teachers increases in those courses were not perceived as meaningful, as in the case of the Statistics course (SD = 1.06, mean = 2.43) and the Assessment course (SD = 1.14, mean = 3.19). The second group of courses were more highly valued by the teachers, and the variance of perceptions between teachers increases, as in the Research Method course (CD = 0.72, mean = 4.09) and the Assessment course (SD = 0.72, mean = 3.30). The final group is the Counseling course (SD = 0.30, mean = 4.74) that was extremely valued by the teachers, and the degree of the variance between teachers is lowest compared to the other four courses.

Teachers' responses on the Content Learning (CL) scale, were identical to their responses on the CV scale. Teachers tended to vary less in their perceptions in the courses they highly valued than they did in the course they did not highly value. For example, the variance of teachers' perceptions of the content learning in the Counseling course is very low (SD = 0.03, mean = 4.49) compared to the variance of teachers' in the Statistics course (SD = 1.02, mean = 2.76) (Table 4.4).

Teachers' responses on the Personal Learning (PL) scale do not show the same pattern, however. For example, the Counseling course was most highly valued by

teachers because of their increased understanding of selves (mean = 4.24) compared to the Research Methods course (mean = 3.75) and the Computer course (mean = 2.9) (Table 4.4). The variance between teachers' perceptions in the Counseling course (SD = 0.52), however, is not lower than the variance for the Research Methods course (SD = 0.36); and not much different from the variance shown in the Computer course (SD = 0.55).

Teachers' responses on the Behavioral Learning (BL) scale were similar to theirs to those for the Course Value and Content Learning scales, in the Counseling course. It was the most highly valued by teachers (mean = 3.96) compared to the other courses and the variance between teachers' perception of this course was the lowest (SD = 0.55) among all the five courses (Table 4.4). The variances of teachers' perceptions on the less valued courses, Statistics (SD = 0.76, mean = 2.65) and Computer (SD = 0.64, mean = 2.74), were not higher than the Assessment course (SD = 1.14, mean = 2.94) (Table 4.4).

The results seemed to imply that teachers' perceptions of learning on the four scales are not identical. I checked the correlation between the scales and found that the Content Learning is highly related to the overall Course Valuing scale in all five courses: r (Research Method) = .8497, r (Statistics)=. 9731, r (Computer)=. 8204, r (Assessment)=. 8987, r (Counseling)=. 9117 (Table 4.5). On the other hand, teachers' responses on the Personal Learning scale and the Behavioral Learning scale are not highly related to their responses on the Course Valuing scale.

Table 4.4

Perceived Values of the 5 Summer Courses

Teacher	Scale	Research Methods	Statistics	Computers	Assessment	Counseling
Hong	CV	2.67	1.78	3.11	2.89	4.67
	CL	3.00	2.11	3.67	2.67	4.44
	PL	3.67	3.22	3.44	3.56	4.78
	BL	2.11	2.22	2.44	2.89	4.33
Kai	CV	4.11	3.00	3.56	-	5.00
	CL	4.22	3.11	3.11	-	4.44
	PL	4.22	3.11	3.11	-	4.78
	BL	3.89	3.00	3.00	-	3.78
Tong	CV	4.78	-	3.22	2.78	5.00
	CL	4.56	-	3.44	2.89	5.00
	PL	3.78	-	2.89	3.11	3.78
	BL	4.67	-	3.56	2.00	4.89
Chin	CV	3.22	1.00	2.44	2.78	4.22
	CL	4.33	1.56	3.22	4.00	4.22
	PL	3.44	3.00	1.67	2.78	4.56
	BL	3.44	2.11	1.78	2.78	4.00
Ding	CV	4.67	4.00	4.78	1.33	4.78
	CL	4.56	4.44	4.56	2.00	4.44
	PL	3.00	2.33	3.11	1.78	3.44
	BL	2.67	2.78	1.89	1.11	3.67
Ming	CV	3.89	3.67	3.67	-	4.33
	CL	4.00	3.78	3.78	-	4.11
	PL	3.89	3.56	3.00	-	4.56
	BL	3.44	3.67	3.00	-	2.89
Pong	CV	4.56	2.11	3.33	4.78	5.00
	CL	4.56	2.89	3.56	4.89	4.78
	PL	4.00	3.89	3.44	3.89	4.00
	BL	3.67	3.56	3.44	4.56	4.00
Yang	CV	4.67	1.44	2.44	4.33	4.67
	CL	4.56	1.56	2.56	4.22	4.22
	PL	4.00	1.56	2.44	3.78	3.67
	BL	4.00	1.44	2.44	3.56	3.78
Fang	CV	4.22	2.44	3.11	3.44	5.00
	CL	4.22	2.67	2.78	3.67	4.78
	PL	3.78	2.78	3.11	3.56	4.56
	BL	3.78	2.44	3.11	3.67	4.33
MEAN(SD)	CV	4.09(0.72)	2.43(1.06)	3.30(0.70)	3.19(1.14)	4.74(0.30)
	CL	4.22(0.50)	2.76(1.02)	3.41(0.59)	3.48(1.00)	4.49(0.30)
	PL	3.75(0.36)	2.93(0.73)	2.91(0.55)	3.21(0.74)	4.24(0.52)
	BL	3.52(0.75)	2.65(0.76)	2.74(0.64)	2.94(1.14)	3.96(0.55)

Accordingly, teachers' perceptions on the values of the contents that they have learned from a course seem to play an important role in determining their general impressions of that course. The variances of teachers' general judgements on the meaningfulness of learning seem to be related to the perceived values of the learned contents of a course. On the contrary, the achievement of self-awareness and the concrete behavior change do not seem to be the major source of teachers' general perceptions of the meaningfulness of learning.

The results of the quantitative data show that teachers varied in finding meaningfulness in the Assessment course and Statistics course more than in the other three courses.

Table 4.5

Correlation between Scales of the Course Valuing Inventory

	Content Learning	**Personal Learning**	**Behavioral Learning**
Course Valuing			
Research	.8497 (9) P = .004	.1042 (9) P = .790	.6388 (9) P = .064
Statistics	.9731 (8) P = .000	.1298 (8) P = .759	.6463 (8) P = .083
Computers	.8204 (9) P = .007	.5563 (9) P = .120	-.0191 (9) P = .961
Assessment	.8987 (7) P = .006	.9101 (7) P = .004	.9417 (7) P = .002
Counseling	.8117 (9) P = .008	-.2311 (9) P = .550	.5244 (9) P = .147
Content Learning			
Research		-.0293 (9) P = .940	.6796 (9) P = .044
Statistics		.2321 (8) P = .580	.7214 (8) P = .043
Computers		.3551 (9) P = .348	.2330 (9) P = .546
Assessment		.7010 (7) P = .079	.8891 (7) P = .007
Counseling		-.2250 (9) P = .561	.7840 (9) P = .012
Personal Learning			
Research			.5277 (9) P = .144
Statistics			.7879 (8) P = .020
Computers			.5333 (9) P = .139
Assessment			.8852 (7) P = .008
Counseling			-.0929 (9) P = .812

The focus group interviews also showed that teachers differed in finding meaningfulness in the same courses. The differences of teachers' perceptions were shown in two ways. One is that different teachers all found learning meaningful but from different criteria. For, example, in the second focus interview, Pong claimed that the Assessment course was meaningful because she found the assigned textbook very informative, organized, and useful for her teaching. In other words, she found the learning in the Assessment course meaningful because of her growth on the taught disciplinary knowledge (G-TDK) and attributed it to a well-chosen textbook. In the fifth focus group interview, Fang claimed that the Assessment course was meaningful to her because she enjoyed learning with peers in a field trip to a museum. Another example is teachers' perceptions of the Counseling course. In the fifth focus group interview, the only group interview after the Counseling course been taught, many teachers reported that they appreciated the course very much. For example, Hong, Kai, Tong, and Pong all found this course meaningful and would like to experience such learning again because they learned the taught disciplinary knowledge that they desired (G-TDK-D). Yang also valued the taught disciplinary knowledge, although she did not emphasize the issue of desired content. She also found the Counseling course meaningful because of the instructor's good teaching attitudes and professional modeling of counseling skills. Ming's comments on the Counseling course were, however, related to his awareness and reflection on himself.

The other type of variance between teachers' perceptions of the same course is that some teachers found the course meaningful but the others found it not worthwhile. For example, Chin claimed that she did not find her learning in the Statistics course

meaningful because she did not have any chance to use that kind of knowledge in her life, even though she indeed learned some concepts (G-TDK-D). Kai disagreed with Chin and continued to comment on the Statistic course:

> Kai: I found the Statistics course pretty frustrating. However, the learning experience helped me understand my own students' learning problems. My students always told me that learning mathematics was a tough task and I had difficulty understanding their feelings because I did not have problems in studying mathematics myself. I eventually experienced the feelings of helplessness and hopelessness after I took the Statistics course this summer.
>
> Researcher: Learning statistics is meaningful to you because you....
>
> Kai: I realized what my students' were feeling when they did not learn mathematics well. I felt helpless and hopeless when I learned statistics. However, I am learning statistics in this summer with peer's support and help. Even though I feel it is l hard now, I am still willing to continue to learn this discipline. Learning from this experience, I know how to empathize with my students after I go back to teaching.
>
> Researcher: Will you use the same instructional methods to teach your students?
>
> Kai: No, I will not teach my students by the same ways the instructor used in the Statistics course. I will gradually teach my students from basic to advanced subjects. I will use my learning experience in the Statistic course to understand my students' learning, however. Then, I believe that I will better know what to do to help my students.
>
> Researcher: Kai, did you find your learning of statistics in the summer meaningful?
>
> Kai: Pretty meaningful.
>
> Researcher: Pretty meaningful?
>
> Kai: Not just meaningful.
> Researcher: Strongly meaningful?
>
> Kai: Right. I don't think that I have learned [statistics] well so far. Actually, I feel very frustrated in this course. However, I understand better why students did not learn well, and about their feelings when they did not learn well. I know how to empathize and accept their feelings and complaints. Or, to put it this way, I know what to do to motivate frustrated students to try to learn again.

I coded this kind of meaningful learning as growth in serendipitous knowledge (G-SK) that was discovered by the teachers themselves and was not planned or intended by the instructors. Chin and Kai were taking the same course but perceived the meaningfulness of the course differently.

Teachers' Perceptions of Learning in Designing Education Research in Three Courses

This group of teachers spent most of their time that summer learning to write an educational research proposal. The nine participant teachers made a lot of comments on their experiences of learning to write a proposal in the focus groups and individual interviews. Many of them perceived all three courses (Research Methods, Statistics, and Computers) as connected courses to teach the teachers the discipline of "doing scientific research." Among of the nine participant teachers, only two teachers had experiences in writing a research proposal in their undergraduate work. One of the two teachers was responsible for research for his own school. The other eight teachers did not currently have any research duties in their schools. Yet some of the teachers still appreciated learning this knowledge. Some of them viewed these three courses as opportunities to learn the meanings of signs used in research reports. What does "valid sampling size" mean? Or, what does "estimate of standardized error" mean? Some of them were not focusing on the disciplinary knowledge, but shifted to reflect on areas other than the taught discipline. In the following section, I briefly describe how the three courses were taught and I present the differences of the nine teachers' perceptions of learning in these three courses.

Research Method course. The Research Methods course was the first course to be taught that summer. It was co-taught by two male instructors. The total hours of

classroom instruction were 32 hours over 4 weeks. The class usually met from 8 o'clock to 12 o'clock in the morning. The major task required was for teachers to write an educational research proposal for their own teaching practice. Every four teachers formed a research group to write a research proposal. In addition to the task of research proposals, each group of teachers needed to write a critique responding one of other groups' written proposal. Both the research proposals and critiques needed to be written in texts and to be presented orally during the last two meetings of the class. All the courses objectives, agenda, and required assignments were introduced by the instructors in the first meeting of the class. Then, one instructor gave structured lectures about how to write a research proposal. These issues included major concepts of research methodology, such as validity, assumptions of quantitative and qualitative research, and uses of statistical analysis in educational data. The instructor also taught the group of teachers how to learn to write a good research proposal by reading published research papers or unpublished research proposals. The other instructor led discussion sections to help the teachers learn to read and criticize examples of published papers and unpublished proposals. The topics of the given examples were mainly about innovation of educational techniques or school counseling treatments. Most of them were experimental or quasi-experimental research, taking quantitative approaches to analyze collected data and to represent results. The instructors also taught the formats of writing a research proposal with APA (American Psychology Association) formats. The instructors suggested the teachers read three textbooks about social science research methods but they did not use any book in the classroom instruction. All of their lectures were based on the instructors' notebooks. The instructors wrote points on the chalkboard during every

class and the teachers took notes. The instructors told the teachers that they could discuss their proposals with the two instructors after class. Teachers worked on their proposals for about two and half weeks and then submitted draft proposals to the instructors and to their peers who were responsible for making a critique. In the fourth week of class, group representatives gave oral reports to the class. A group of peers gave an oral critique after every presentation. The two instructors followed, giving suggestions for revisions to the proposals. The teachers then had about one week to revise their proposals and submit them to the instructors. The teachers were graded based on the two written documents: the research proposal and their critique of one of other groups' proposals. The instructors encouraged the teachers to collect data for their proposals after they returned to their schools, and to bring their collected data next summer (the teachers' fourth summer in the program) to use in writing their research report.

Statistics course. The Statistics course was the second course to be taught in that summer. One male instructor taught it. Like the Research Methods course, the Statistics course had 32 hours of total of classroom instruction. The class met every week for 6 weeks. The class met from 2 o'clock to 6 o'clock in the afternoon. There was one mid term and one final exam. Both were take-home exams. The instructor also gave practice questions every week. The teachers needed to answer those questions and submit them to the instructor at the beginning of the next class meeting. All the exams and practice questions contributed to the final grade. The instructor sometimes asked the teachers to answer questions in class. He explained all the requirements during the first meeting. He assigned a statistics textbook written in Chinese. Each teacher chose a topic listed in that book. Teachers who chose the same topic formed a group to study together, and one of

the group members needed to teach the class in the first half of each meeting (about two hours). The instructor gave a lecture in the second half of the meeting by either reviewing materials or adding new materials. The instructor told the class that he used to teach statistics by giving structured lectures. He said he would like to try new teaching and learning methods this summer because some of his colleagues suggested to him that teachers, as mature adult learners, could learn better from peers. There were three students who were preparing to take entrance exams for a masters program who sat in on this course because they learned from graduate students that the instructor was very knowledgeable in statistics. Two of the three students decided in the third not to stay, however, since they felt they were not learning from the teachers' reports.

The teachers started giving oral reports in the second week, and ended at the sixth week. The statistics topics covered in this course included basic concepts of descriptive statistics, such as categories of measures, sampling, central measures, variances, normal distributions, and some statistical testing, like Z test, t test, Chi square test, proportional variable testing, one-way analysis of variance (ANOVA), and linear regression.

Computers course. The Computers course was the fourth course to be taught. One male instructor taught the course. There were 32 total course hours. The class met in the first 5 weeks of that summer from 2 o'clock to 6 o'clock in the afternoon. The teachers were required to complete one take-home assignment and one take-home final exam. The course goals were to use Excel and SPSS/PC in statistical analysis. The instructor first demonstrated the use of the computer programs in front of the class. Then he gave time to the teachers to practice in the computer labs. He assigned two computer user books: one

was for Excel, and the other for SPSS. He used examples of the books for demonstration and for the teachers' practice.

The instructor intended to teach the software to the group of teachers to prepare them for doing statistical analysis after they collected research data. He reviewed some statistical concepts before he taught them how to use the computer software. Some teachers talked to him during the break of the second class meeting and told him that they found it difficult to learn of statistics from peers' reports. The instructor of the computer course taught some related statistical concepts before he demonstrated the Excel procedures. Issues of statistics covered in this course included descriptive statistics and inferential statistics. Statistics testing included t test, one-way analysis of variance, two-way analysis of variance, correlation, regression, and Chi square test. Because of licensing problems, the instructor did not teach the SPSS/PC program for windows. Instead, he taught the DOS version. He spent most of the time teaching teachers how to write commands in the DOS version of SPSS.

Ding was the only one of the nine participant teachers, in charge of doing research in school. He had experience doing research in psychological experiments in undergraduate work. He also was the only teacher who highly valued all three courses in the Course Valuing Inventory, CV(Research methods)= 4.67, CV(Statistics)= 4.00, CV(Computer)= 4.78 (see Table 4.4). He told me in the individual interview that he appreciated learning any new things. Although he used to do research in college, he was not sure whether he was doing it correctly when he was responsible for doing research at his school. The Research Methods, Statistics, and Computer courses helped him learn key criteria for good research. He was satisfied with the learned contents of the three courses.

Ding found the learning in the three courses meaningful because of the new contents that were related to his work at school.

Like Ding, Ming found his learning experience in the three courses meaningful: CV(Research methods)= 4.67, CV(Statistics)= 4.00, CV(Computer)=v4.78 (see Table 4.4). Ming's comments were, however, not only about his growth on the taught disciplinary knowledge. He was concerned about his self-growth when he was learning. He was looking for alternative ways of thinking and he found some in these courses, although he was struggling with the statistics course.

Hong's perceptions of the three courses were the complete opposite of Ding's and Ming's. She did not value her experience in the three courses: CV(Research methods)= 2.67, CV(Statistics)= 1.78, CV(Computer)= 3.11 (see Table 4.4). She explained in both the individual interview and the fifth focus group interview, her negative feelings to the three courses. She did not find them relevant to her current work. She was not in the summer program to learn knowledge for its own sake.

Like Hong, Chin did not find the three courses meaningful in general. She also emphasized that she did not need to do research in school, so the taught knowledge and skills about research were of low value to her. Differing from Hong, Chin had strongly negative feelings about the Statistics course because she complained that she was completely lost in the course. She talked in the fifth group interview that she was willing to learn statistics at the beginning even though she did not have research duties in school. She still would like to learn because she never had the chance to learn statistics in college. She wanted to take this opportunity to learn the concept of statistics. Unfortunately, she did not understand the peers' reports or the instructor's. Chin,

however, pointed out some learning events that she found meaningful in the Research Methods course. For example, she was inspired to reflect on the issue of gender differences by listening to that instructor's lecture. She was also happy at learning ways to teach inductive/deductive methods to her own students after watching that instructor's modeling on that issue. Of particular note were both comments referring to her growth on serendipitous knowledge that was not intended by the instructor of the Research Methods course.

Like Hong and Chin, Yang did not find statistics meaningful: CV(Statistics)= 1.44. In the third group interview, she commented on the instructional methods of the course. She argued that learners should not teach the discipline of statistics because the learners themselves did not really grasp the meanings of the statistical concepts and theories. They could only read aloud from the textbooks when they were asked to teach the whole class. She thought that the instructor should give an organized introductory lecture at the beginning. Yang also told me that she did not learn anything in that course. She just copied peers' answers for the course weekly assignments and exams. Unlike Hong and Chin, Yang found the Research Methods course very meaningful: CV(Research Methods)= 4.67. She valued the course learning because she gained knowledge about how to read research reports critically. She also found the learning process meaningful because the instructor was a paragon of education with a wonderful attitude and terrific teaching skills.

Fang's perceptions of the three courses were similar to Yang's in the Course Valuing Inventory: CV(Research Method)= 4.22, CL(statistics)= 2.44, CL(Computers)= 3.11 (see Table 4.4). Fang appreciated learning about the discipline of research methods.

She also appreciated the learning process in the Research Methods course because of the instructor's personality and peers' learning climates. She enjoyed the Statistics course because of that instructor's humor and knowledge, but she hesitated to answer me when I asked her whether or not she wanted to experience that kind of learning again.

Kai's perceptions of the three courses were similar to Fang's in the Course Valuing Inventory: CV(Research Method)= 4.11, CL(Statistics)= 3.00, CL(Computers)= 3.56 (see Table 4.4). Of particular note were her comments on meaningful learning about her growth in serendipitous knowledge. For example, she reflected on her teaching when she read a research report on learners' motivation in the Research Methods course. The instructors of that course used that report to teach the teachers how to read research reports critically and to learn to design a good research project. Motivational theories were not the focus of that course. Kai was the only participant teacher who insisted on the value of the Statistics course in the fifth group interview. She argued that she found the Statistics course "strongly" meaningful because she gained an understanding of her students' frustration in learning some school subjects after she struggled in the course herself.

Tong only took the Research Methods course and the Computers course. She found the Research Methods course very meaningful: CV(Research Methods)= 4.78. And she had moderate positive feelings about the Computers course: CV(Computers)= 3.22 (see Table 4.4). Tong found both courses meaningful because she gained growth in the taught disciplinary knowledge and gained new understanding of her self. She struggled with the computer software, however. In the fifth focus group interview, she emphasized that she was satisfied with knowing her own self better after striving to learn Excel on a

weekend at a friend's home and she conquered her computer phobia. From that point of view, she thought that was a meaningful learning experience because she knew better about her self and she also learned computer skills. It was not a meaningful experience for her, however, if she considered that the course instruction failed to support her learning in class (so that she needed to ask help of a friend and to learn Excel in her friend's home).

Like Ding, Pong was one of the two participant teachers who had prior experience doing research in college. She valued her learning in the Research Methods course: CV(Research Methods)= 4.56. And she valued her learning in the computer course: CV(Computers)= 3.33 (see Table 4.4). This was because of her growth in the taught disciplinary knowledge. She was satisfied with completing a research proposal and gaining better knowledge of each step of designing an educational research project. She also claimed that the experience of writing a research proposal changed her thinking habits, training her to think in a careful manner. She was not frustrated at her learning in the Statistics course: CV(Statistics)= 2.11 (see Table 4.4). In the third group interview, she talked about her frustrations in learning to use hand held calculators to compute statistics. She emphasized that she admired the instructor's knowledge. She was not disappointed at the instructor's attitude. He did not try to help her when she asked about how to use different types of calculators to compute the same statistics.

The nine teachers shared the same instructional resources and learning activities in the three courses. They differed in finding learning meaningful or meaningless. Differences of teachers' perceptions were shown on the areas of growth (taught disciplinary knowledge, serendipitous knowledge, and self-knowledge). Differences in

the teachers' perceptions were also shown in the teachers' emphasis on the content that they desired to learn.

Summary of Findings of this Research

Experienced teachers found three kinds of learning meaningful: (a) learning that resulted in teachers' intellectual growth; (b) learning in which instructors were impressive and made the process joyful; and (c) learning in which peers were supportive of each other in the process of learning. Teachers varied in the ways they found learning meaningful. Some teachers found learning meaningful only when the learning experience contributed to their growth. Other teachers found learning meaningful either when that learning led to growth or when they found the course instructors impressive during the process of learning. Still other teachers found all the three kinds of learning meaningful: growth, instructors, and peers.

Growth was the major issue within which teachers discussed what made learning meaningful. Within growth, perspectives on meaningfulness were complex across and within teachers; teachers possessed multiple perspectives on what makes learning meaningful.

A three-layer model can illustrate the complexity of the growth issue. Layer one refers to teachers' growth in disciplinary knowledge that was taught by instructors, serendipitous knowledge that was not intended in class instruction, and knowledge about the teachers' self. Teachers held in common, however, the view that they would like to continue to learn when they found that the taught disciplinary knowledge was learned well. Layer two refers to teachers' preference of types of knowledge. The results showed that teachers had no preference of procedural knowledge over conceptual knowledge.

Layer three refers to the teachers' emphasis on the desire to obtain a particular body of knowledge.

There seem to be patterns representing teachers' perspectives on meaningful learning. The combinations of the three identified characteristics of meaningful learning were not random. Growth existed alone; instructors and peers did not. Growth grouped with instructor or with peers; instructors and peers did not chain together. To some teachers, the only characteristic of meaningful learning was their intellectual growth as a learning outcome. To other teachers, the meaningfulness of learning can be perceived when they find themselves appreciating both the learning outcomes and the learning processes of studying with the instructors and peers.

No clear patterns of meaningfulness depending on the learning situations emerged. One point worth noting, however, is that the growth of taught disciplinary knowledge was particularly salient for teachers when they recalled their learning in the continuing education settings. The characteristic of growth on taught disciplinary knowledge (G-TDK) was identified by some of teachers in their perceptions of every course.

The nine teachers did vary in finding meaningfulness in the same courses. The differences of teachers' perception of meaningfulness in the same instructional situations were shown on the teachers' responses on the Course Valuing Inventory. Teachers, however, varied in their perceptions less in the courses that they highly valued than in those that they did not. In focus group interviews, teachers often seconded their peers' comments on the five courses. That is, there was only one debate between teachers about whether one particular learning event was meaningful or meaningless. Teachers,

however, differed in finding learning meaningfulness in the same courses. The differences of their perceptions were shown on the areas of growth (taught disciplinary knowledge, serendipitous knowledge, and self-knowledge). Differences in teachers' perceptions were also shown in the teachers' emphasis on the content that they desired to learn.

CHAPTER FIVE

DISCUSSION

In this chapter, I conclude with a discussion of what has been learned about the characteristics of meaningful learning from the experienced teachers, suggestions for further research on teachers' development of attitudes toward lifelong learning, and a discussion of the implications for the continuing education of teachers.

Characteristics of Meaningful Learning

What kinds of learning do experienced teachers find meaningful--appreciate, believe to be worthwhile, want to experience again, and find supportive in becoming willing to commit to learning seriously? The nine experienced teachers taught me that they valued inservice learning experiences that lad to their growth in taught disciplinary knowledge, self, or serendipitous knowledge as a result of the learning endeavor.

Growth on Well Taught Disciplinary Knowledge: The Prime Value of Learning

Teachers highlighted their appreciation of learning new disciplinary knowledge or clarifying their prior confusion about ideas within the discipline. This perspective is similar to Gestalt psychologists' and cognitive psychologists' definitions of meaningful learning in terms of "eyes are opened" (Wertheimer in Katona, 1940), "understanding of a procedure" (Katona, 1940), or "acquisition of new meanings" (Ausubel, 1968). This perspective has also been claimed by other practicing teachers, for example, "renewing thinking" (Day, 1993), "broadening horizons" (Day, 1993), and "having deeper insights" (Davies, 1993). Growth on the taught disciplinary knowledge is a salient criterion that is used by teachers and researchers to determine the degree of meaningfulness of learning.

"Gaining new understanding" seems to be a more important value of inservice learning from experienced teachers' perspectives compared to acquisition of practical information.

Of particular note were teachers who claimed to experience meaningful learning when instructors helped them learn taught disciplinary knowledge well. Teachers responded dramatically to the instructors who taught well. They pointed out the strengths of instruction, such as giving good examples, having organized lectures, modeling thoughts and skills in front of students, and knowing students' current knowledge. Teachers attributed their growth in taught disciplinary knowledge primarily to the instructors' teaching. In contrast, teachers felt that some instructors did not understand their current knowledge and failed to help them to learn the disciplinary knowledge.

Teachers seemed to watch the instructors and were even skillful in evaluating their own learning experiences by analyzing instructors' teaching. This finding led me to understand that teachers' primary concern in learning is not merely what they have learned about the taught disciplinary knowledge but whether or not that knowledge is well taught by the instructors. It implies that learning which teachers value is determined not merely by what they have learned about the taught disciplines, but also by the quality of the instruction.

That teachers frequently commented on instructors' teaching strategies also implies that experienced teachers had formed quite rigid "scripts" about good teaching to support successful learning.

Serendipitous Knowledge and Self Growth

In addition to the growth on the taught disciplinary knowledge, the participant teachers also claimed that some learning experiences were meaningful because they

resulted in self-growth. The teachers appreciated that owing to this learning they had chances to explore their inner worlds or to find new ways to direct their own living. This is similar to the humanist psychologists' emphasis on the issue of change of personality in defining significant learning (Rogers, 1960) and on the issue of re-defining aspects of self (Brookfield, 1987). Other practicing teachers also reported that they reassessed self and found that learning experience meaningful (Davies, 1993). Compared to the growth on taught disciplinary knowledge, the value of growth on self is less addressed by researchers but it seems to be an important criterion for practicing teachers to determine the meaningfulness of learning. This finding led me to be aware of the issue about the ultimate ends of teachers' learning. Is the final goal of continuing teacher education to help the teacher to enter the academic discourses of the disciplines on education and psychology? Or is it to get close to the teacher's self? Which can better help practicing teachers to become lifelong learners?

Comparing teachers' comments on their self-growth knowledge or on serendipitous knowledge with their comments on the growth in taught disciplinary knowledge, I found that teachers affirmed the values of self knowledge or serendipitous knowledge less than the taught disciplinary knowledge. Many teachers doubted the value of those learning experiences leading to their growth in self knowledge or serendipitous knowledge when those learning experiences did not contribute to their growth on the taught disciplinary knowledge. When teachers valued their growth in the taught disciplinary knowledge, they did not bring the issue of growth in self or serendipitous knowledge to evaluate the value of that learning experience, however.

Expectations, Practicality, and Usefulness

Teachers found learning meaningful by growing on taught disciplinary knowledge, self, or serendipitous knowledge. But the value of growth in these domains was not assured when considered with the goals teachers brought to inservice education programs. The value of growth, even on taught disciplinary knowledge, was re-evaluated by some of the teachers when the issue of desire was considered. "But this is not what I want to learn," was the most frequent complaint I heard from the participant teachers when they added notes to those learning experiences they found "meaningful" but not "very meaningful." Teachers' desire was often expressed in their statements of goals for returning to school. Tong argued in the third focus group interview that any learning can have meaning to learners. For example, an instructor's words inspired her to reflect on her teaching and the entire Chinese culture. These kinds of growth were tiny to her, however, when she considered the goals that she brought to the summer program. She expected to learn about school guidance. She wanted to know how the academic groups with expertise on guidance had different views from her as a practitioner without formal training in counseling and educational psychology. Her insights on Chinese culture and teaching were, unfortunately, not meeting her major learning goals at all.

That the criterion "desiring to obtain a body of knowledge" played an important role was evidenced by teacher's criticizing some learning as meaningless by saying, "I don't need this kind of knowledge," or "I have no opportunity to use these skills." When I looked into the interview transcripts, however, I found that the teachers who brought up these concerns seldom talked about the particular taught disciplinary knowledge that they claimed to have learned. For example, Chin claimed that the knowledge about research

methods was not useful and she did not talk about the particular content knowledge in both focus group interviews and individual interview. This raises the questions: Are teachers basing their judgment of the usefulness of taught content on their understanding? How well did these teachers get an understanding of the taught disciplinary knowledge? Are teachers' complaints about their learning of something that they did not desire to learn (or something not relevant to their current life) merely covers for their failure in getting an understanding of knowledge? Are teachers in fact having problems making sense of the taught disciplinary knowledge that they believe they already know?

Practical knowledge is Not Equal to Procedural Knowledge

The fact that teachers emphasized practicality or usefulness also raises issues about what teachers mean by "practical" or "useful." I learned from this research that by practical knowledge, teachers did not mean only techniques or procedural knowledge. Practicing teachers have often been pictured as a group of learners wanting to learn techniques, not valuing theories. I found this statement to be partially true. I agree that teachers may be in favor of learning practical knowledge they can use in their current lives. However, I would like to argue that practical knowledge can not be interpreted simply as techniques or as procedural knowledge. In my data, I found the teachers valuing both conceptual knowledge and procedural knowledge as practical. What they emphasize is whether or not they have oportunities to use learned knowledge. Teachers find learning of some procedural knowledge, such as conducting a research proposal, not meaningful because they don't need to conduct research in school. This finding makes us reflect on the language issue. When we hear a teacher complain the taught disciplinary knowledge is not "useful" or not "practical," do we jump to an interpretation that the

teacher is asking for procedural knowledge? Maybe some teachers really believe that they need procedural knowledge and only want to learn procedural knowledge. However, after working with this group of teachers, I think teachers may view not only procedural knowledge as being practical. The issue is whether they find taught disciplinary knowledge connected to problems they intend to solve. To teachers, gaining new understanding of concepts is as meaningful as acquiring procedural knowledge. The key issue is how the knowledge helps teachers open their eyes and find alternatives to the problems that they have.

Individual Teachers' Attitude Toward Knowledge and Continuing Learning

It is worth noting that not all of the teachers emphasized the issue of immediate usefulness of learned knowledge in their current teaching or living. Some teachers claimed that they appreciated understanding of any kinds of knowledge even though they had not seen any opportunities to use that knowledge. "Any knowledge is useful if I understand it. I can wait for a while although I do not know how to use it currently," Pong commented in the individual interview. This can be viewed as an issue about individual differences between teachers. It also leads me to think of the issue about teachers' attitudes toward knowledge and continuing teacher education. Is knowledge worthwhile because of its immediate usefulness? Or, is knowledge valuable because of its potential to further understanding? For those teachers who emphasize the issue of desired contents, the true value of knowledge resides in the immediate usefulness in their teaching. In contrast, teachers who welcome any kind of knowledge seem to value the possibility of achieving further understanding or the "freedom of thoughts" described by John Dewey. Does it really matter that inservice learning should be closely related to

teachers' classroom work? A short answer for this question is yes and no. It depends on the teachers' attitude toward knowledge.

Liberal Professional Education or Technical Professional Education

This difference also reminds me of the enduring debate in teacher education between liberal education and technical education. Teacher educators like Borrowman (1965) have stated that teacher education should develop teachers to learn based on "a commitment to the pursuit of knowledge for its own sake and not on an undue concern for immediate practical results" (p. 11). He argued that the function of teacher education is to develop the inquiring mind and habits, not to impart technical knowledge to teachers. Although Borrowman's argument was mainly about pre-service teacher education, comments of the experienced teachers in this study also indirectly revealed the issue. Some teachers seemed to view continuing teacher education as a place to help them value all kinds of growth in intelligence, and not concern themselves with its immediate usefulness. The other group of teachers seemed to view teacher education as a place to "recharge" the demands of teaching practice.

The differences among teachers in their conceptions of knowledge and teacher education also emerged in the ways that teachers commented on the meaningfulness of learning tasks and assessments. Some teachers criticized the research proposal writing assignment for being neither a meaningful task nor a fair assessment. They complained that they did not have enough knowledge and time to conduct a research proposal meeting the criteria given by the instructors. They also brought up the difficulty of working with a group of peers on such a complicated task. Again, some teachers argued that they did not need to conduct any empirical research in school, so that kind of

learning task is not meaningful to them. They were not happy with the given reason to learn to write a research proposal (it will become a policy to ask teachers to do research in the future). On the other hand, other teachers appreciated the learning task even though they did not need to conduct research in school. They used this opportunity to become literate in so called scientific research and its language. Another group of teachers was motivated to work on the task because they were responsible for conducting educational research for their schools. Again, the issue of practicality arises. To those teachers who are responsible for doing research in school, the value of the learning task -- writing a well designed research proposal--is there if the needed knowledge and skills are well taught. For those teachers who are not currently in charge of the research work in school, policy seems to be not sufficient to motivate teachers to learn to do research seriously.

Recently, researchers (Bransford, Brown, & Cocking, 1999) have suggested building community-centered environments for teachers' learning by encouraging teachers to do classroom-based research projects (or so called action research). The group of participant teachers had learned to design and write a research proposal for their own teaching in the summer program. To some degree, the summer program tried to prepare teachers for the future demands of teaching. However, teacher educators and the participant teachers did not communicate deeply why current teachers need to learn to do research. The argument that skills will be needed in the future is not really convincing to teachers, and sometimes this makes them think it is just another superficial command that does not have any relevance to their practice. The participant teachers who kept saying that they did not need to do research in schools were actually expressing that they did not agree with the justification that they might need these competencies in the future. Based

on my observation, the instructors spent little time helping teachers to think of the purposes of doing action research in schools. I wondered how teachers might change their view of the function of the learning task if they had more opportunities to consider the values of doing research. Bransford, Brown, and Cocking (1999), who promote the idea of action research in teachers' learning and education, have pointed out several purposes of teachers' doing action research:

> [I]t is an important way for teachers to improve their teaching and their curricula, and there is also an assumption that what teachers learn through this process can be shared with others. Action research contributes to sustained teacher learning and becomes a way for teachers to teach other teachers. It encourages teachers to support each other's intellectual and pedagogical growth, and it increases the professional standing of teachers by recognizing their ability to add knowledge about teaching. Ideally, active engagement in research on teaching and learning also helps set the stage for understanding the implications of new theories of how people learn. (p. 187)

For researchers, doing action research is a route for teachers to become more autonomous in the teaching profession, to solve the problem of isolation in teachers' work, and to develop a liberal mind with a reflective and critical mentality. I am not sure how teachers will change their thinking about learning to conduct research if they are oriented to these goals of doing research. I think, however, that helping teachers to connect the research activities with their teaching self would create opportunities for teachers to re-examine the values of the learning task. And more importantly, teachers may feel that the teacher educators care about them and consider them as humans, not just as workers.

Model Instructors Make the Learning Process Joyful

By working with the group of experienced teachers, I learned that teachers appreciated watching an instructor with high professional knowledge, responsible

teaching attitudes, and a charming character. They admired the instructor's commitment to scholarly work and to teaching. This characteristic was not documented in previous literature. I used to struggle with this characteristic. I did not know why teachers talked about the instructor's personality when they pointed to some learning experiences as meaningful. After I considered this as a characteristic of learning processes that teachers appreciate, I realized why it is a criterion for teachers to evaluate learning experiences. Teachers, like other groups of learners, want to have a joyful learning process, and the instructors contribute the most to that joy. It is worth noting that the joy is not merely from humor but also from the instructor's commitment to his or her work. The instructor is seen as seriously building expertise in disciplines and responsibly teaching teachers. Teachers seem to develop a more positive attitude toward learning and serious inquiry by learning from these kinds of instructors and would like to continue to learn. There is a Chinese saying that, "Modeling in person is better than lecturing in words." I am not completely sure whether this is a unique characteristic of meaningful learning common to Taiwanese practicing teachers or merely my personal projections. However, I found this issue worthy of further examination.

Implications for Future Research

Doing this research, I learned that teachers were capable of finding meaningfulness in learning in terms of the values of learning outcomes or learning processes. Teachers actively construct the meanings of learning when they are engaged in learning activities. Among those meanings, however, teachers value some more than others. When I consider the issue of meaningfulness with teachers' lifelong learning attitudes, I realized that not every "meaningful learning experience" encourages teachers'

desire to learn more of the disciplinary knowledge, makes them become more willing to continue learning, more willing to take challenging learning tasks, and willing to commit to learning seriously. This research sought to understand the kinds of learning teachers found meaningful and I learned that we need to find out what kinds of meaningful learning foster teachers' willingness to continue to take challenging learning tasks and to be capable of conquering those challenges.

When I re-read the definition of meaningful learning that I presented to the participant teachers, I understood why teachers selected unexpected features of learning events such as, instructors who are humorous or instructors who are responsible. Those learning events did not make sense when related to my definition of meaningful as "believe to be worthwhile". However, they made sense when I thought this way: "I appreciate Professor Wang's humor." Or, "I appreciate Professor Jone's responsibility." I realized that my definition was the cause of problem. "Believe to be worthwhile," seemed to be related to any type of competency growth and self-growth. "Want to experience again" is related to desired contents and instructional quality. "Find supportive in becoming willing to commit to learning seriously" is not clear. Sometimes I checked, for example, by asking teachers "Did you want to experience this again?" Most of time I just used the term "meaningful," I did not check which parts teachers selected to recognize as a meaningful learning experience. In order to make sure what kinds of learning experiences might lead teachers to continue to participate in teacher education, I suggest further research on this aspect of meaningful learning.

I also found that it is important to establish a long-term relationship with the participant teachers to better understand their feelings and perspectives on inservice

learning. I found that teachers became more open to me and willing to share their thoughts with me. However, I felt overloaded by doing the fieldwork alone. I did not have time and energy enough to carefully analyze teachers' words and my fieldnotes. If I have the chance to work with teachers again, I would find a team of at least two more researchers, to work together on the fieldwork.

The technique of focus group interviews helped me to develop conversations with the group of teachers. I found that teachers became easier to talk within the group. I found the group size is crucial, however. My group had nine participant teachers—too many. Some of the teachers had little much chance to talk in-group. I would try to make six members a group as Vaughn, Schumm, and Sinagub (1996) suggested if I have another chance to run focus group interviews.

I also learned that individual interviews are needed no matter how many focus group interviews had been done. Teachers talked more deeply in individual interview than in the group interviews. They either clarified the comments that they had made in-group interviews or extended their points with more complete references to their personal beliefs, concerns, and experiences. And again, I think individual interviews would be better run by a team, not a single researcher.

This research began with a focus on understanding teachers' perceptions of learning experiences and resulted in a description of teachers' values toward inservice learning. In order to understand the impact of learning experiences on teachers' learning attitude, researchers next need to establish a system for measuring teachers' attitudes toward learning. With the instruments, researchers can further to investigate the role of teachers' learning experiences in the formation of teachers' attitude toward lifelong

learning. Researchers also can start to compare teacher educational programs that are consistent with practicing teachers' perspectives on meaningful learning to those programs that are not consistent with teachers' values to see how teachers differ in their attitudes toward future learning.

Implications for Teacher Education

Reflecting on the research findings, I found that teacher educators can design and deliver continuing teacher education consistent with teachers' perspectives on meaningfulness of learning. I also found that teacher educators can create opportunities for teachers to rethink their existing ideas about knowledge and learning within the context of meaningfulness in an age that requires teachers to be lifelong learners.

Being Consistent with Teachers' Perspectives

The results showed that experienced teachers' emphasis on their growth in the taught disciplinary knowledge was the prime value of continuing professional learning in the formal learning setting. With this finding, teacher educators need to show that thy are prepared to explain themselves clearly to the teachers about the taught disciplines. Teacher educators need to show teachers that they have organized perspectives on the disciplines that they are teaching. The instructors should say what they mean and commit to their jobs. Otherwise, teachers may direct themselves away the taught disciplinary knowledge.

The challenge to the teacher educators is how to demonstrate their expertise in disciplinary knowledge as well as be able to help teachers learn the disciplines. Teachers appreciated a good example of concepts or theories. Teacher educators, however, need to

be careful choosing and presenting examples to teachers. Many teachers began thinking of areas other than the taught discipline knowledge because of the examples.

Teachers admired the instructors who were committed to disciplinary knowledge. Teacher educators were expected by the teachers to show how to get a better understanding of the problem. A surface introduction to knowledge can not encourage teachers. Teacher educators have to throw themselves into the problem that teachers are concerned about and strive to get a better understanding and a solution. Saying that this is a new technique, or the principle is so and so, is not enough. Teachers wanted to witness the educator's expertise in disciplines. I found that teachers' attitude toward lifelong learning may be influenced by meeting instructors who love knowledge and love to work with their colleagues.

Creating Opportunities for Teachers to Re-consider their Current Beliefs on Learning

Growth in serendipitous knowledge is the only characteristic that did not appear in the literature about meaningful learning. Doing this research, I found that teachers could actively develop serendipitous knowledge, especially knowledge about teaching, when they do not learn taught disciplines well. This is a dilemma. From the views of teacher educators, I was happy that teachers gained a new understanding of teaching when they were learning in continuing teacher education programs. However, teachers seemed to stop learning the taught disciplines more deeply. The worst situation would be that teachers would not try to learn those disciplines. I am concerned that when teachers' shift to the knowledge other than the taught disciplinary knowledge it may hinder their lifelong learning attitude. One important issue is how teacher educators can help teachers

come back to learning the taught disciplinary knowledge from the serendipitous knowledge.

Continuous communication with teachers about the nature of knowledge and educational practice is needed. Teachers valued the learning experiences in which they were understood and helped by the instructors. Teachers are very skillful in examining learning and teaching situations. They are able to provide good suggestions for better learning and teaching but many of them chose not to talk to instructors directly. It many be part of the Chinese culture. But, it is worthwhile for teacher educators to try to establish a more explicit form of communication with teachers about inservice education. I found that the focus group interviews created an environment for both teachers and researcher to focus on the teachers' current learning. Teacher educators and teachers may use it for mutual understanding.

More importantly, it can create opportunities for teachers and teacher educators to rethink their conceptions of learning within the contexts of becoming lifelong learners. In the research, teachers did not view doing research as a possible way to develop their professional competencies, or as a way to become autonomous in teaching and some of them were not able to take advantages of the learning opportunities. Teacher educators can help teachers to re-define the value of action research to a practicing teacher in a constantly changing society.

APPENDICES

APPENDIX A

EXPERIENCED TEACHERS' LEARNING SURVEY

EXPERIENCED TEACHER'S LEARNING SURVEY

Cheng-hui Chen

Michigan State University

Please try to write the responses, which are most like your own feelings, experiences, and opinions. All your responses to questions of this survey are very important in helping me to understand experienced teachers' learning.

I appreciate the time you spend answering questions asked in this survey and I value the answers you give. All the responses you give are strictly confidential.

Please complete and return this survey to the researcher. Thanks.

Please answer each question. ID:_____

Part I. About you:

1. Gender: Male____ ; Female_____ .
2. Age: _____ years old.
3. Highest degree earned: 3-year Vocational school____ ;
   5-year Vocational school____ ;
   5-year Teacher training school___ ;
   University____ ;
   Master____ ; Doctorate____ ; Other_____.

4. Major:_____.
5. Years of experience as a teacher:_____ years.

Part II. About your school:

6. Type of School teaching now: Elementary school____; Middle school____;
   High school____; 3-year Vocational school____;
   5-year Vocational school____; University_____;
   Other_____.

7. School location: Urban____; Suburban____; Small town____; Rural____;
   Fishing village____; Mountain____; Other_____.

Part III. About your teaching:

8. Current teaching position: Subject teacher____(Subject_____);
   (Can choose more than one) School counselor____; Special education teacher____;
   Director of Program____(Program_____);
   Chief of Department____(Department_____);
   Principle____ ; Others_____.

9. Subjects of teaching now:_____.
10. Size of class:_____.
11. Students' ages: _____years old.

12. This checklist is designed to explore what teachers are concerned about their teaching.There are no right or wrong answers. Please choose appropriate responses according to your own concerns.

We would consider you to be "concerned" about a thing if you think about it frequently and would like to do something about it personally. You are not concerned about a thing simply because you believe it is important--if it seldom crosses your mind, or you are satisfied with the current state of affairs, do not say you are concerned about it. You may be concerned about problems, but you may also be concerned about opportunities which could be realized. You may be concerned about things you are not currently dealing with, but only if you anticipate dealing with them, frequently think about them from this point of view and would like to do something about it.

Read each statement, then ask yourself;

WHEN I WORK IN MY SCHOOL, HOW MUCH AM I CONCERNED ABOUT THIS?

1 Not concerned
2 A little concerned
3 Moderately concerned
4 Very concerned
5 Extremely Concerned

Lack of instructional materials	1 2 3 4 5
Feeling under pressure too much of the time	1 2 3 4 5
Doing well when a supervisor is present	1 2 3 4 5
Meeting the needs of different kinds of students	1 2 3 4 5
Too many non-instructional duties	1 2 3 4 5
Diagnosing student learning problems	1 2 3 4 5
Feeling whether more adequate as a teacher	1 2 3 4 5
Understanding current educational policies	1 2 3 4 5
Becoming too personal involved with students' learning and problems	1 2 3 4 5
Challenging unmotivated students	1 2 3 4 5

Read each statement, then ask yourself;

WHEN I WORK IN MY SCHOOL, HOW MUCH AM I CONCERNED ABOUT THIS?

1 Not concerned
2 A little concerned
3 Moderately concerned
4 Very concerned
5 Extremely Concerned

Being accepted and respected by professional persons	1 2 3 4 5
Working with too many students each day	1 2 3 4 5
Guiding students toward intellectual and emotional growth	1 2 3 4 5
Whether each student is getting what he needs	1 2 3 4 5
Getting a favorable evaluation of my teaching	1 2 3 4 5
The routine and inflexibility of the teaching situation	1 2 3 4 5
Maintaining the appropriate degree of class control	1 2 3 4 5
Whether students respect me	1 2 3 4 5
Increasing students' feelings of accomplishment	1 2 3 4 5
Recognizing the social and emotional needs of students	1 2 3 4 5
Too many standards and regulations set for teachers	1 2 3 4 5
Helping students to value learning	1 2 3 4 5
Adapting myself to the needs of different students	1 2 3 4 5
Understanding ways in which student health and nutrition influence their learning	1 2 3 4 5
Understanding the psychological and cultural differences that underlying students who come from different background	1 2 3 4 5
Insuring that students grasp subject matter fundamentals	1 2 3 4 5
Rapid rate of curriculum and instructional change	1 2 3 4 5
Lack of public support for schools resulting in inadequate instructional resources	1 2 3 4 5
Understanding why certain students make slow progress	1 2 3 4 5
Working productively with other teachers	1 2 3 4 5

Read each statement, then ask yourself;

WHEN I WORK IN MY SCHOOL, HOW MUCH AM I CONCERNED ABOUT THIS?

1 Not concerned
2 A little concerned
3 Moderately concerned
4 Very concerned
5 Extremely Concerned

Students who disrupt class	1 2 3 4 5
Teaching required content to students of varied background	1 2 3 4 5
Selecting and teaching contents well	1 2 3 4 5
Improving testing and grading procedures	1 2 3 4 5
Whether I wish to remain in teaching	1 2 3 4 5
Increasing my proficiency in content	1 2 3 4 5
Whether students can apply what they learn	1 2 3 4 5
Whether each student is reaching his or her maximum potential	1 2 3 4 5
Whether students are learning what they should	1 2 3 4 5
Seeking alternative ways to ensure students learn subject	1 2 3 4 5
Instilling worthwhile concepts and values	1 2 3 4 5
The nature and quality of instructional materials	1 2 3 4 5
Understanding what factors motivate students to study	1 2 3 4 5
Having too many students in a class	1 2 3 4 5
The mandated curriculum is not appropriate for all students	1 2 3 4 5
Not being able to cope with troublemakers	1 2 3 4 5
Lack of opportunity for professional guidance and growth	1 2 3 4 5
Not having sufficient time to think and plan	1 2 3 4 5
Clarifying the limits of my authority and responsibility	1 2 3 4 5

13. What do you find recently that you need most for your current teaching?

Part IV. About your learning experience:

In your life, you have experienced learning in many different settings, for example, at home, in school, in museum, in your work, etc. You might find yourself bored, confused, or frustrated in some learning experience, while in other situations, you appreciated your learning and found it meaningful. Think of some learning experiences you found meaningful and respond to the next two questions.

14. Describe that learning experience(s) briefly.
15. Why was that learning meaningful for you?

As an experienced teacher, you have probably participate in a variety of in-service learning activities, for example, attending a workshop in a teacher training institute, taking courses in a university, attending a speech in conference, or observing colleagues' teaching in your own school.

16. In what condition will you participate in in-service training or educational programs voluntarily?
17. Are you currently participating in in-service learning activities? Yes___; No____
18. If yes, please describe what kind of activities you are participating in?

Whether or not you are currently participating in in-service learning activities, think of some in-service learning that you found particularly meaningful and respond to the next two questions.

19. Describe that in-service learning experience(s) briefly.
20. Why was that learning meaningful to you?

Becoming an experienced teacher, you have had many experiences of taking courses in university, for example, your undergraduate program, teacher preparation program or in-service programs. Think of some of that learning that you found particularly meaningful and respond to the next two questions.

21. Describe that learning experience(s) briefly.
22. Why was that learning meaningful to you?

23. Here is a list of courses. Mark those courses which you have taken in the summer program.

Seminar in Educational Psychology		Seminar in Social Psychology			
Seminar in Theories of Personality		Seminar in Instructional Psychology			
Application of Psychological Testing		Classroom Management			
Seminar in Theories of Counseling		Seminar in Psychology of Motivation			
Seminar in School Guidance		Seminar in Cognitive Development and Guidance			

Think of some of your experiences in taking those courses which you found meaningful and respond to the next two questions..

24. Describe that course(s) learning experience(s) briefly.
25. Why was that course learning meaningful to you?

26. Read each subject, then ask yourself:

HOW MUCH DO I KNOW ABOUT THIS SUBJECT?

1 None
2 Very Little
3 Some
4 Quite A Lot
5 Very Much

Technique and Practice of Counseling	1 2 3 4 5
Cognitive Development and Guidance	1 2 3 4 5
Instructional Measurement	1 2 3 4 5
Methodology of Behavior Science	1 2 3 4 5
Computer Use in Education	1 2 3 4 5
Stress Management	1 2 3 4 5
Theories of Counseling	1 2 3 4 5
School Guidance	1 2 3 4 5
Social Psychology	1 2 3 4 5
Instructional Psychology	1 2 3 4 5
Statistics of Education	1 2 3 4 5
Classroom Management	1 2 3 4 5
Psychology of Motivation	1 2 3 4 5
Career Planning and Guidance	1 2 3 4 5

27. Please use this page to write down your comments on this survey. Thanks.

APPENDIX B

CLASSROOM OBSERVATION GUIDE

CLASSROOM OBSERVATION GUIDE

Course :_____Date:_____

INTRODUCTION
Motivation

Objectives

Advance organizer

Review Prerequisites

Agenda

INSTRUCTION
Explanation

Demonstration

Practice

Feedback

CONCLUSION
Summary of main ideas
Integration with other segments
Revisit Objectives
Motivation
Tests

DELIVERY
Environment
- Structure environment
- Arrange materials
- Greet audience

Delivers Verbally
- Speaks understandably
- Paces speech
- Express self

Delivers Nonverbally
- Relates to audience
- Shows expression
- Use materials

CLASSROOM OBSERVATION GUIDE (Continued)

Course: _____ Date: _____

FORMS OF LEARNING ACTIVITIES
In-class expository lesson activities

1. Pairs 2. Response cards 3. Jigsaw technique 4. Tutorial in a lecture
5. Puzzles 6. Games 7. Practice of skill or knowledge 8. Role play
9. Constructive problem solving 10. Whips 11. Free writing

Discussion activities used for in-class expository lesson by content

1. Debriefing 2. Creative problem solving 3. Problem based learning 4. Case studies

By scope

1. Whole group major discussion 2. Whole group short discussion
3. Small group discussion 4. Fishbowl 5. Panel 6. Survey

Out-Class Activities

1. Homework assignment 2. Projects 3. Field trips 4. Guests 5. Shadowing

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LEARNING RESOURCE AVAILABLE

SIGNIFICANT LEARNING EVENTS

APPENDIX C

FOCUS GROUP INTERVIEW GUIDING QUESTIONS

FOCUS GROUP INTERVIEW GUIDING QUESTIONS

1. In general, do you think your learning in this summer program meaningful?
   - -appreciate?
   - -believe to be worthwhile?
   - -want to experience again?
   - -find supportive in becoming willing to commit to learning seriously?

Why? Or Why Not?

2. What course(s) do you find meaningful?

Why?

3. Which parts of instruction of this course made you feel your learning meaningful?

Why?

4. What particular learning events (Significant Learning events) did you find meaningful?

Why?

5. Any person having different perceptions on the mentioned events?

APPENDIX D

COURSE VALUING INVENTORY

COURSE VALUING INVENTORY

You have just taken the course_____in the summer program.

Please choose appropriate responses according to your experiences of learning in this course.

1 Totally Disagree
2 Partly Disagree
3 Not Sure
4 Partly Agree
5 Totally Agree

This course was a very valuable learning experience for me	1 2 3 4 5
This learning experience helped me to become more aware of my own feelings and reactions	1 2 3 4 5
I consider this learning experience as time and effort very well spent	1 2 3 4 5
This course had no impact on my personal growth	1 2 3 4 5
The course helped me to acquire important basic knowledge	1 2 3 4 5
This course had no impact on the ways in which I communicate	1 2 3 4 5
Increasing my proficiency in content	1 2 3 4 5
I can now relate to the subject matter of the course from a wider perspective	1 2 3 4 5
In this course I had not developed my own learning goals	1 2 3 4 5
Somehow I worked harder in this course than I usually do	1 2 3 4 5
This was not a meaningful learning experience	1 2 3 4 5
I did not gain much information in this course	1 2 3 4 5
This experience helped me to realize this importance of my own feelings	1 2 3 4 5
I did not gain much information in this course	1 2 3 4 5
This course was useful in helping me develop new ways of learning	1 2 3 4 5
I feel more perceptive of others now, and more sensitive to their needs	1 2 3 4 5
I am now better able to conceptualize problems presented in the course	1 2 3 4 5
Somehow I was more open and sharing	1 2 3 4 5

COURSE VALUING INVENTORY (Continued)

You have just taken the course_____in the summer program.

Please choose appropriate responses according to your experiences of learning in this course.

1 Totally Disagree
2 Partly Disagree
3 Not Sure
4 Partly Agree
5 Totally Agree

I understand better how others perceive me	1 2 3 4 5
This was a constructive and definitely helpful learning experience	1 2 3 4 5
I participated in this course less than I usually	1 2 3 4 5
In some ways I feel good about myself due to this course	1 2 3 4 5
My understanding of the subject matter has not increased much	1 2 3 4 5
Somehow I have taken more risks in this course, and I feel good about it	1 2 3 4 5
I would like to take another course like this one	1 2 3 4 5
This course had no impact on my understanding of who I am or what I want	1 2 3 4 5
The course helped me achieve a deeper understanding of the field	1 2 3 4 5
I did no more reading or thinking than was actually expected	1 2 3 4 5
The course did not helped me gain through knowledge of the field	1 2 3 4 5
Some of my values have been clarified due to this learning experience	1 2 3 4 5
I would not recommend this course to a friend	1 2 3 4 5
I have now a much clearer integrated notion of the subject matter of the course	1 2 3 4 5
I think I have learned to be more tolerant	1 2 3 4 5
Taking the course made little difference for me	1 2 3 4 5
I have not been able to tie things together and make much sense of the content	1 2 3 4 5
In this course I have taken more responsibility for my own learning than I	1 2 3 4 5

APPENDIX E

INDIVIDUAL INTERVIEW GUIDE

INDIVIDUAL INTERVIEW GUIDE

1. Check with the individual teacher about the information that he or she provided in survey or focus group interviews.

2. Ask the teacher if there are points he or she would like to add about his or her perceptions of meaningfulness of learning.

3. Ask the teacher's overall feelings to the participation of this research.

APPENDIX F

NOTEBOOK FOR SUMMER PROGRAM LEARNING

NOTEBOOK FOR SUMMER PROGRAM LEARNING

Course: _____

Date of Class	Time of Class	Describe the learning events or activities that you found meaningful in the course.	Explain why you found the learning experience meaningful.

APPENDIX G

LETTER OF INVITATION

Letters of Invitation

[Letter was translated into *Mandarin*, the native language of participants]

Cheng-hui Chen
1308 Haslett Rd., Apt #2
East Lansing, MI 48823
U.S.A.

Dear teacher:

I am a graduate student at Michigan State University, doing research on teachers' learning. As part of the research, I will be observing lessons in all courses you will attend in the summer program over this summer period and talking to you about your experience with in-service learning. I plan to interview you at least one time and to be in the classroom everyday when the courses are taught. I will videotape classroom activities and tape record interviews to provide a record for my research. I will be careful that observations and interviews do not interfere with your school work and will interview you only if you are willing to talk to me and you consent to your participation in this research.

To insure confidentiality, I will not use your name in anything written from this research. Videotapes of lessons and audiotapes of interviews will be viewed or listened to only by me and my dissertation committee members.

I hope that you will agree to participate in this research. If, however, you choose not to grant permission, I will not interview you, make notes of your activities, or use segments of tapes in which you can be identified.

If you have questions, please call me, Cheng-hui Chen, at (02) 2-764-1089 (Taiwan), (517) 333-0528 (U.S.A.), or Dr. Ralph Putnam at (517)-353-9285 (U.S.A.), who is the director of this project. I will be happy to share with you the general results of this research when it is completed.

Sincerely,

_____

Cheng-hui Chen

APPENDIX H

ASSURANCE FORM

Assurance Form

Consent to Participation in this Research

I have read the above statement and consent to participate in this research. I understand that I am free to withdraw my consent and to discontinue my participation at any time.

Participant Teacher's Name: _____

Signature:_____Date:_____

Permission to use data for other research and educational purposes

In addition to the above consent, I ask your permission to use interview audiotapes and videotapes from your classroom for educational and other research purposes. These uses include having other researchers and teacher educators listen to audiotapes or view videotapes to examine teaching and learning. Having these kinds of concrete examples of classroom teaching and learning is important in the research process and in helping teachers improve their teaching. In no case will the teachers, students, or schools be identified by names to persons listening to tapes or viewing videotapes. If you do not grant this permission, audiotapes and videotapes in which you can be identified will be viewed or listened to only by committee members working on this project.

I have read above statement and grant permission for videotapes and audiotapes in which I can be identified to be used for the research and other educational purposes described. I understand that I am free to withdraw this consent at any time without penalty.

Signature:_____Date:_____

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