

## **ABSTRACT**

CRAWFORD, PAULA HICKMAN. Exploring the Development of Teaching Expertise: Novice and Expert Teachers' Reflections upon Professional Development. (Under the direction of Sandra Wall Williams.)

The purpose of this study was to examine novice teachers' (n=7) and expert teachers' (n=7) learning experiences and how these experiences were integrated into the teachers' practices. The participants reflected upon experiences from professional development and their classroom during a semi-structured audiotaped interview. Data were analyzed using concept maps and matrices to distill the multipage interview transcriptions into manageable and comparable elements. Theoretical constructs underlying the analysis drew from expertise and situated learning theories.

Comparisons between novice and expert teachers found that the acquisition of the knowledge bases in developing teaching expertise is a nonlinear process and that there are many factors upon which this development is predicated. The knowledge bases that are constructed as a part of developing teaching expertise are not acquired in a certain sequence, after a designated amount of time, nor as a result of particular experiences in a teacher's practice. While there are distinct differences between novice and expert teachers, the findings indicate that most teachers seek guidance from colleagues rather than from staff development opportunities. Novices and experts both expressed concern regarding lack of time and that student academic diversity demands impact the quality of their job. Novices' concerns included classroom discipline, inability to level lessons for student needs, and insufficient time to observe more experienced teachers. The most significant difference between novices and experts was the directly inverse proportional relationship between

experts' abilities to properly level instruction and manage the classroom and the novices' inability to do so.

**EXPLORING THE DEVELOPMENT OF TEACHING EXPERTISE: NOVICE  
AND EXPERT TEACHERS' REFLECTIONS UPON PROFESSIONAL  
DEVELOPMENT**

by

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## CHAPTER ONE INTRODUCTION

“Teacher expertise is the single most important factor in determining student achievement and fully trained teachers are far more effective with students than those who are not prepared” (U. S. National Commission on Teaching and America’s Future, 1997, p. 3). How does one identify teacher expertise? What knowledge and skills do teachers possess who have expertise? Teaching has been described as a combination of an art, a craft, and a science. Knowing what to teach, how to teach it, and what methods to use with particular topics, particular kinds of students, and in particular settings all combine to form the knowledge and skills that define teaching expertise (Shulman, 1986). In the language of cognitive psychology, ‘experts’ are individuals who are extremely highly skilled within their field (Yates & Yates, 1990). In her review of several books on the topic of teacher education, Neisler (2000, p. 2) comments that:

the new mission of public education is to educate a cross-section of children, many of whom would previously have dropped out, and to bring them up to world-class standards using complex teaching strategies and curricula that are not only motivational, but that connect to the real lives and needs of all students.

It is this author’s view that, novice teachers, especially those in their first year of teaching, have little insight, by virtue of their lack of experience in the profession, into the areas that make up these descriptions of expertise shared by Shulman (1986), Yates & Yates (1990), and Neisler (2000). New teachers are leaving the occupation at very high rates. For example, schools prior to the 1993-94 school year hired about 286,200 teachers; but in the following twelve months, about 213,000 teachers – an

amount equivalent to 75% of those just hired – left the occupation altogether (Ingersoll, 1999). In more recent nationwide data, according to the National Center for Education Statistics as reported by Lu in the News & Observer (2002), about 20% of new teachers left the profession within three years. This national data correlates closely with the data from the North Carolina Department of Public Instruction (NCDPI) statistical information for the year 1999-2000. The NCDPI figures show that about 20% of teachers with no previous teaching experience left the classroom after one year or less. That figure was about 16% in 1995-1996. Only about half of those new to teaching or teaching in North Carolina remained on the job after five years. As a result of these teachers leaving the field, a constant demand is created for the efficient and effective development of expertise in order for America's students to perform up to their potential.

#### The Novice's Predicament

Novice teachers are expected to perform the majority of duties required of experienced teachers from day one of their employment. They have little time to reflect on their practice and are virtually isolated from colleagues for most of their working hours. The assumption could be made that novice teachers, more so than those with more expertise, may be less effective in obtaining administrative support, dealing with student discipline, and contributing to decision-making.

Ingersoll (1999) sites high job dissatisfaction in addition to low salaries, inadequate support from administrators, rampant student discipline problems, and little faculty input into school decision-making all as factors contributing to high rates of

teacher turnover and new teachers exiting the field. So, how do novice teachers develop expertise? How do others support them in this development? What level of awareness do novice teachers have in this process of their acquisition of knowledge and resulting change in actual practice toward development of expertise?

The focus of this study is to describe teachers' learning experiences and how these learning experiences are integrated into actual practice from the perspective of initially certified or novice teachers and expert or master teachers.

### Background and Statement of the Problem

First, teacher expertise, measured by teacher experience and master's degrees as well as teacher performance on statewide examinations, has been found to be the single most important measurable cause of increased student learning (Ferguson, 1991). Therefore, expertise theory as it relates to teaching, comprises the first component of the conceptual framework of this study. Darling-Hammond (2000, p. 1) asserts that:

the weight of substantial evidence indicates that teachers who have had more preparation for teaching are more confident and successful with students than those who have had little or none. Recent evidence also indicates that reforms of teacher education creating more tightly integrated programs with extended clinical preparation interwoven with coursework on learning and teaching produce teachers who are both more effective and more likely to enter and stay in teaching.

According to Ingersoll (1999), there is surprisingly little consensus on how to define a "qualified teacher". He also states that there exists substantial empirical support for the reasonable proposition that student learning is affected by the qualifications of teachers. Having a teaching certificate, of course, is the minimum criteria. However,

there is a great deal of controversy concerning how much training and which kinds of preparation teachers ought to have to be considered adequately qualified (Haertel, 1991). Study of teachers whose students regularly perform highly on achievement criteria has helped researchers begin to identify characteristics of expertise in classroom teaching (Berliner, 1986). The study of expertise, defined as such, is a relatively new endeavor that Berliner (1986, 1988) has done much to describe. He identified five stages of skill development in teachers, distinguishing between the novice and expert teacher, and discussed ways to evaluate these teachers that are appropriate for their developmental level. In Berliner's (1986) theories of skill development and expertise, which employ Dreyfus and Dreyfus (1986) thinking about the novice-to-expert continuum of "stage theory", Berliner explained that each stage must be mastered before a practitioner can move to the next stage. He contended that these stages must be mastered sequentially and that these more advanced levels of expertise can only be attained after the first few years of full-time teaching. He also argued that a set of context free rules must be acquired. There are no specific years assigned to these stages. However, the hallmark of the 'expert pedagogue' (Berliner, 1986) resides in being able to integrate subject matter knowledge with active knowledge concerning pupil characteristics, classroom dynamics, instructional methods and, specifically, how to adjust instruction in relation to student responses (Leindhart & Greeno, 1986; Roehler & Duffy, 1986).

It would be logical to assume that if teacher expertise is the single most important factor that contributes to student learning that a lack of expertise may be somewhat detrimental to student learning (Ferguson, 1991; Darling-Hammond, 2000,

p. 1). The literature suggests that fewer teachers are staying in the profession long enough to truly develop expertise - as it is defined by Shulman (1986) and Ingersoll (1999). Shulman (1986) identifies pedagogical content knowledge – knowing which method of teaching to use with particular topics, with particular kinds of students, and in particular kinds of settings –as being knowledge that the more experienced teacher has developed. Ingersoll (1999, p. 34) states, “Teaching requires a great deal of expertise and skill ... entails a complex combination of art, craft, and science ... requires knowing what to teach and how to teach it”. Teacher retirement and increased student enrollment have created a greater demand for teachers. However, the majority of newly hired teachers are replacements for those teachers who have left the occupation all together. As was previously cited, schools prior to the 1993-94 school year hired about 286,200 teachers; but in the following twelve months, about 213,000 teachers – an amount equivalent to 75% of those just hired – left the occupation altogether (Ingersoll, 1999). In more recent nationwide data, according to the National Center for Education Statistics as reported by Lu in the News & Observer (2002), about 20% of new teachers left the profession within three years. This national data correlates closely with the data from the North Carolina Department of Public Instruction (NCDPI) statistical information for the year 1999-2000. The NCDPI figures show that about 20% of teachers with no previous teaching experience left the classroom after one year or less. That figure was about 16% in 1995-1996. Only about half of those new to teaching or teaching in North Carolina remained on

the job after five years. These new teachers are leaving the field almost as fast as they enter it, which allows for little time to be devoted to the development of expertise.

High rates of teacher turnover are attributable to two related causes: teachers seeking to better their careers and/or teachers dissatisfied with teaching as a career (Ingersoll, 1999). Although recruitment of individuals from other fields, lateral entry certification, and those interested in mid-career change has been on the rise; these efforts will matter little if large numbers continue to exit the field before developing expertise.

Considering the research reviewed (Ferguson, 1991; Darling-Hammond, 2000; Ingersoll, 1999; Shulman, 1986) there are clear indications that teacher expertise is ranked high as a major contributing factor to student performance. Two recent studies have shown that teacher expertise is the key to increased student learning. These studies focused on the impact that teacher preparation, experience, and qualifications had on the variance in student reading and mathematics scores and are reported in the *Phi Delta Kappan* (1998). One study, that focused on New York City schools with similar demographics but widely differing achievement levels, found that the differences in teacher qualifications and experience accounted for about 90% of the variance in student reading and mathematics scores at grades 3, 6, and 8. The other large-scale study conducted in Texas found that the effects of teacher expertise was so powerful that disparities in achievement between black and white students could be almost entirely attributed to differences in teacher qualifications.

Eisenhart and Behm (1991), from information gained in a National Science Foundation sponsored study examining learning to teach and developing expertise, suggest that teachers need consistent sets of experiences, more in tune with their needs, to acquire expertise. They assert:

if novices can be exposed to a more explicit and consistent set of experiences, and one that is more sensitive with their needs as novices, we would expect them to leave the program with more confidence in the skills they have acquired and a clearer view of the identities they are striving for (p. 13).

Richard Miller, speaking on behalf of the United Federation of Teachers (UFT), states ([www.uft.org/nyteacher/vps/98-99](http://www.uft.org/nyteacher/vps/98-99)) that “the public understands that our students benefit when teachers are qualified by training and educational background, and the UFT has long maintained that professional development is key to making higher standards work.” A closer look at how novice and expert teachers integrate new learning into their everyday activities and practice within the authentic work environment may contribute to the development of effective and supportive continuing education for all teachers.

The second component of the conceptual framework for this study is situated learning theory. This area is drawn from the need to develop organizational and continuing educational support, and possibly more effectively provide professional development, to teachers within their work environment. According to Wilson (1993), ‘authentic activity’ is best understood as ordinary cognitive practices that are situationally defined, tool dependent, and socially interactive. Authentic activity requires that learning and knowing always be located in the actual situations of their

creation and use, not the simulations artificially constructed in schooling practices. Thus learning and knowing are a process of enculturation, not simply a matter of acquisition. Problem solving and human cognitive practices are carried out in conjunction with the setting, not simply as internalized mental processes.

Putnam and Borko (2000) recommend that since teachers' transfer of learning from staff development experiences to the classroom sometimes fails to happen that most of the learning experiences should take place in the actual classroom. These authors consider that the situative approach has important implications for preservice and inservice teachers. They investigate where to situate teachers' learning experiences, the nature of discourse communities for teaching and learning, and the importance of tools in teachers' work. Implications from their research on teachers (p.6) suggest that:

both experienced and novice teachers often complain that learning experiences outside the classroom are too removed from the day-to-day work of teaching to have meaningful impact ... imply that most or all learning experiences for teachers should take place in actual classrooms.

This perspective coincides with the recommendation from the National Center for Research in Vocational Education (NCRVE, 1993) study to situate learning in the context of authentic practice. Research and policy studies implicate that "teacher training and staff development need change. Teachers are not currently trained to design and conduct classrooms based on a culture of authentic practice, which has been determined to enhance student learning and engagement" (1993, NCRVE at the University of California-Berkeley, p. xxii-xxiii).

Additionally, consideration of teaching practices situated in the authentic teaching environment involves rumination and collegial interaction to support effective change in practice. Much learning takes place and meaning is made through critical reflection. A critical examination of practice through group discourse and individual reflection, within the actual practicing environment of the teacher, can have a significant impact upon development of expertise. Yost and Senter (2000, p. 6) reveal that the end result of critical reflection for the individual is cognitive change. John Dewey (1916) supported this type reflective learning. He believed that the teacher quality most important in development of teachers empowered to improve upon conditions of schools was critical reflection. It is this author's view that essential learning and movement toward developing expertise is a product of the social participation in situated environments of a school's community of practice and culture.

The areas of teacher expertise, situated learning, and, as a part of each of these, critical reflection are drawn upon to guide and inform this study.

#### Purpose of the Study and Research Questions

The purpose of this study is to examine and describe teachers' learning experiences, from the perspective of initially certified or novice teachers and expert or master teachers. The participants individually reflected upon a past experience from professional development and a significant learning experience from their classroom. They shared how their learning experiences were integrated into their everyday practice.

This study uses a qualitative or interpretivist framework to explore and describe the learning processes. Merriam (1998, p. 7) describes this type of qualitative research as that which:

builds abstractions, concepts, hypotheses, or theories rather than tests existing theory. Often qualitative studies are undertaken because there is a lack of theory, or existing theory fails to adequately explain a phenomenon ... Qualitative researchers build toward theory from observations and intuitive understandings gained in the field.

This qualitative method is appropriate because there is a deficiency in the area of the topic of teacher expertise. This method provides the opportunity to more thoroughly investigate the phenomena of teacher expertise and add to the existing body of information in this field based on, or grounded in what actually takes place from the teachers' descriptions. This qualitative method is personal in nature to the involved participants; it looks at relationships, and focuses on understanding a given setting and not about making assumptions about that setting. Utilization of this method required the researcher to be present in the setting over time with as much time or more spent on the reiterative nature of the analysis of the information acquired. The research questions that undergird this study are:

1. How do teaching professionals develop expertise in their practice?
2. What makes learning experiences meaningful in the context of practice?
3. How do teaching professionals connect day to day experiences with professional development?

### Significance of the Study

This study considers the role of expertise in the professional development of teachers. It is drawn from Barbara Daley's research that explored the learning experiences of novice and expert nurses (1999). In her landmark study, Daley called for additional research to be conducted in the development of expertise across various contexts and different professions in order to build on the existing knowledge base. She also utilized concept maps as a tool to analyze the information collected, which this study replicates.

This study is significant because it will build a broader base of information about how teachers construct knowledge within the context of their practice. Building upon Daley's work with nurses, this study will contribute to understanding the ways that teachers learn and develop expertise in their work environments. The information derived not only will add to the existing corpus, but will help to clarify the meaning and definition of teacher expertise – what it looks like, how it is developed, what knowledge and skills those labeled as expert teachers actually possess.

In a review of the current literature, the most often mentioned author on the topic of teacher expertise, David Berliner (1986, pg 8), outlines the values of studying expert teachers and comparing them with novice teachers for the following reasons:

- To obtain fresh insights about the *internal* criteria that might be used for judging the enactment of a task itself (italics in original).
- To glean information about the routines, scripts, and schema used by experts.
- To obtain evidence that will influence the design of training programs for beginning teachers.
- To know where to begin in the instruction of novice teachers.

- To be provided with exemplary performances – richly detailed descriptions of instructional events that should be a part of teacher education programs.
- To promote thinking about expert teaching systems through research as has been done in the development of expert systems in the fields of medicine, chess, or physics.
- To examine the cooperating or supervising teacher’s modeling, mentoring, coaching, etc. influence on the novice through their tacit knowledge within their actions.
- To examine the automaticity, routinization of procedures of experts.
- To influence current policy in states where teaching certificates are provided to individuals with no teaching experience and to influence policy about master teachers.
- To enhance and distinguish teaching expertise for the reason of professional pride.

Analysis of the information revealed through this study could have implications for program planning in continuing education, professional staff development, evaluation of teachers regardless of where they fall in the continuum of expertise development, and for supportive programming within the public schools to enhance novice teacher learning. Additionally, there may be implications for the structure and integration of novice teacher transitions from the undergraduate level into actual teaching practice. Continuing education and professional development programs could sequence situated learning activities in ways that coincide with the changing learning of novices at differing times during skill acquisition. For example, the tasks and activities could be sequenced along some continuum of complexity. One aspect of situated learning, as a part of the conceptual framework of this study, is that of creating a culture of expert practice among colleagues in which participants actively engage in discourse on problem solving, shared strategies, and essentially develop expertise through legitimate peripheral participation (Lave and Wenger, 1991).

Situating learning in authentic practice helps to develop confidence (Stasz, et al, 1993). Reflection enables teachers to compare their own problem-solving processes, through discourse or writing, with those of an expert in their environment. Ginsburg (1988) asserts that “critical reflection must involve practical experience as well as a knowledge base for thinking. Critical praxis is the process of combining critical thinking and critical practice” (p.5).

### Summary

The adult education literature is deficient in studies examining how teachers learn as they develop expertise in the field of teaching. The term “expert” as it refers to teachers is a hotly debated issue. What does expertise in teaching look like? How is expertise developed? Does the learning process change as teachers develop from novice to expert? As teachers develop professionally, are exposed to new knowledge, and incorporate that knowledge into practice, it is difficult to evaluate how and when expertise is acquired. Most measurement or evaluation of continuing education and staff development programs is done at the end of the program delivery not in the context of authentic practice. Is this a true measure that learning has taken place?

This study examines the transcribed oral interviews of fourteen teachers, seven novices and seven experts, reflecting upon their learning experiences and how this learning was integrated into their actual practice. Additionally, information regarding the support contributed toward the teachers’ development of professional expertise within their environment was considered. This study reviews the relevant literature and the methodology for this study and, in total, contains five chapters. Chapter One

serves as an introduction to the study. In Chapter Two, the literature review reveals the nature of existing theories of teacher expertise and examines situated learning.

Chapter Three delineates the methodology and procedures of the study along with the justification for the selection of this type of qualitative approach. The research questions and design, the population selection, the information collection procedure, the quality assurance process, and the data analysis method, including the development of concept map and matrices, are also discussed.

The findings of the study are depicted in Chapter Four. They are presented as the answers to the following research questions:

1. How do teaching professionals develop expertise in their practice?
2. What makes learning experiences meaningful in the context of practice?
3. How do teaching professionals connect day to day experiences with professional development?

A table and discussion of the demographic data from the population studied are included.

Chapter Five describes conclusions drawn from the study, implications, and includes the recommendations for future research. These issues were not anticipated or addressed in this study, but were revealed and could be addressed in future studies.

## CHAPTER TWO LITERATURE REVIEW

This study examined the meaning that novice and expert teachers make of their learning as it relates to the professional development of expertise and how these learning experiences are integrated into their actual practice. The posed research questions asked about how teachers develop expertise, what makes the learning meaningful, and how they integrate their new learning from professional development into their practice. The topics of literature that were examined guide and inform this study and make up the conceptual framework. The areas reviewed were comprised of the general theories of expertise and the area of situated learning theory. This review of the general theories of expertise consisted of the existing and relevant literature regarding the development of expertise across different domains. There is currently no consensus on a theory of expertise as it applies to teachers. The literature surrounding situated learning theory examined the works related to learning in the authentic environment through social interaction, communities of practice, and the use of tools pertinent within the environment of the teaching profession. The incorporation of critical reflection as a means of processing learning and transforming knowledge was innate to the methods used.

The literature reviewed is the most significant and meaningful to the research questions being asked and the design methods chosen to analyze the information and build the conceptual framework for the study. This literature informed the researcher and this study of the background and contemporary thinking in each of the areas of the

conceptual framework. The interconnectedness of the conceptual areas and how they help guide the study are explained. It is not the intent of this researcher to specify the detailed structure of each theory, but to associate and describe the relationships relevant to the research concepts under investigation.

### Expertise Development in Teachers

It is quite obvious from the literature available that at this time there is not an established, single definition, or accepted theory of the phenomenon on expertise in teaching. Most of the research on expertise has centered on other professions (Ericsson and Smith, 1991): medicine (Patel and Groen, 1991); chess (Charness, 1991); physics (Anzai, 1991); music (Sloboda, 1991); nurses, lawyers, and social workers (Daley, 1993; Daley and Carlsson, 2000). There are, however, reappearing themes emerging that indicate some consistency in the opinions regarding characteristics of expertise that apply to teachers.

#### Berliner's Five Stages of Development of Teaching Expertise

Probably the most often cited author on this topic is David Berliner. His paper, *In Pursuit of the Expert Pedagogue* (1986), presented as the Presidential Address at the 1986 annual meeting of the American Educational Research Association (AERA) outlines the values of studying expert teachers and comparing them with novices teachers. Among these reasons (pp. 5-8) are:

- To obtain fresh insights about the *internal* criteria that might be used for judging the enactment of a task itself (*italics in original*).
- To glean information about the routines, scripts, and schema used by experts.
- To obtain evidence that will influence the design of training programs for beginning teachers.
- To know where to begin in the instruction of novice teachers.

- To be provided with exemplary performances – richly detailed descriptions of instructional events that should be a part of teacher education programs.
- To promote thinking about expert teaching systems through research as has been done in the development of expert systems in the fields of medicine, chess, or physics.
- To examine the cooperating or supervising teacher's modeling, mentoring, coaching, etc. influence on the novice through their tacit knowledge within their actions.
- To examine the automaticity, routinization of procedures of experts.
- To influence current policy in states where teaching certificates are provided to individuals with no teaching experience and to influence policy about master teachers.
- To enhance and distinguish teaching expertise for the reason of professional pride.

Additionally, Berliner (1986) identifies problems inherent with studying the expertise of teachers as being numerous. Foremost among these are methodological problems associated with reading protocols and diagramming the propositional knowledge as is done in think-aloud and stimulated recall. Berliner calls to attention three other problems even more important than the methodological issues he mentions. First, there is the concern involved with finding criteria for defining expertise. Second, there is a confusing of terminology in experience and expertise (which he uses interchangeably). Third, there is a problem having to do with which knowledge systems should be studied in examining this type of expertise (p. 8). He elaborates on the choices of criteria for identification of expert teachers and reveals that the studies (completed at the University of Arizona) utilized reputational measures, classroom observation by three independent observers, and performance in laboratory tasks. Berliner (1988) has gone on to develop a theory of skill learning with regard to the development of expertise in teaching built upon the work of Dreyfus and Dreyfus (1986), and Benner (1982, 1984),

and Benner and Tanner (1987) and their work with pilots and nurses. This is to say that these authors share the belief that there are five stages described beginning with novice, advanced beginner, competent, proficient, and expert across these various professions. Berliner explains the differences between the novice and expert teacher in matters of:

- interpreting classroom phenomena;
- discerning the importance of events;
- using routines;
- predicting classroom phenomena;
- judging typical and atypical events;
- and evaluating performance: responsibility and emotions.

According to Berliner the stages are nonvariable and one must pass through them sequentially mastering each. The time that it might take for a teacher to progress through each stage varies with the individual. However, he hypothesizes that new teachers will display the qualities and live through experiencing the needs of the novice and advanced beginner during student teaching and the first year or two of full time teaching. They then achieve the abilities of an advanced beginner in the second or third year of teaching. He suggests that with talent and motivation, they will reach the competent level by the third or fourth year. Berliner (1988) says that all teachers may become competent and some will become proficient (around the fifth year), but only a subset of the proficient will become the expert few.

### Generally Identified Characteristics of Teaching Expertise

Research into the instructional skills of expert teachers is highly consistent with the data on expert problem solving tactics described in the literature of cognitive psychology (Gagne, 1985; Berliner, 1986). Yates and Yates (1990, p. 226) suggest that

as a skill is acquired, successful problem-solver abandons generalized strategies in favor of efficient domain-specific ones that arise from a substantial knowledge base. In the context of classroom instruction, the expert teacher has learned to go beyond generalized humanistic interpersonal skills and employs goal-oriented instructional procedures involving specific tactics such as task-focusing verbalization, monitoring of student comprehension, and the immediate remediation of difficulties in understanding (p. 226).

Brooks' and Hawke's (1985) research identified and confirmed several of the same indicators of teaching expertise that Berliner found. They summarize these as:

routine opening of class features visual scanning, a quick call to order using a business like tone of voice, a method of roll taking that is time efficient, an opening verbal sequence that includes behavioral and academic expectations, anticipate areas of confusion in explanations, and call for questions before signaling the beginning of the first activity (p. 5).

These observations and comparisons of experienced teachers to novices would suggest that the knowledge the more expert teachers possess has become almost second nature – they are often unaware of its presence. This is due to the more expert practitioners' automation of procedures (as described above by Brooks and Hawke, 1985). Schon (1987) calls this ability “knowing in action”. Bloom (1986) described the importance of this automaticity. He says that once it is developed (training and practice sometimes involving 25-50 hours per week) to a high level that it could be maintained with very little practice or thought – it provides great economy of effort. Berliner (1986) provides the suggestion that,

it is likely, therefore, that studies of how expert teachers perform and think about their performance of routinized procedures will be helpful in training cooperating teachers to articulate their knowledge in ways that might truly educate their apprentices (p. 7).

This would clearly suggest to teacher educators that there is a need for the use of critical reflection upon practice as a method for helping practitioners self evaluate to determine what particulars make up “knowing in action”.

Other research continues to add to the collection of knowledge regarding expertise development in teaching. Varrella (2000) describes the Iowa Scope, Sequence, and Coordination (SS and C) Project, a National Science Foundation-funded science teacher enhancement project conducted from 1990 to 1997. About 120 teachers participated in phase one (1990-1994), and about 175 teachers in phase two (1994-1997). The teachers taught in a range of school districts, from relatively large metropolitan districts to very small, rural ones. The expert teachers in the Iowa SS and C Project (an equal number of men and women) had several things in common. They all

- had seniority in education (at least ten years of experience for all but one individual);
- were active in local, state and national school enhancement and reform efforts;
- were committed to lifelong learning, having earned additional degrees and continuing education credits;
- showed noteworthy consistency between what they did in the classroom (as recorded by outside observers) and how they described their philosophy and strategies for teaching;
- happened to be middle school teachers (over half of the teachers involved in the project itself were high school teachers); and
- stated that they were positively affected by their involvement in the project as a participant, and particularly as a leader (p. 43).

Varrella goes on to say that

by the end of the project, some teachers had been identified in a sub-study as “experts”. (Officially, the project staff referred to them as “expert-like”, given the near impossibility of being truly expert in light of human nature as well as the many contemporary impediments to expert teaching—school violence, overcrowded classrooms, and the renewed emphasis on rote instruction). They were considered to be experts because they had developed a high level of expertise in constructivist teaching—a proficiency that was documented through teaching performance observations, interviews, and personal written reflections on teaching and on the nature of the relationship. The expert teachers were most articulate in explaining their attitudes, values, and beliefs about teaching and learning. They also demonstrated the ability and patience to help their peers explore student-centered instruction. They considered the textbook as a resource and consistently worked with their students and colleagues to arrive at materials and strategies for instruction and concept development, while remaining sensitive to district and national performance expectations (p. 43).

Kohn (1996), in his consideration of what indicates expertise in teaching, suggests that

everything from furniture to the teacher’s voice to the climate around the school grounds as either “good signs” or “possible reasons for concern”. The most expert teachers, he notes, tend to establish a “working with” (as opposed to controlling) tone and climate in the classroom. In these classrooms an observer will see students addressing each other and asking questions of other students at least as often as they ask questions of the teacher. The atmosphere in these classrooms is more casual than traditional, and the students are active in experiential inquiries and problem-solving events. There is a de-emphasis on facts and right answers, and the majority of exchanges include thinking, listening, and problem solving and a very obvious mutual respect between students and teacher (p. 55).

Berliner (1986) recommends that the examination of expert or experienced teaching behavior and teacher’s schemata “provides a place to start from in instructing novices ... a temporary scaffolding from which novices may learn to be more expert.” In his examination and comparison of experienced and novice teachers, he has formulated a strategy to determine the teacher behaviors that the research community has revealed as

important (1986, p. 5). He recommends that this information should influence the design of training programs for beginning teachers (p. 6). Berliner also suggests that

if we ever do establish genuine teacher education laboratories, the exemplary performance of expert pedagogues will provide extremely useful case material for analysis by novices. ... It might also pay us to act as if we could develop expert systems in other areas of instruction (p. 6).

Along these same lines, Duda and Shortliffe (1983) propose that by engaging in research of the type that has led to the building of expert systems in medicine, chess, or physics we could codify, formalize, and systematize the knowledge of expert teachers.

#### Turner-Bisset's Knowledge Bases for Developing Teaching Expertise

The identification of what is meant by teacher expertise has also caused controversy in Great Britain. Government legislation has produced teaching competencies, standards, and performance evaluation guidelines. Turner-Bisset (1999, p. 41) describes knowledge bases for the expert teacher in her presentation of a model for this purpose and identifies one of three trends that became apparent during the decade of the 1990s as:

the identification of the various competencies deemed necessary for teaching. This has been seen as a somewhat instrumentalist, if not reductive, approach to teacher education. The notion of competency-based teacher education can be traced to its origins in American research into education rooted in behavioural psychology. In this approach, at its most extreme, 'teachers are viewed as technicians who will simply apply what educational research has discovered' (Fish, 1989). The activity of teaching is seen as a collection of skills; it can be analysed, described and mastered. Later manifestations of this approach can be seen in the micro-teaching techniques and other attempts to analyse skills as the basis for training...

Turner-Bisset (1999, p. 46) goes on to say that the standards can be used as criteria for judging the abilities and attainment of beginning teachers, but that the model of teaching this list outlines is impoverished. She criticizes the list as being too limited, partial, vague, and ambiguous. Additionally, she remarks that standards are judged as being either present or absent with no continuum or gradations of ability. In her model of knowledge bases for teaching, Turner-Bisset recommends that “it be used as a map, or focus for analysis and reflection upon teaching, both by beginning teachers, and by those wishing to consider themselves expert teachers” (1999, p. 56). She used Shulman’s ‘Categories of the Knowledge Base’ (Shulman, 1986a, 1986b, 1987b) in combination with Dunne and Harvard’s ‘Dimensions of Teaching’ (1990) as analysis tools for teacher interviews and observations with the end resulting in the development of a more comprehensive model highlighted herein. Turner-Bisset developed this model from a two-year longitudinal study (1997). The areas she identified, explained, and related to teaching examples are described below.

- Subject Matter Knowledge which includes:

Substantive Knowledge; knowing the ‘that’, or the facts, and concepts of a discipline and the organizing frameworks to make sense of all the facts. Syntactic Knowledge; the ways that knowledge has been generated and established, the understanding of the facts through inquiry, interpretation, evaluation, and analysis. Beliefs about the subject; what is important and why, conceptions of what is important to know.

- Curriculum Knowledge (Schulman, 1986b, called these ‘tools of the trade’);

drawing from knowledge and curriculum resources to teach creatively with appropriate materials.

- General Pedagogical Knowledge (teaching strategies and methods); knowledge about teaching that is usually acquired from practice that includes principles and strategies of classroom management and organization that appear to transcend subject matter (Shulman, 1986b). This type of knowledge has proven difficult for teachers to describe (Gipps, 1992).
- Knowledge about Models/Theories of Teaching; knowledge or beliefs about teaching from the teacher's own school experience and developed through their practice.
- Knowledge of Learners that includes the following elements: Empirical; or social knowledge of the characteristics of children in a particular age range, how they behave, their interests, and the child-teacher relationship. Cognitive; knowledge of child development and that children acquire skills unaided by adults through the structuring of the learning environment, and contextual; the knowledge of a particular group of learners and how to adapt activities to their needs in order to facilitate learning.
- Knowledge of Self; scholars have been identifying this area as important over the past twenty years (e.g. Elbaz, 1983; Lampert, 1981; Kagan, 1992; Turner-Bisset, 1997).

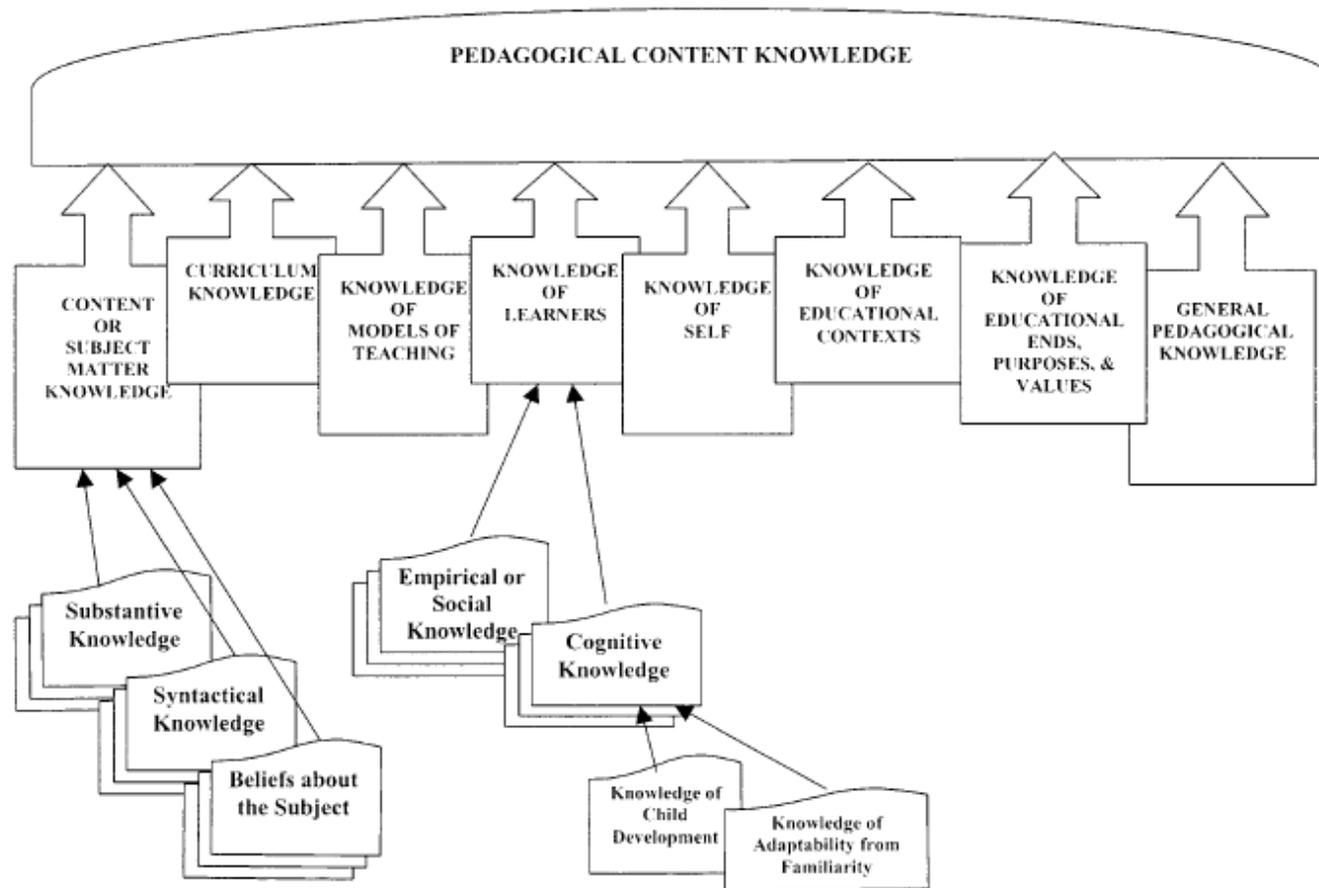
Knowledge of self has some effect on student teachers' ability to deliberate on their own practice. This ability to deliberate or reflect has in turn some impact on the student teachers' development. Thus, if teaching is a profession in which the self is a crucial element, which demands a heavy investment of the self and in which the self in evaluation and reflection plays an important part, knowledge of self is an important knowledge base and should be added to the categories of knowledge for teaching (Turner-Bisset, 1999).

- Knowledge of educational contexts incorporates a range of factors that affect development and classroom performance including the organization and structure of schools, classrooms, and all settings where learning takes place.
- Knowledge of Educational Ends, Purposes and Values; knowledge and awareness of how short term goals and objectives merge and lend themselves to the accomplishment of long term goals.
- Pedagogical Content Knowledge (expert performance, all the knowledge bases presented as an amalgam). This is the set that contains all other sets of knowledge. See Figure 1. Please note that for the purposes of this document, all figures (models), concept maps, and matrices were scanned at 300 X 300 dots per inch (dpi).

As described above, Turner-Bissett's (1999) model presents an alternative view or concept of pedagogical content knowledge that includes many aspects of teaching.

In summation, as this review of the literature specifically on the topic of the development of expertise as it relates to teaching illustrates, there is no consensus regarding a definition of expertise in teaching. However, as has been noted, there is promising research emerging that will help develop standards to guide the advancement of exemplary teaching. Continued study of novice and experienced teachers will provide more insight into the benchmarks and competencies that will be set as goals to which novices will aspire. The information provided in this study will contribute to the expansion and improvement of the best practices for continuing professional development.

Figure : Knowledge Bases for Developing Teaching Expertise (adapted from Turner-Bisset, 1999)



## Situated Learning as it Relates to Teacher Expertise

Lave and Wenger (1991) argue that learning as it normally occurs is a function of the activity, context, and culture in which it occurs. Two principles of situated learning as a general theory of knowledge include:

1. Knowledge needs to be presented in an authentic context, i.e., settings and applications that would normally involve that knowledge and;
2. Learning requires social interaction and collaboration.

There is an increasing body of literature, research, and professional activity in the area of teacher induction. It is this author's view that the effects of not having sufficiently funded or effectively designed and supported teacher induction programs are impacting retention of teachers across the county, and as a result, impacting student performance. As has been previously stated, novice teachers get discouraged and abandon their teaching careers at a high rate. It is the opinion of this author that novice teachers often acquire undesirable coping strategies to help them endure in the classroom and many of these practices may be barriers to developing effective teaching. After a period of practice, these coping mechanisms may become part of their routine style in the same way Bloom referred to the positive mechanisms of teaching becoming automatic (Bloom, 1986) due to the repeated practice that these behaviors receive.

### Barriers to Situated Learning

Teachers are typically isolated from one another for the majority of their working day and come together only periodically during structured staff meetings where there is a set agenda. Little time is available for teachers to meet and discuss, share stories, provide

support, and learn from each other's experiences. These activities are the key ingredients and elements necessary to situated learning as described by Lave and Wenger (1991). Staff development or continuing professional development sessions are ordinarily conducted outside of the authentic environment where teachers spend their time. They are often held in facilities where teachers from a number of locations come together for several hours of instruction on selected topics. Therefore, in lies the dilemma that is experienced in other professions as well, regarding the transfer of knowledge from the training environment to the actual workplace otherwise known as the "training performance gap".

#### Incorporating Communities of Practice

The expert teachers in the Iowa Scope, Sequence, and Coordination (SS&C) Project displayed teaching habits that demonstrated going beyond the use of textbooks to incorporate personalized, relevant, context-based instruction. Varrella (2000, p. 3) describes what they typically used as a science-technology-society (STS) paradigm or the study of science as it relates to everyday life experience. He lists the other observable habits these experts used as: efficient use of higher-order questioning strategies; use of wait time to evoke more thoughtful replies; use of varied, contextual assessments; and a commitment to their own understanding of the subject matter content and concepts. These habits were fostered through the creation of "learning communities" among the teacher cadres. Turner-Bisset (1999) refers to new teachers being influenced by the "communities of practice" found in the schools where they teach and how they must

adapt their subject knowledge to that particular school's scheme, how the school interprets the system's or state's standards, and even the instructional texts used.

Communities of practice are a significant component of situated learning theory. Etienne Wenger (1998, p. 2), the pioneer in the research of communities of practice, defines these communities by their characteristics along three dimensions:

- What it is about – its joint enterprise as understood and continually renegotiated by its members;
- How it functions – mutual engagement that binds members together into a social entity;
- What capability it has produced – the shared repertoire of communal resources (routines, sensibilities, artifacts, vocabulary, styles, etc.) that members have developed over time.

Wenger suggests that communities of practice develop around what matters to people and their practices reflect the members' understanding of what is important. These are not a new type of organizational unit and exist in various settings (e.g. schools, businesses, home), but rather a different slice on the organization's structure that emphasizes learning that people do together. He goes on to describe the communities of practice as having more flexible boundaries than the boundaries of a formal organizational unit. By this is meant that participants contribute to varying degrees and in varying ways. These communities structure an organization's learning potential in two ways: through the knowledge they develop at the core and through interactions at their boundaries. There is a periphery where newcomers may be 'brought into the fold' through 'legitimate peripheral participation' (Lave & Wenger, 1991). The permeability of this boundary creates opportunities for learning, not only for the core (insiders, experts) members, but for the newcomers who are then able to learn practice in concrete

terms, much the way apprenticeships operate. Wenger observes that, “like any asset, these communities can become a liabilities if their own expertise becomes insular” (p. 6).

Therefore, he recommends that:

it is important to pay as much attention to the boundaries of communities of practice as to their core, and to make sure that there is enough activity at these boundaries to renew learning. For while the core is the center of expertise, radically new insights often arise at the boundary between communities. Communities of practice truly become organizational assets when their core and their boundaries are active in complementary ways. Organizations must understand the processes by which these learning communities evolve and interact ... and recognize, support, and leverage them.

A community of practice may take a while to come into being, does not conform to an organizational timetable, and may exist or not after the initial team has disbanded as its life cycle is determined by the value that it provides to its members. These communities shape the identities of their members and as such are not just a set of relationships. They exist because they produce a shared practice as members engage in a collective learning process.

Communities of practice are of value to the functioning of any organization and become critical in those that recognize that knowledge is a vital asset. Wenger (1998) asserts that “knowledge is created, shared, organized, revised, and passed on within and among these communities. In a deep sense, it is by these communities that knowledge is owned in practice” (p. 5).

The dire and immediate need for expert teachers that this country is currently experiencing in order for students to be taught to perform at their best is the reason that the need for efficiency and effectiveness of continuing professional development and

induction programs for teachers is at a critical level. An awareness, system-wide, of the value that communities of practice can have in the induction process, mentoring, coaching, and bringing into the fold the novice teachers could have a huge impact on supporting and holding on to these newcomers in the field.

The issues faced by a beginning teacher have been listed as:

- A. First year teachers are expected on their first day to do essentially the same job as the 20-year veteran.
- B. Teachers are isolated from their peers for the majority of the workday, thus preventing the natural induction process.
- C. The literature cites a double barrier to assistance – novice teachers are reluctant to ask for help for fear of appearing incompetent; experienced teachers are reluctant to offer help for fear of appearing to interfere.
- D. Novice teachers frequently get extremely difficult teaching assignments that would challenge even the best veteran teachers. Naturally, this creates psychological as well as instructional problems. In Schoenfield's 1992 study of 255 newly appointed female teachers, those who worked in the most adverse school environments showed the most depressive symptoms even though there were no pre-employment differences on the depression scale. Women who obtained jobs in the best schools tended to show the fewest symptoms.  
([www.ncpublicschools.org/mentoring\\_novice\\_teachers/downloads/module1.pdf](http://www.ncpublicschools.org/mentoring_novice_teachers/downloads/module1.pdf) 2/01)

Talbert, McLaughlin, and Rowan (1993) studied factors that affect how teachers teach. They discovered that educational reformers know very little about the interdependent nature of the teaching environment, classroom practice, and student learning. They also suggest that:

teachers are insulated within their classrooms. That is not to say that teachers are totally isolated from their colleagues but rather that the sources of influence on them are less apparent than in other types of organizations. The diverse environmental or conditional effects intersecting with the work of teachers have been labeled 'context effects'.

These “effects” or factors are the teachers’ and administrators’ values, beliefs, norms, policies, structures, resources, and processes (Anderson et al. 1994; Bandura, 1977; Robinson et al. 1997). Of critical importance here is that these factors, in turn, impact what the students’ educational results will be.

### Incorporating Authentic Practice

What types of continuing education experiences could be offered that would align pre-service instruction and educational theory more closely with authentic (inservice) practice for teachers and meet the current administration’s requirement for “high-quality training that is grounded in scientific research”? A closer look at how novice and expert teachers integrate new learning into their everyday practice within the authentic work environment may contribute to the development of effective and supportive continuing education for all teachers. Suggestions have been made in existing research that teachers need consistent sets of experiences, more in tune with their needs, to acquire expertise. Eisenhart and Behm (1991), in a study sponsored by the National Science Foundation examined learning to teach and developing expertise, found that:

if novices can be exposed to a more explicit and consistent set of experiences, and one that is more sensitive with their needs as novices, we would expect them to leave the program with more confidence in the skills they have acquired and a clearer view of the identities they are striving for (p. 13).

According to Wilson (1993), authentic activity is best understood as ordinary cognitive practices that are situationally defined, tool dependent, and socially interactive. Authentic activity therefore requires that learning and knowing always be located in the actual circumstances of their creation and use, not the simulations artificially contrived in

schooling practices. Thus, learning and knowing are a process of enculturation, not simply a matter of acquisition. “Problem solving and human cognitive practices are carried out in conjunction with the setting, not simply as internalized mental processes” (p. 77).

Lanzilotti (1986) has noted an exception to the provision of professional continuing education by the university in the “practice integrated learning sequence” developed by Temple University Office of Continuing Medical Education. This is described as an office-based educational activity that incorporates the actual practice of medicine into a formal educational program, with primary focus on the quality of physicians’ practice behaviors. This description indicates that “practice integrated learning sequence” has strong elements of situated learning and the apprenticeship perspective. Pratt and Associates (1998) describe the key notions of this perspective as being based on the belief that expert knowledge is best learned in contexts of application and practice. They state that “to abstract the knowledge and wisdom from practice is to drain it of its most essential qualities” (p. 226).

Pratt and Associates (1998) go on to describe the focus on the dominant elements, within the general model, is on context, content, and teacher; knowledge, skill, and attitudes best learned using authentic tasks; impossible to separate content from the expert practitioner.

The literature suggests that continuing professional development of teachers could be enhanced and advanced by facilitating supportive training and learning experiences within the actual classroom. Putnam and Borko (2000) consider that the situative

approach has important implications for preservice and inservice teachers. They look at where to situate teachers' learning experiences, the nature of discourse communities for teaching and learning, and the importance of tools in teachers' work. Implications from teacher research suggest that:

both experienced and novice teachers often complain that learning experiences outside the classroom are too removed from the day-to-day work of teaching to have meaningful impact ... imply that most or all learning experiences for teachers should take place in actual classrooms (p.6).

This school of thought would coincide with the recommendations from the National Center for Research in Vocational Education (NCRVE, 1993) to situate learning in the context of authentic practice. Research and policy studies implicate that:

teacher training and staff development need change. Teachers are not currently trained to design and conduct classrooms based on a culture of authentic practice, which has been determined to enhance student learning and engagement (NCRVE at the University of California-Berkeley, 1993, p. xxii-xxiii).

Situated learning is a general theory of knowledge acquisition. It is a stance holding that inquiries into learning and cognition must take serious account of social interaction and physical activity (Brown, Collins, and Duguid, 1989). These authors also suggest that:

by ignoring the situated nature of cognition, education defeats its own goal of providing useable, robust knowledge. And conversely, we (they) argue that approaches such as cognitive apprenticeship that embed learning in activity and make deliberate use of social and physical context are more in line with the understanding of learning and cognition that is emerging from research (p. 100).

Brown, Collins, and Duguid (1989) also stress the need for a new epistemology for learning—one that emphasizes active perception over concepts and representation.

According to Lave (1988), learning in everyday practice is spread over, not divided among, mind, body, activity and culturally organized settings ... a nexus of relations between the mind at work and the world in which it works. Dewey held essentially the same belief. Roschelle (1995, p. 1) describes Dewey as critical of the concept that experience as personal, cognitive, and directed primarily from the world to the passive mind. He goes on to say that Dewey viewed experience as biological and social, as emerging through transactions between people and the physical and social world with which they engage. Dewey also broadly portrayed technology as any tool that serves the process of inquiry: hammers, symbols, languages, and ideas all possibly qualify as technologies (Hickman, 1990). For example, Friere, in his teaching of reading, used the language of the culture within which he was teaching as a tool to connect to the concepts. The learning that was accomplished was done in the authentic environment with genuine words the participants had previously experienced and were made their own through enculturated use.

### Critical Reflection

To facilitate and support the development and transformation of those who are starting out in the field of teaching, leaders in education can look to the practice of critical reflection. Mezirow (1981) describes his theory of critical reflection and awareness of why we attach the meaning we do to reality as being two of the most important distinguishing characteristics of adult learning. As novices begin their movement toward more expert practice, they move from a very focused task and rule oriented view of teaching to a view of seeing themselves as a contributor to the workings

of a broader entity – that of the profession. Critical reflection may be described as the type of thinking that serves to challenge notions of prior learning (van Halen-Faber, 1997). As teachers experience the daily routines and become more comfortable in their roles, using methods such as reflecting upon critical incidents, engaging in collegial discourse to dialogue about competing interpretations, examine evidence, discuss alternative points of view they begin to validate themselves in their practice through what is being communicated.

Mezirow (1997, p.9) states:

that the goal for adult learners is to become autonomous, responsible thinkers. Autonomy here refers to the understanding, skills, and disposition necessary to become critically reflective of one's own assumptions and to engage effectively in discourse to validate one's beliefs through the experiences of others who share universal values.

In considering critical reflection as the type of thinking that serves to challenge notions of prior learning, one can see the relevance that this practice would play in teacher development. Considered an important element in exemplary teaching, critical reflection occurs when patterns of a person's beliefs, goals, or expectations are put to the test by means of thoughtful questioning (van Halen-Faber, 1997). Reflective practice serves as a central link in the learning process. A critical examination of practice can have a significant impact upon development of expertise. Yost and Senter (2000) reveal that the end result of critical reflection for the individual is cognitive change.

John Dewey (1916) supported this type of reflective learning. He believed that the teacher quality most important in development of teachers empowered to improve upon conditions of schools was critical reflection. Critical reflection fosters a spirit of

inquiry that Dewey promoted. It assists adult learners in recognizing the connection between the nature of knowing and the nature of learning and that allows them to become researchers of their own learning. van Halen-Faber (1997) proposes that reflective experiences in the preservice level in teacher education are intended to bring about changes in the established beliefs held by student teachers. She suggests that intentionally thoughtful teachers consider themselves lifelong learners for whom teaching experiences and learning experiences are so tightly interwoven as to be one.

As humans we are constantly comparing and, in effect, evaluating. We ask ourselves the question, “Do the purposes, values, and beliefs that we hold as the pictures dear to us in our personal internal quality worlds match the circumstances in our lives?” Teachers are regularly confronted with situations involving students, parents, administration, and co-workers. When this happens, especially novice teachers, are somewhat shaken. When our habits of mind, as Mezirow (1981) refers to them, are confronted with opposing viewpoints, we experience disequilibrium or a tipping of an internal sense of balance. This disequilibrium is a signal that our frame of reference, or in some instances it may be a less closely held point of view, is being challenged. There is often more than one person involved and the intent is to come to an agreement or consensus for the meaning of an interpretation or the substantiation of a belief.

What we do everyday in learning to become students, teachers, or researchers, and all through our lives is to consciously or unconsciously adopt the behavior and belief systems of new social groups (1989, Brown, Collins, and Duguid, p. 102). It is this researcher’s view that there is emerging proof that it is critically important for a beginner

or novice teacher to have self-knowledge in order to cope effectively with these regular challenges to beliefs and values. By self-knowledge is meant: knowing one's values and beliefs and being in tune with one's feelings to the extent that this knowledge serves as the basic understanding for why certain choices are made in practice, especially when these choices are challenged in day to day practice. This is a critical type of knowledge to possess in order to survive the challenges by which the novices are confronted in the first few years of teaching.

William Glasser, in his book, *Choice Theory* (1998), and previously in his work *Control Theory* (1984), presented a model that gives understandable reasons for human behavior and also addresses a method for becoming aware of one's beliefs and values. This model has been implemented in the Quality Schools movement across the United States and Canada. This researcher will incorporate this model into the conceptual framework to connect much of what the literature reviewed herein has described as being deficient or is not even addressed in teacher preparation programs and in the school reform efforts. This choice theory connection is interwoven through expertise theory, situated learning theory, critical reflection, and will be briefly introduced here, but addressed again in chapter 5 implications.

Glasser's choice theory encompasses an explanation not only of why individuals behave as they do, but includes the feelings affecting a person's total behavior, self-image, and acceptance of responsibility for one's actions. The implementation of this theory into personal practice requires an individual to have an awareness of their needs, their behaviors utilized in getting these needs met, self reflection, and critical self

evaluation. Choice theory and Glasser's teachings relate closely to the acquisition of self knowledge that has been discussed previously in this review of the literature under the topic of knowledge bases for acquiring teacher expertise presented by Turner-Bisset (1999).

Mezirow states that the central goal of adult education is to develop autonomous responsible thinking. Our only other recourse is to turn to an authority or tradition to make a judgment for us. Mezirow (1997) explains Habermas' four types of problem solving and learning as being:

instrumental – learning to manipulate or control the environment or other people to enhance efficacy in improving performance; impressionistic – learning to enhance one's impression on others, to present oneself; normative – learning oriented to common values and a normative sense of entitlement (members of the group are entitled to expect certain behavior); or communicative – learning to understand the meaning of what is being communicated (p. 6).

He goes on to state that communicative learning involves understanding purposes, values, beliefs, and feelings and is less amenable to empirical tests. In communicative learning, it becomes essential for learners to become critically reflective of the assumptions underlying intentions, values, beliefs, and feelings (1997, p. 6).

Through discourse we are able to compare our beliefs with those of others. Where there is often a need to come to consensus, one may need to reorganize or restructure behavior to be in more effective control in the situation. Reflection and self-evaluation are part of the cycle through which individuals pass as they grow and develop expertise in their chosen field of practice. Through this developmental process, the

feelings of competence and confidence also grow as the level of expertise grows which allows for a more need fulfilling professional work experience.

Student teachers who view themselves as lifelong learners gradually move away from a repertoire of pedagogical techniques toward the thoughtfully responsive and reflective way of teaching that is generally found in more experienced teachers (Williams, 1992). van Halen-Faber found that critical reflection that leads to transformative action is a powerful confirmation of personal growth and development. In a preservice teacher education program, time devoted to value and encourage critical reflection as a way of linking theory and practice by student teachers is a means of assisting student teachers to move from a student teacher perspective to a beginning teacher perspective. She also suggests that those who are “guided by internal orientation show a strong preference for learning by reflection” (1997, p. 59). It is interesting to note that student teachers who are guided by internal direction throughout their preservice education often continue to develop as independent, self-motivated, and self-directed beginning teachers who use critical reflection as a means of looking back in order to look ahead.

#### The Link between Expertise Development and Situated Learning

The vast amount of knowledge that teachers acquire on the path to their development of expertise is not acquired in isolation. Much of the domain-specific knowledge that teachers accumulate through years of education and experience is interdependent upon and developed through discourse with colleagues and students within their community of practice. As Wilson (1993) so aptly stated, “problem solving

and human cognitive practices are carried out in conjunction with the setting, not simply as internalized mental processes”.

The literature reviewed in this chapter suggests that there is a relationship between situated learning and the development of expertise. Implicit in the knowledge bases suggested as being necessary for developing teaching expertise are skills that depend upon affiliation with others of the same profession, within the context of authentic practice, and contained within the structure of an educational organization including all the settings where learning takes place. Consideration of teaching practices situated in the authentic teaching environment involves rumination and collegial interaction to support effective change in practice toward the development of expertise. In this author’s view, situated learning contributes to the development of expertise and in the same vein, expertise development is dependent upon situated learning. The linkage between these two concepts undergirds and guides this study.

In order to elaborate upon and add to this knowledge base, this researcher will draw from the conceptual works of Berliner and Turner-Bisset (teacher expertise); Daley (novice and expert nurses, social workers, and lawyers learning processes); Glasser (choice theory); Lave (situated learning theory); and Wenger (situated learning theory and communities of practice). Each of these works has been described here in Chapter Two. This has been done with the goal of incorporating their concepts into the interpretation of the information gathered and formulating meanings derived inductively from the themes and categories through the analysis process to be described in further detail in Chapter Three.

## Summary

This literature review revealed the nature of existing theories of teacher expertise, examined situated learning theory, and incorporated a review of choice theory and critical reflection as sub components of these areas. These topics reviewed provide the conceptual framework for understanding the interrelated areas in this study. This framework, the direction of the study, and the interpretation of the findings are all linked to these concepts.

The literature review shows that there is a lack of consensus in the field of education surrounding the meaning of teacher expertise. Inconsistencies exist in the understanding of the topic of teacher expertise and there is lack in the depth of the models that have been developed to fully explain this phenomena. This review of the current literature in the field informed this researcher of the areas of deficiency on the topic of teacher expertise. More specifically and because of this review, attention was directed to the importance placed on the development of teachers' self-knowledge and the lack of attention to this development in the existing models of expertise. Therefore, the introduction of choice theory and how it is related to the need for teachers to develop self knowledge was felt, by this researcher, to be relevant in light of the lack of emphasis that existing models gave to this area.

Situated learning theory and its' subcomponents including communities of practice and authentic practice were also examined. The inclusion of critical reflection as an innate activity of any type of higher level learning was an additional topic of the literature reviewed. Due to the incorporation of critical reflection as the main activity in

the interview, it was relevant to review the literature regarding this topic in order for the reader to have a better understanding of the choices that this researcher made in including these as methods in the study.

## CHAPTER THREE METHODOLOGY

### Overview

This study examined the learning experiences of novice and expert teachers with the intended purpose of finding out what made those learning experiences meaningful to those teachers and how the experiences reflected upon were connected with the development of expertise in teaching practice.

This chapter will describe the methods and procedures of this study, including a detailed description of the qualitative research design, population selection, research questions, the information collection procedure, quality assurance process, and the data analysis method.

### Qualitative Research Perspective

A clear explanation of the perspective of this study and its design draws from the work of Merriam (1998) who enumerates the characteristics of qualitative research.

She states:

qualitative research is an umbrella concept covering several forms of inquiry that help us understand and explain the meaning of social phenomena with as little disruption of the natural setting as possible. The key philosophical assumption upon which all types of qualitative research are based is the view that reality is constructed by individuals interacting in their social worlds. *Qualitative researchers are interested understanding the meaning people have constructed*, that is, how they make sense of their world and the experiences they have in the world (all italics in original, p. 6). Qualitative research can reveal how all the parts work together to form a whole. The second characteristic of all forms of qualitative research is that *the researcher is the primary instrument for data collection and analysis*. Thirdly, qualitative research *involves fieldwork* (p. 7). The researcher must physically go to the people, setting, site, institution (the field) in order to observe behavior in its natural setting. Fourthly, qualitative research *primarily*

*employs an inductive research strategy.* That is, this type of research builds abstractions, concepts, hypotheses, or theories rather than tests existing theory. Often qualitative studies are undertaken because there is a lack of theory, or existing theory fails to adequately explain a phenomenon ... Qualitative researchers build toward theory from observations and intuitive understandings gained in the field. Qualitative research findings are in the form of themes, categories, typologies, concepts, and tentative hypotheses, even theory which have been inductively derived from the data (pgs. 7-8). Another key feature of all qualitative research focuses on process, meaning and understanding, *the product of a qualitative study is richly descriptive.* Words and pictures rather than numbers are used to convey what the researcher has learned about a phenomenon ... data in the form of participants' own words, direct citations from documents, excerpts of videotapes, and so on ... the design of a qualitative study is emergent and flexible, and responsive to changing conditions of the study in progress. Sample selection in qualitative research is usually (but not always) nonrandom, purposeful, and small. Finally, the investigator in qualitative research spends a substantial amount of time in the natural setting of the study, often in intense contact with the participants (p. 8).

To elaborate on the quote above and draw parallels to this study, one may look to each of the areas that Merriam addresses sequentially while also realizing that each of these areas are interwoven. This researcher was given access to the natural environment where the study participants conduct their teaching. Approximately twenty-five hours were spent in these school classrooms discussing the understanding that each of the teachers had developed of their learning, teaching, their social interactions within the organization, administration, with co-workers, and the part that staff development plays in the growth of their expertise. Conducting the research study in the actual surroundings of professional practice, and utilizing the researcher as the collector and analyzer of the information in the field, aligns with the description presented by Merriam.

In this qualitative inquiry, each of the aforementioned areas, staff development, organization, and teaching practice were investigated and the conceptual framework was

used as a guide to inform and direct the research. This framework helped reveal how each component fits together to form a whole explanation in the processes being examined. This research study is building upon the existing knowledge of the development of teaching expertise, in which there is presently neither consensus nor agreement upon in the field of education, nor is there sufficient theory to adequately explain the phenomenon of expertise development in teachers. In order to elaborate upon and add to this knowledge base, this researcher will draw from the conceptual works of Berliner and Turner-Bisset (teacher expertise); Daley (novice and expert nurses, social workers, and lawyers learning processes); Glasser (choice theory); Lave (situated learning theory); and Wenger (situated learning theory and communities of practice). Each of these works has been described in Chapter Two, with the goal of incorporating them into the interpretation of the information gathered and formulating meanings derived inductively from the themes, categories, and concepts through the analysis process to be described in further detail in this chapter.

The three research questions under investigation are answered in the course of these findings and are elaborated upon in narrative form by using direct quotes and the language of the participants. Concept maps, drawn while listening to the audiotaped interviews, depict a condensed version of the descriptions in the participants' own words and will further highlight the interrelatedness of the areas under investigation. By using concept maps, a form of visual conceptual representation, it will be possible to view the contents of each interview on one page. As Daley (1993) found in her use of concept maps, "this framework demonstrated the meaning of the interview ... The maps were

advantageous in that they supported the views of interpretivist philosophy and operationalized this philosophy in the data analysis component of research.” A qualitative analysis software program titled *Atlas.ti* was used as a tool to categorize and code the transcribed interviews. From the categorization, codes, and themes, an organizational structure was developed in the form of matrices, another type of visual structure, to concisely address the answers to the research questions.

To reiterate, the match between the purpose of this research, the conceptual framework, the population being studied, the method and design components, and the qualitative research perspective is a particularly appropriate fit as will be demonstrated in the depiction of the findings and interpretation of this study.

## Methods and Procedures

### Sampling Process and Population Description

The design of this study examines two groups of teachers: novice and expert. The participants were drawn from a purposive sample and were intentionally kept to a total number of fourteen participants. This purposive sampling increased the

scope or range of data exposed (random or representative sampling is likely to suppress more deviant cases) as well as the likelihood that the full array of multiple realities will be uncovered; and because purposive sampling can be pursued in ways that will maximize the investigator’s ability to devise grounded theory that take adequate account of local conditions, local mutual shapings, and local values ... (Lincoln and Guba, 1985, p. 40).

The Office of Research Compliance of North Carolina State University (NCSU) reviewed and approved the Institutional Review Board (IRB) narrative that was provided (Appendix J). After institution approval was given, access to the schools

employing the novice and expert teachers was obtained through a formal application process proposing the research to the Associate Superintendent of Research and Evaluation and her committee of six educators in a large urban school system in the southeastern United States. Through conversation with the Associate Superintendent and based on recommendations she made, contact was made with two of the principals of the high schools in the county. One of these schools was a traditional, or regular, secondary school and the other was a state supported charter high school. The fourteen subjects involved in this research study included both expert and novice teachers. Of these individuals, the seven novices were defined as those who were initially licensed, lateral entry, or certified teachers who were working in the classroom during their first years as novice teachers. The principals of the schools identified seven teachers as being expert using the criteria for selection of expert teacher participants (Appendix A). Explanation of the criteria was given orally and a written copy of the criteria was given to the administrator. An outline detailing the specifics of the study was covered during the initial meeting with the principals including the time commitment of approximately three and one half-hours required of the selected staff. It was explained that participation in the research was totally voluntary and anonymous. It was also explained that all of the teachers were expected to participate in an audio taped interview, to read the transcription of the interview in order to verify that it is a correct representation of what was discussed, possibly participate in a follow up interview if the researcher deemed it necessary, and to write a reflective narrative following guidelines presented for that activity. At this appointment, an overview of the study methodology,

the Principal Survey letter (Appendix B), and the written criteria used in determining teacher expertise (Appendix A) were reviewed. The only modification of note is related to the comment to the principal to choose only one expert teacher. It was deemed logistically appropriate to utilize the staff from two schools in the county from which the sample requirements of a total of fourteen were met.

### Design and Information Gathering

All of the subjects, both novice and expert, were recruited with the understanding that participation in the study was on a voluntary and confidential basis. It was explained orally and in writing (Appendix C) that an initial tape-recorded interview, potentially a follow up interview, reading the transcript of the interview with the purpose of verifying the correctness of it, and writing a reflective narrative were necessary parts of the participation. The participants were told that the total time commitment was approximately three and one half-hours. Each interviewee signed consent forms (Appendix D and Appendix E) during the first interview meeting acknowledging their understanding of what participation in the study involved. During that first interview meeting, participants were assigned a subject number known only to the researcher. The demographic information was gathered (Appendix G) and the researcher and participant both decided upon a mutually convenient time and location to conduct the taped interview. Most often the initial meeting continued with the interview. The logistics of reading and returning the transcribed interview were decided when the taping was completed. At the time the transcript was returned, the researcher orally explained the directions for the completion of the critical reflection narrative to

be written by the teacher. The researcher provided these directions and guidelines for the written narrative in writing (Appendix H).

In summary, the design of this study included a collection of information on how both novice and expert teachers reflect upon their staff development learning experiences, the organization in which they practice, and the incorporation of their learning into their practice. This information was collected through the use of the audiotaped, semi-structured interview process and through the use of written reflective narratives. Additional information was gathered through the use of a checklist providing demographic information.

### Pilot Study

This researcher conducted two pilot interviews for this study during the fall semester of 2000. Participants in this pilot study were volunteers enrolled in an adult education course at the researcher's university. Preliminary discussions with the instructor of the course regarding this pilot revealed that the critical reflection upon practice necessary for the interview supported several existing course objectives. Based on the transcription and analysis of these pilot interviews, a refinement of the interview questions included in Appendix F was in order. These pilot interviews helped determine the suitable ways to frame and order the questions asked in the actual interviews with the study participants. The pilot study simulated the actual procedures outlined in the study with regard to the interview process and all the associated consent forms. It did not include the reflective narrative activity.

### Interviews

Both categories of teacher participants took part in audio taped, semi-structured interviews at a location mutually decided upon by both the participant and the researcher that was neutral and private allowing for minimal or no interruption during the interview process (in all but three interviews, this location was the classroom). The interview questions are listed in Appendix F, titled Interview Guide, and were modified from those in Daley's research (1993, pp. 242-245). These questions focus on the following three areas: staff development; organizational structure; and teaching practice. The interview was planned to be semi-structured to allow the subject to participatively guide the process. This structure revealed learning, experiences, stories, and other important areas, the memory of which, at times, may have been triggered by the interview questions. To conclude the interview, the demographic checklist was completed. The audiotapes of the interviews were transcribed verbatim and these transcripts were submitted to the participants for verification of accuracy. All interview transcripts were reviewed and the participants confirmed via their signature the accuracy of the interview.

### Critical Reflection Narrative Writing

The teachers participated in a writing exercise involving critical reflection by submitting written narratives according to predetermined guidelines as described in Appendix H. The goal of this reflective writing process was to have the teachers think back over their classroom experience and discuss a learning event and the significance this event held for them. The initial intention of the inclusion of these written narratives

in this study was to serve a three-fold purpose. First, they were to provide the participants with an opportunity to critically reflect upon a teaching experience from which they learned and complete a type of journal writing regarding the meaning that this experience uncovered for them related to their work. Second, the narratives were to be used to in an attempt to differentiate between novice and expert teachers so that confirmation and comparisons could be made in the data collected from each group. Finally, these narratives were to provide information to verify and triangulate information collected in the interview process. After the transcribed interviews were returned to the researcher, the participants were provided with the guidelines to follow with regard to writing the critical reflection narrative. Thirteen of the fourteen narratives were written, at the participants' convenience, and returned to the researcher within a specified time. One participant explained that, due to demands upon his time beyond his control, he was unable to fulfill this part of the participation commitment.

After preliminary analysis of these narratives, this author found that they did not add significantly to the information that had been collected during the interview process. For the most part, the reflective narratives repeated, in writing, some of the exact discussion that was included in the interview. Therefore, the decision was made not to include in the data and analysis the information collected from the narratives.

### Data Analysis

A comparative analysis method was initially used to determine if follow up interviews were necessary, then the interviews were analyzed by group and type (novice interviews, expert interviews, novice concept maps, expert concept maps). The first

two interviews, from each of the two groups of teachers (for a total of four), were transcribed and analyzed to determine if the information being gathered was sufficient. This analysis was completed and necessary revisions made to the interview questions. After these minimal revisions, essentially adjusting the order of the interview questions, the remainder of the interviews was completed. As a consequence of the initial analysis, it was determined that no further interviews were necessary.

The analysis process followed the procedures that are described next. First, *Atlas.ti* qualitative analysis software was used as a tool to view the interview transcriptions, choose specific quotes, and develop and assign codes correlated with the interview and research questions. Second, listening to the audiotaped interviews and drawing linkages from each of the concepts to network with each sub topic resulted in the development of the concept maps. Third, focused networks were drawn from codes specified in *Atlas.ti* to depict quotations from the interviews that highlight the findings in relation to the questions asked. Fourth, these quotations were analyzed in the two groups of novice and expert to identify reiterative emerging themes for each group. Fifth, the matrices were constructed to organize the documentation that substantiates the answers to the research questions in a concise manner. Each matrix was built to analyze an individual research question by following a deliberately structured and concise process adapted from Daley's work (1993, pp. 296-359). These processes are depicted and labeled as Qualitative Data Analysis Documentation forms and precede each matrix in Appendix N. Finally, two peers, familiar and experienced with qualitative analysis

and the teaching profession, were selected to utilize the chart in Appendix I as an audit trail. The audit trail reports are also included as a part of Appendix I.

### Categorization and Coding

The categories and codes assigned to quotations related directly to the questions asked in the interviews that addressed the three topics of staff development, organization, and teaching practice. These three areas were also aligned with the three research questions being asked in the study. Appendix K contains these categories and codes and their correlation to each of the research questions. These codes were refined from their initial generation due to some overlap. The qualitative data analysis software program, *Atlas.ti*, was used as a tool to assist in this coding process and in developing focused networks from specific categories of each interview. These focused networks could be printed and made it possible to analyze themes from each interview and side by side between the fourteen interviews. After the interviews were coded according to emerging themes with the software, the concept maps were developed.

### Concept Maps

Novak (1998, p. 22) defines a concept as “a perceived regularity in events or objects, or records of events or objects, designated by a label.” “Propositions are two or more concept labels linked by words in a semantic unit” (Novak and Gowin, 1984, p. 17). Concept maps are graphic devices or visual tools in the form of diagrams that illustrate relationships among key ideas in text. They offer a method for representing knowledge in any subject matter domain. These maps have been used in a number of fields and for a variety of purposes (e.g. psychology, education, research, business,

marketing, etc. for brainstorming, note taking, project planning, consolidation of ideas, model making, consensus building, etc.). Concept mapping is a technique for externalizing concepts and propositions. The maps connect the mind's vision of complex information to a paper and pencil depiction. Essentially, key words are enclosed in a shape (circle, rectangle, square) and the lines connecting them help depict the relationships between concepts. Pictorial languages of thinking, such as concept mapping, enable complex patterns and ideas to be compressed into smaller areas than it would take to express the same in language, minimizing the amount of information to be digested or analyzed at one time. An analogy can be drawn between concept maps and what has been said about a photograph – 'a picture is worth a thousand words'.

Concept maps can be structured in a formal, hierarchical fashion in which the order of concepts flows from general to specific. Another way of structuring the concept map is to chain representative events in sequential order. Still another method, most often called a Venn diagram, utilizes overlapping circles to list commonalities in the area shared by the two circles.

According to Muhr (1997, p. 127), in contrast to linear, sequential representations (e.g., text), network representations (concept maps) of knowledge more closely the way human memory and thought is structured. Some cognitive load in handling complex relationships is reduced with the aid of spatial representation techniques and a right brain approach is added to analysis of a topic.

Concept maps constructed from interviews have been used to evaluate growth in children's understanding of scientific concepts at Cornell University (Novak and

Gowin, 1984, p. 138). Daley's (1993) research with nurses, and subsequently with lawyers and social workers, (2000) utilized concept mapping to represent the themes uncovered distinguishing the differences between novice and expert learning processes. By "graphically representing the concepts, themes, and linkages within a framework that focuses on retaining meaning" (Novak, 1998; Novak and Gowin, 1984) the interviews in this research study will be reduced, but not diluted for analysis.

In this study the utilization of concept maps as a tool to analyze the interviews and the reflective narratives written by participants is a replication of Daley's methods (1993, 1999, 2000). This concept mapping was completed while the researcher read the transcribed interview, made notations, and listened to the taped interview. By using concept maps, the contents of the lengthy transcriptions of actual interviews conducted with each of the participants may be viewed on one page in order to analyze this data for like and unlike themes and linkages.

Concept maps visually illustrate the themes within an interview or other language document. The central themes are depicted in rectangles with other information, derived from the interview in this case, radiating from the central themes. The lines also lead out from the central theme to sub themes that are also enclosed in rectangles and upon the lines are the propositions making the linkages between the concepts. In this way, a visual depiction condenses many topics of information from interviews into concise representations from which the general and detailed meaning can be gleaned much more quickly than by reading through extensive pages of transcripts, while at the same time the intent of the interview is retained. Using these

maps facilitated the process of inter-group and cross group analysis. Emerging patterns from the interviews became much more obvious. Manipulating the fourteen pages of concept map interviews was much more manageable than it would have been to manipulate the extensive number of pages of the transcribed interviews. These concept maps, one for each of the fourteen interviews, are included in Appendix M.

Daley (1993) used concept maps as a method of data analysis in her study of novice and expert nurses and again in her study of lawyers and social workers (2000). She suggested this methodology be developed to facilitate comparison of concept maps across groups (1993, p. 112). Daley enumerated the advantages and disadvantages she found through using concept maps (1993, pp. 192 –196) and the necessity of incorporating computerized coding of all data and a system of matrices. Each of the three matrices allowed for comparison, between the fourteen interviews, of the answers to each research question across groups. The matrices also returned the richness of the data that had been simplified in the concept maps.

These concept maps are drawn from reviewing the taped interview of each participant in order to produce a more inclusive map of higher validity as was suggested by Daley (1993). Listening to the taped interviews made it possible to understand the voice intonations in the messages that the participants were revealing in the interviews which were not evident from the written transcriptions. Most importantly, as Daley noted (1993, p. 99), developing these concept maps from the written transcripts would have been more cumbersome and held the potential of not accurately depicting the intended meaning of the interviewee. The use of concept maps allowed for the

reduction and depiction of the interview content, some of which exceeded 60

transcribed pages, down to just one page. Daley (1993, p. 192) notes:

Often the transcripts themselves did not portray the same meaning because the transcripts are more unidimensional. The transcripts represented the spoken language in a linear fashion, where the concept maps represented the interview data in an interconnected and hierarchical fashion. This representation was analogous to the way we think and to the way we actually discuss concepts in an interview format.

To elaborate upon this feature of concept maps, Novak & Gowin (1984, p. 19-20) state:

Concept maps are explicit, overt representation of concepts and propositions a person holds, they allow teachers and learners to exchange views on why a particular propositional linkage is good or valid, or to recognize missing linkages between concepts that suggest a need for new learning. Concept maps can be seen as tools for negotiation of shared meaning. This shared meaning is arrived at through dialog, exchange, sharing and sometimes compromise.

In considering the use of concept maps for the analysis of these interviews, the researcher took into consideration the disadvantages that Daley reported from her experiences as well as the advantages. This researcher would agree with the assertion that the major disadvantage is related to their complexity. The maps can be overwhelming at first glance to the unprepared reader and this complexity also contributes to the difficulty in using them to compare and contrast from one interview to the next. However, this researcher concludes that even with the existence of this disadvantage, concept maps are a less tedious method for analyzing the interviews than the actual transcripts would have been. One strategy this researcher employed to address an issue that was enlightened by Daley's peer reviewers (1993, p. 194) was to bold the topics of more importance in the maps to call attention to those areas when

readers review them. However, there is a need to further refine the utilization of maps in order to make this analysis method less complex and tedious. Since each map is the specific derivation from a unique interview, a template could not be developed that would apply to all interviews and this attribute made the task of converting the transcripts to concept maps very time consuming. There is also the inevitable decision to not include some data when the interviews are transferred to concept maps as is true with most any qualitative data analysis strategy.

Therefore, this researcher agrees with Daley (1993, p. 195) that it is essential that other methods of data analysis be paired with the use of the concept maps. To address this need, the decision was made to follow the Daley's recommendation to incorporate the computerized coding and categorization provided through *Atlas.ti* software and to develop the system of matrices to allow for comparison of data across groups.

### Matrices

Each of the three matrices was developed separately to analyze the three research questions focused upon in this study and to organize the documentation that substantiated these answers in a concise manner. To augment this analysis, each of the research questions was interpreted through a specific conceptual framework that has been described in the literature reviewed in Chapter Two. This analysis was done while reviewing the concept maps and each coded interview. The matrix, in contrast to the concept map, is associated with each research question, it is a visual depiction of the group qualitative data from all of the interviews that is relevant to that particular

question, for both of the participant groups, and interpreted through the lens of the associated conceptual framework. In this way, multiple types of data analysis strategies and illustrations were used as is suggested by Miles and Huberman (1984). The *Atlas.ti* software program helped with this task as it has the ability to create focused networks of each specific category code. Printouts of these focused networks allowed the researcher to diligently answer each of the three research questions from the data findings in the interviews while following the procedure outlined in each of Qualitative Data Analysis Documentation forms which is a structured process adapted from Daley's work (1993, pp. 296-359). By utilizing these focused networks, the interview transcripts, and reviewing the concept maps, direct quotes were extracted from the individual interviews and made it possible to determine themes in the two groups and to compare and contrast information within and across both the novice and expert groups. Each of the three matrices and the Qualitative Data Analysis Documentation forms associated with each question are included in Appendix N and are individually described in the following sections.

#### Matrix 1.

The contents of the first matrix examined the themes associated with the answer to the first research question: How do teaching professionals develop expertise in their practice? This matrix allows the novice and expert participant responses, from all fourteen interviews, to be displayed for analysis and comparison. The focus in developing this matrix was to identify examples of expertise development using the model described by Berliner, in his criteria for determining teaching expertise; and by

Turner-Bisset (1999) in her Knowledge Bases for Developing Teaching Expertise.

The Knowledge Bases for Developing Teaching Expertise benchmarks, or indicators of development of expertise, are described and outlined in Appendix O and depicted as a model in Figure 1.

In conjunction with the development of Matrix 1, each of the individual concept maps were reviewed to confirm the connections made through analysis of the information depicted in the matrix. The portrayal of the interview, by use of the matrix, focused on the specific research question being examined and the coded responses linked to that particular question. The matrix analysis task was described as being confirmatory. As each of the transcribed, coded interviews were reviewed anecdotal notes were made with reference to particular quotes within the interview and how each connected to the expertise markers. These quotes will be discussed in narrative form in the context of the findings in Chapter Four.

Table 1 is a segment of Matrix 1 and is included here to illustrate the connections between the interviews, themes, and markers. The table includes each concept map number, (for any cross-reference purpose) along with the role of the interviewee as novice or expert and the number of years of teaching experience; a brief version of each individual's interview response; the associated theme from the established codes; and the expertise marker or markers indicated.

**Table 1:** Excerpts from Matrix 1

Concept Map#/Role/ Years Experience	Interview Responses	Theme	Expertise Marker
#11/N/6 months	going to change regarding discipline; implement consequences, be consistent	learning related to work and experience	Knowledge of self

### Matrix 2.

The second matrix was developed to analyze the question: What makes learning experiences meaningful in the context of practice? The same diligent method that was described for Matrix 1 was also rigorously applied in the development of Matrix 2. In contrast to Matrix 1, Matrix 2 was exploratory in nature. The responses to this question were interpreted utilizing the concepts drawn from both critical reflection and choice theory: the works of both Mezirow (1981, 1997) and Glasser (1984, 1993, 1998); as they have been reviewed in Chapter Two. Again, anecdotal notes were made by the researcher in the review of the data that was excerpted from the interviews and included in the matrix. A narrative explanation in Chapter Four includes the relevant findings organized by the themes that became evident in this process.

Table 2 is a segment of Matrix 2 and is included here to illustrate the connections between the participants' learning, what made that learning meaningful, and the teaching practice behavior that was affected. This table also includes each concept map number for any cross-reference purpose.

**Table 2:** Excerpts from Matrix 2

<u>What was learned?</u>	<u>Connection that made meaningful</u>	<u>Teaching practice affected</u>
#2 how to build on prior knowledge in lesson	took risks to explore student participation	raised expectations of student performance

Matrix 3.

Finally, the third research question is the essence of Matrix 3 (Appendix N).

This question is: How do teaching professionals connect day to day experiences with professional development? This analysis was exploratory as it was utilizing situated learning theory, as an analytical viewpoint on learning or a way of understanding learning, to interpret the findings in relation to this last research question. Chapter Two includes a review of the literature on situated learning theory from the writings of Lave & Wenger (1991).

Table 3 is a segment of Matrix 3 and is included here as a representation of the type of information drawn from the participants' responses to the associated coded questions. This table also includes each concept map number, expert or novice category, and the years of experience for any cross-referencing purpose.

**Table 3:** Excerpts from Matrix 3

<u>Practice context/connection</u>	<u>Facilitated or inhibited by/ Social connection/Legitimate peripheral participation</u>	<u>Evidence/Research Comments</u>
#6/E/25 communication in dept.	isolation	pretty much islands in ourselves
#5/E/29 realistic activities	used tools to learn, discuss	utilized process

### Quality Assurance

As a way of assuring the quality of the interviews and the trustworthiness of the information collected, several quality control methods were used in the study. As a way of assuring that the correct meaning was derived from the transcribed interviews, the interviews were redistributed to the participants for verification of accuracy of what was said during the interview. The confirmation of accuracy through the member checks of the transcribed interviews allowed this researcher to develop the concept maps after being assured that what was stated in the taped interview was an accurate representation and while listening to the taped interviews again. As stated earlier, to maximize the accuracy in interpretation, this researcher utilized the advice given by Barbara Daley concerning her research experience with this data collection method and also listened to the taped interviews while concurrently drawing the concept maps. This process allowed for concept maps that are more inclusive and demonstrate a higher validity when they are developed by listening to the tape-recorded interview rather than from just reading the transcript. By actually listening to the tape recording it was possible to understand the feelings, emotions, and subtle messages that the participants displayed in the interviews (Daley, 1993, p. 99).

Additionally, as an assurance to increase trustworthiness, there was a peer audit conducted. This audit addressed the accuracy of the transcribed interviews along with the verification of methods used and the findings reported. Two individuals familiar with both qualitative and quantitative research processes and the sample population conducted the audit. Each auditor had professional experience within the field of

education and had completed their own dissertation in pursuit of their terminal degree (Ed. D.). Each audit reflects the guidelines established in Appendix I that assisted the researcher in the verification of valid theme coding, categories, and eventually matrices. This effort was made to assure that the findings were communicated in a clear and understandable format. This audit provided feedback, also included in Appendix I, about the data collection methods and confirmed the interpretation of the data.

The activity of recursive reflection, revisiting the interviews (both transcribed and audio taped), and creating and objectively verifying the boundaries associated with the coding process through the peer audit also enhanced the validity of this research.

#### Comparability and Translatability

This study, in essence, replicated the research completed by Daley (1999) in her work with novice and expert nurses. The comparability and translatability of the findings, from the populations studied by Daley with the population of novice and expert teachers, may add to the results of Daley's and others' previous research with novice and expert populations (Berliner, 1988; Dreyfus & Dreyfus, 1986; Benner, 1982, 1984; Benner and Tanner, 1987). By adding to the existing body of knowledge on how professionals develop through their learning, more information for interpretation will exist. Potentially, over a period of generative studies, credibility can be attributed to the generalization of research findings and the construction of contributing assertions.

According to LeCompte and Preissle (1993),

comparability and translatability contribute to effective generalization regardless of research design; however, they are of paramount importance to the legitimacy of ethnographic research. Establishing comparability requires that, to the extent possible, the ethnographer use

standard and nonidiosyncratic terminology and analytic frames. Furthermore, the characteristics of the group studied or constructs generated must be delineated so clearly that they can serve as a basis for comparison with other like and unlike groups ... Translatability assumes that research methods, analytic categories, and characteristics of phenomena and groups are identified so explicitly that comparisons can be conducted confidently and used meaningfully across groups and disciplines. Assuring comparability and translatability provides the foundation on which comparisons are made. Both function for ethnographers as an analog to the goals of more closely controlled research: generalizability of research findings and causal statements (p. 47).

Additionally, LeCompte and Preissle state that:

for comparative purposes, ethnographers may choose phenomena to study because they are similar or because they differ systematically along particular dimensions. In either case, the intention is the generation, clarification, refinement, and validation of constructs. This method can be used to compare phenomena identified in a single research site ... or it can be used by researcher engaged in ethnographic study of special phenomena in a number of research sites (p. 47).

In summary, to minimize the impact of initial impressions, to correct biases, to enhance the scope, density, and clarity of constructs that emerged through the process of gathering the data, triangulation of data, the collection and analysis; multiple methods of information gathering and analysis were utilized. These data collection methods consist of the principal's referral, fourteen audio taped interviews, and the demographic information. As additional checks to confirm the accuracy of interpretation of the information collected, the transcriptions of the audio taped interviews were given back to the participants for their correctness to be confirmed. Upon confirmation of accuracy, the concept maps were developed while the researcher listened to the tapes. A peer review in the form of an audit was used. Finally, the development of the matrices to guide the in-depth analysis of the answers to each of the

research questions from the interviews, followed an analytical procedure adapted from Daley's research.

In the view of this author, the iterative process through which the information was gathered and analyzed, in combination with the different understandings which were drawn from it, offer an opportunity for richer insight into the phenomenon of novice and expert teachers' learning. This information, in turn, builds upon the existing knowledge base created through the examination and investigation of the characteristics of how novice and experts in other professional fields incorporate their learning into their practice.

### Presentation of Findings

The findings from this research study are presented in Chapter Four as answers to the research questions:

1. How do teaching professionals develop expertise in their practice?
2. What makes learning experiences meaningful in the context of practice?
3. How do teaching professionals connect day to day experiences with professional development?

### Personal Bias Statement and Background of the Researcher

Two of the foundation elements of the conceptual framework: situated learning, especially through peripheral participation in a community of professional practice and support; and an emphasis upon self-knowledge through critical reflection are areas that the researcher views should be developed and supported to improve opportunities for novice teachers to develop expertise. Lave and Wenger (1991) argue that learning as it

normally occurs is a function of the activity, context, and culture in which it occurs.

Two principles of situated learning as a general theory of knowledge include:

1. Knowledge needs to be presented in an authentic context, i.e., settings and applications that would normally involve that knowledge and;
2. Learning requires social interaction and collaboration.

Information acquired from interviews with adult learners indicate that some of the needs of adult learners are: social networks as part of the learning experience; respect and nurturing environment; accurate, immediate, constructive, and encouraging feedback; and to build on past experiences. Adult learners have specific needs for making learning relevant. Additionally, these learners need to integrate new information into their prior knowledge. Teachers, whether they are novice or expert, are adult learners. Therefore, adult learning theories should apply when planning programs for continuing education of teachers, but are seldom considered as is evidenced by the way staff development experiences are offered and connected (or not) to practice.

Teachers, by virtue of the nature of the classrooms in which they work, are isolated from colleagues during their workday. This minimizes the time that is available to build the supportive community of professionals that help to shore up a novice teacher during the first year of teaching. Effort must be put into planning this participation as a goal for the novice teacher. Feedback given through interactive staff meetings or a formal or informal mentor should be an established routine for a novice. Critical reflection narratives centered on day to day situations experienced in teaching

and the school environment are a method utilized to encourage self-reflection, evaluation, and problem solving about practice.

This author entered the teaching profession after completing a master's level certification in Special Education. The year that was spent in full time study as a research fellow was very intense and included immersion in the culture of Special Education in a large urban school system, considered by many, to be on the cutting edge of programming for special population students. The University affiliation allowed participation in two school internships that lasted the entire two semesters, three days per week for the regular school day, in two different school settings. This internship allowed the master's level student participants in the program an insider's view of the particular school and classroom environments on the continuum of services provided and exposure to the majority of services accessible by students. From this experience and the consequent employment for five years at one of these placement schools, this author was supported in learning, exposed to increasingly more responsibility, and afforded the consistent opportunity to engage in professional dialogue with colleagues on a daily basis. Additionally, this author was allowed to engage in continuing professional development through staff development workshops and continuing education at the University. Through the richness of these experiences and being given the opportunity to grow professionally, the development of expertise was facilitated. Now, reflecting upon that initial classroom experience, the feeling that, if engaged in daily teaching of students, the teaching now provided to them would be far better than

what those students in the first class tolerated by virtue of development of the critical teaching skills over time.

The learning process that this author experienced can be described as situated in the authentic environment of teaching to a large degree, but could have been more so through the conscience efforts of a coordination of the mentoring, organization, and staff development. In the first year of teaching experience this author was provided with a mentor teacher with whom regularly weekly meetings and reflective writing on practice were scheduled. The atmosphere promoted at the first (employment) placement school was one of professionalism and collegiality. Almost daily and regular meetings with all staff allowed discussion of programming and student issues and provided a forum for professional dialogue and discourse. This allowed this author, as the novice teacher, to gain from exposure to the culture and language of the profession, effectively being drawn into the folds of this community of practice. Reflection upon practice was encouraged through use of writing evaluative assessments of student plans that were implemented and refined.

Additionally, several years later as a teacher participant in the school district's mentor teacher certification process, this author was provided with a mentee. To perpetuate the support of novice teachers in the school system, completion of the full year of mentor training resulted in being able to participate in the process from the vantage point of both roles; that of a mentee and a mentor.

As the reader can see, this author has been a participant of an educational environment, which either knowingly or unknowingly contained the key concepts of

this research study: situated learning in authentic work environment; knowledge construction in context; professional dialogue and discourse; and critical reflection. In addition to this supportive learning environment, the opportunity was given to participate extensively in the acquisition of information about Glasser's choice theory. This author admits, as has been realized in discussions with many other educators, the learning and applying in practice Glasser's concepts was a turning point as an educator and as an individual. The exposure to choice theory and the self knowledge (that as a result developed) clarified values and beliefs as a practicing teacher and enabled the conscious evolution into more of the type of teacher that this author had wanted to be through solidification of a teaching philosophy.

Having expressed all the views above, this author does not equivocate when it comes to acknowledging strong opinions held about beliefs regarding teacher training, continuing education, and support to empower novice teachers to develop expertise. There is a keen awareness of the need, as a qualitative researcher, to allow the participants in the study to uncover their own personal truths regarding the questions asked and, as a precautionary measure, specific checks to assure objectivity have been built into the study.

This author believes that the information exists to help uncover the more specific description about the development of teacher expertise and to come to agreement as to what it looks like and how to define the phenomena. It is also a belief that there is a need for a clearer understanding of specifically what teachers and administrators, are trying to attain in order to provide the opportunities and the support

necessary in the field for those teachers entering the profession of education. There is a need to help them develop their self-knowledge, confidence, and competence in practice so that they will view education as a need fulfilling vocation and stay with it long enough to develop expertise.

In summation, the following analogy by Popper cited by Phillips in Eisner and Peshkin (1990, p. 22) seems quite appropriate to this topic and the reader may draw an analogy with regard to how it relates to the goal of developing teacher expertise:

The status of truth in the objective sense, as correspondence to the facts, and its role as a regulative principle, may be compared to that of a mountain peak, which is permanently, or almost permanently, wrapped in clouds. The climber may not merely have difficulties in getting there – he may be unable to distinguish, in the clouds, between main summit and some subsidiary peak. Yet this does not affect the objective existence of the summit ... The very idea of error, or of doubt ... implies the idea of an objective truth, which we may fail to reach (p. 226).

And continuing on (Phillips) comments:

It makes little sense to search for a summit if you do not believe that a summit exists; and it makes little sense to try to understand some situation if you believe that any story about that situation is as good as any other (p. 22).

### Summary

In this chapter, the methodology and procedures chosen for this study were described in detail. An explanation of the qualitative research perspective and why it was chosen as appropriate for this study was given. Additionally, the sampling process, population and description, design and information gathering, analysis procedures, quality assurance, comparability and translatability, and how the presentation of findings will be addressed were discussed. Lastly, the researcher's personal bias

statement was included. In Chapter Four, the findings and their interpretation are presented.

## CHAPTER FOUR FINDINGS

The purpose of this study was to examine teachers' learning experiences, from the perspective of initially certified or novice teachers and from the perspective of expert or master teachers, and how these learning experiences are integrated into the teachers' actual practices. The findings are presented in this chapter as answers to the following research questions:

1. How do teaching professionals develop expertise in their practice?
2. What makes learning experiences meaningful in the context of practice?
3. How do teaching professionals connect day to day experiences with professional development?

What follows is an overview of the demographics of the study sample and the results of the study from the research questions collected in the interview process.

### Study Sample Demographics

The number of expert teachers included in this study is seven and the number of novice teachers is seven. All 14 individuals participating in the study work with a high school student population in the ninth through 12th grades with four participating teachers working at a Charter Secondary School and 10 in a Regular Secondary School. There were four who work within a school population of 101-800 students and 10 who work in a school with a population of students greater than 801.

The certification area of four of the teachers is Special Education. There are seven participating teachers certified in various Secondary level content area subjects (e.g. Social Studies, Math, Science, and Foreign Language). Out of these seven

certified teachers, four hold advanced degrees. Of these four: one teacher had been employed as a tenured professor at a Research One level university supervising undergraduate and graduate students in teacher preparation programs; one held licensing as a School Psychologist; one had received School Administration certification; and the remaining one held a Master's degree in a field other than education. Additionally, and not included in the five participants described above, one of the remaining 10 was a National Board Certified Teacher. Out of the 14 participant teachers, three were becoming certified through the Lateral Entry process and were in varying stages of licensure with one teacher of those three also holding an advanced degree outside the field of education.

The range of the years of experience in this group varied from less than a year to over 29 years. One teacher had less than a year experience, five teachers had one to three years, two had six to 10 years, and six had over 10 years experience.

Regarding years employed at their present school placement, four had been at their school for less than a year, seven had been there from one to three years, one had been there for six to 10 years, and two for over 10 years.

The participants include three males and 11 females. The age range of the group spans 21 to 60 years. Table 4 depicts the age span distribution.

**Table 4:** Novice and expert teachers sample population demographics by category and descriptor

Category	Descriptor
Type of School -----	Regular High School = 10      Charter High School = 4
School Population ----	101-800 Students = 4      801 or more Students = 10
Certification Area -----	Secondary = 7 Special = 4 Lateral Entry = 3
Years of Experience ---	Less than a year = 1 1 to 3 years = 5 4 to 5 years = 0 6 to 10 years = 2 More than 10 years = 6
Years at This School --	Less than a year = 4 1 to 3 years = 7 4 to 5 years = 0 6 to 10 years = 1 More than 10 years = 2
Teacher's Age -----	21 to 30 years = 4 31 to 40 years = 5 41 to 60 years = 5

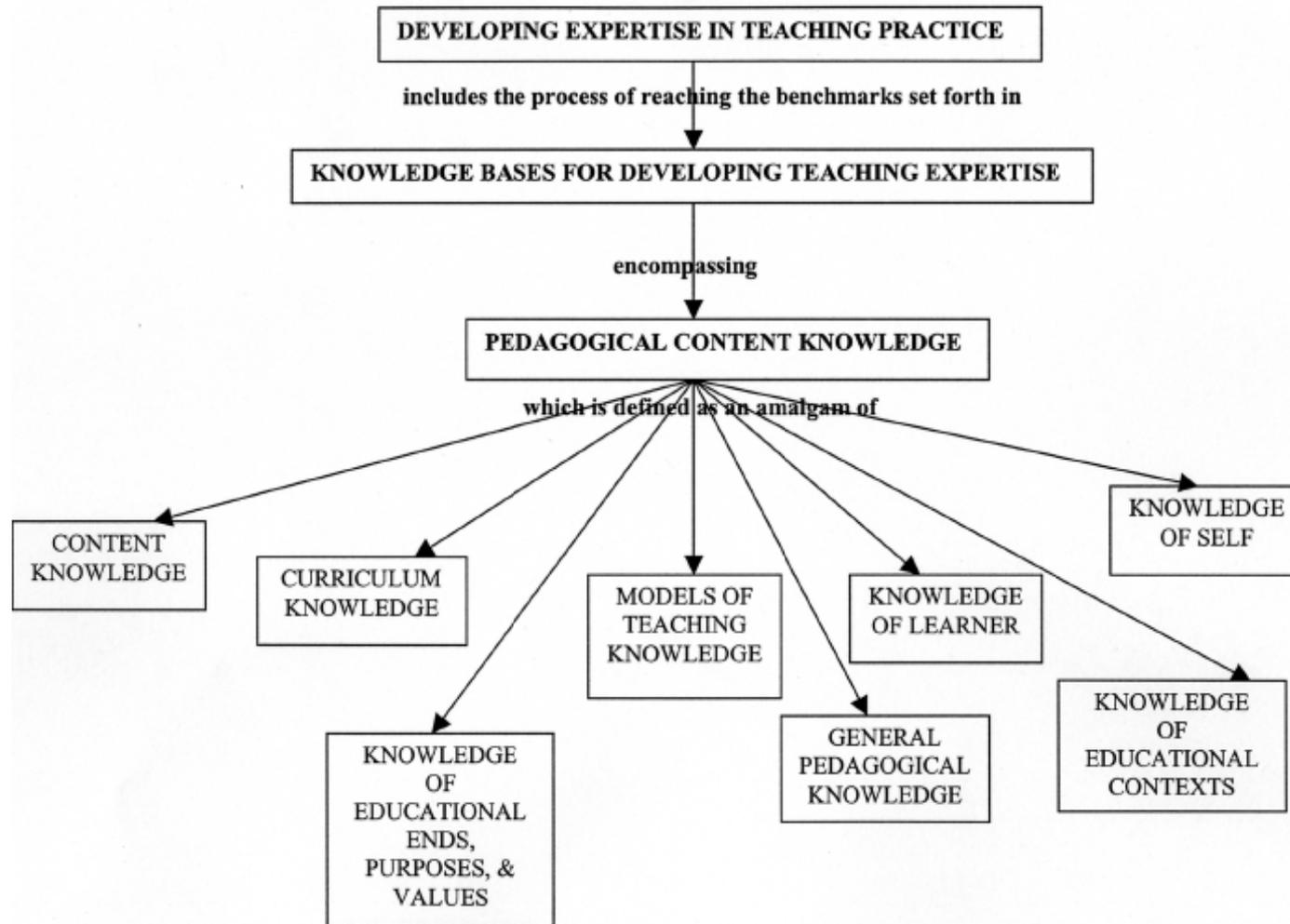
The 14 teachers in the population studied represented diversity in school settings, content and certification areas, range of experience, time periods at their schools, and age. They had all attended at least one staff development presentation in the past year that lasted four hours or more.

### How do Teaching Professionals Develop Expertise in their Practice?

The information collected in this study supports Berliner's (1988) theory of the development of teacher expertise with regard to his overall view that teachers develop expertise as they pass through stages in a somewhat sequential manner. The length of these stages not only depends upon the individual, but upon the quality of their experiences, the professional development or continuing education that they receive, the support from the organization in which they work, collegial support, and their ability to integrate prior learning with the new learning into their practice. This study utilized Berliner's guidelines for distinguishing between novice and expert teachers in an effort to establish a consistent means by which expert teachers were selected by their principals to participate in this study. However, to thoroughly analyze the data collected, this study needed a more clearly defined set of descriptions in order to identify the characteristics teachers demonstrate at various levels in the process of developing expertise. For that reason, this researcher utilized the work of Turner-Bisset (1999) who sets forth a model entitled "Knowledge Bases for Developing Teaching Expertise". This model clearly delineates benchmarks, or characteristic descriptions (Appendix O), that this researcher was able to use to analyze the development of expertise indicated in the interview question responses from the novice and expert teachers. The interview excerpts are tied to the coded markers associated with the specific research question, discussed here, regarding how teachers develop expertise in their practice. The teachers' answers to the interview questions associated with research question one (How do teaching professionals develop expertise in their

practice?), will be discussed in this chapter organized under the topic of each separate knowledge base included in Turner-Bisset's model. These findings were extracted from the interviews through the development of Matrix 1 (Appendix N, excerpts from all fourteen interviews associated with this specific research question) and cross referenced with the concept maps (Appendix M, depicting each of the fourteen interviews) for confirmability. Figure 2 combines the knowledge base model and the findings from Matrix 1 and shows the outline for presenting the findings to the first research question. Please note that for the purposes of this document, all figures (models), concept maps, and matrices were scanned at 300 X 300 dots per inch (dpi).

**Figure 2: How do teaching professionals develop expertise in their practice?**



### Knowledge Bases for Developing Teaching Expertise

The indicators used to identify expertise in teaching must be understood in order to utilize this model to answer the question of how teaching professionals develop expertise in practice. The collection of knowledge bases that are to be attained and demonstrated by a teacher to identify that teacher as being an expert, is a complex combination of attitudes, beliefs, and skills that define, not only how a teacher practices, but how that teacher thinks about his or her practice. These knowledge bases are not acquired in a particular order or along a specific timeline. They build upon each other and although they can be identified and described separately, they are intertwined -- interdependent while being independent. Turner-Bisset describes pedagogical content knowledge as an amalgam of content and general pedagogical knowledge, and in addition, she suggests eight other areas that contribute to the development of teaching expertise.

#### General Pedagogical Knowledge

Teachers draw from their own personal practice experience as time spent in classrooms in the role of a student, in addition to their formal training and preparation for certification, and from their role as the teacher. Turner-Bissett defines general pedagogical knowledge as that knowledge about teaching that is gained through the teacher's own actual experience or personal practice of teaching. Suffice it to say that few novices display this knowledge base by virtue of their lack of time spent in the teaching role. Many years of modeling provided by the teachers who taught them in school has filled the novice with frames of reference as to how a teacher practices,

knowledge about particular content areas (what is important to know), and their personal beliefs about teaching. As teachers are inducted into their teaching practice within a school and the organizational structure of the school within a school system, they are exposed to the diversity of beliefs of their colleagues, provided with continuing professional development, and experience daily classroom life with the students that they teach. These influences impact upon their development as a teacher, and in turn, upon their general pedagogical knowledge. It is often difficult for a teacher to ascertain where, when, or how that particular knowledge was attained. This teacher had extensive exposure to staff development and teaching practices and later commented that “everything seemed to blend together after a while”. When she was asked what she had learned from a staff development session that she attended, she demonstrated general pedagogical knowledge in her reply:

well, I think that, I'm not so sure... I have to say, I'm an old dog, at this trick. I'm not sure there are an awful lot of new things that are out there, that I haven't already used one hundred thousand times. So I don't mean to sound like I'm not going to grow anymore, because there is always room to grow, but I have to say that, I already knew everything that she had said, and what she was saying. Like I said, what I learned from that was how to teach it to somebody else. (#6/E/25)

In her dual role of teacher and coordinator of initially licensed teachers, she was looking for ways to help her novice colleagues in a mentoring capacity. From the perspective of a coordinator of new teachers, she offered the following when asked if she could have done anything with the information from the staff development what would she have done.

I think it needs to be simplified a little bit more for teachers, and I think we need to have much more extensive training ... you know, there's a lot

of good things about total quality, but I don't like that we put all of our eggs in one baskets because I don't think... it didn't work for businesses back in the 80's, and I'm not sure how it can possibly, anybody can think it's going to work for schools in 2000. So, that, I'm bothered by, I'm bothered by education is always 10 years behind everybody else. And they act like they have discovered something totally brand new. And it doesn't work totally. Even the businesses have found out. You can not have a successful business with just total quality tools you have to have other things. So I would like to see a move more towards, that, and then Glasser, and all the other, where you do some of that...so if I had to do it, I would do it, more limited, and structured. (#6/E/25)

Having experienced teaching on a daily basis for a number of years gives the expert teacher the ability to view staff development from the vantage point of one who is knowledgeable enough to know what will fit with his or her own teaching style. The ability to determine what will work within one's own classroom and be able to take the information or examples given and use them, discard them, or adapt them. This flexibility comes from time spent in teaching practice and was not evidenced in the novices' comments (as will be highlighted). These comments also demonstrate that general pedagogical knowledge is intertwined with knowledge of self. Two examples cited here come from two different expert teacher sources when asked if they were able to do what they wanted with the information from the staff development. One replied

I guess what I'm saying is that I liked the meat of what she was saying but I do think that learning and teaching is a collaborative effort, and unless I get those kids on board with me, I am swimming up the stream. I just do it a whole lot more efficiently and quickly than she does it, and it works for me. Whereas her style probably wouldn't work for me. (#6/E/25)

The other teacher's comments illustrate a knowledge of self and the ability to choose what will work within the comfort level of one's own practice which must be based upon general pedagogical knowledge from actual time spent teaching.

I don't think that there was anything that we did that I was not able to use in the classroom. It's just like with any other method, you have to be comfortable with what you are doing. And I'm not more, I guess I'm more inclined to try to keep things, in, for everybody to participate in. I, sometimes the small groups, and trying to keep all the groups going, that sometimes would give me trouble. So I probably don't do as much, working in cooperative learning groups, because it ended up that one person was doing all the work. And, I was more concerned with everybody getting, and I can do that better, when I'm doing the entire class. So usually, instead of doing small groups, do it as a class. (#5/E/29)

When asked of a specific instance when staff development ideas were not used the expert teacher shared that

you try to have problems on the board, and as the kids come into the classroom, they go up and work problems on the board. And I've never had, the students that would take the initiative to go ahead and do it, so it was always a challenge to try and get people up to the board, to get those problems worked, so consequently I just more or less, left that element out, so I guess if there was one weak part of the program, that's the part that I really didn't care for the most. (#5/E/29)

Novice teachers, on the other hand, show the inability to synthesize information presented that is not concrete, how to, step by step format, customized for their needs.

When asked what prevented her from using the staff development information, this novice explained

I would say that they presented a lot of material, but it was just kind of raw material that they gave to us, they didn't tell us how we could apply it to our classroom. it was just kind of... it wasn't specifically for education, it's for any profession, how you need to get everybody working together to achieve something. You have to get everyone involved from the parents, to the administration, to the teachers, just everyone, just getting everyone involved towards that one goal. They didn't really tell us how to do that, it just seemed irrelevant to anything that we were doing. Okay, great, we understand that everyone has to get involved in order to have successful students, but where do we start? What do we do first? They never really told us that, it was so dry. (#11/N/6mon.)

This novice's perception of the information presented and how she could use it is in stark contrast to the active engagement during the same workshop of an expert teacher who was busy thinking of ways to incorporate the ideas into her classroom. When asked for examples of how she related the learning to work or experience, she replied

As they started talking about, I started thinking about the CA (Curriculum Assistance) class, and putting the sticky notes, and the ... team, and thinking about how I was going to incorporate what they were teaching. That's the only way I can do it. It doesn't apply if I can't figure out while you're telling me, then I'm not going to pay attention to anything. Well, one of the things was with the staff, and with the questions they asked. And some of it, I connected with...now that I'm reading the notes again, it triggers what they were doing also jumped into the Glasser. Where you ask the questions; what are you willing to do, are you doing what you want to do, and is it getting you where you want to go? That kind of stuff. And so I started pulling all that and tying it in together. So it wasn't just...Baldrige. The tools. It was other stuff from past training.  
(#12/E/16)

A novice's response to the question of what role does staff development play in your teaching practice was that she preferred to go to colleagues to learn. As one can see from her reply that clearly illustrates the lack of ability to transfer the information for her own use without very structured guidance, this novice was at a concrete stage of learning about teaching practice. She was not able to transfer concepts from example to her own practice. The need that she expressed was to be taught one on one, by a colleague, about how to apply specific answers to her specific problems.

I think I prefer learning it from my colleagues. Being able to be in a one-on-one situation (and say) this is my problem, what do you think I could do to change it? And if I try that and it doesn't work, I can go to another colleague and have a conversation with somebody about, exactly what is going on in my situation, how can I adapt it to my situation specifically? And also, when you get that feedback on here, maybe you might want to try this, if for some reason I think, maybe that won't work, can you think of a way to adapt it a little differently that I could use, that might maybe, will work in my classroom. ...I prefer the one on one, yea, just kind of

weeding out all that stuff that I don't... that doesn't apply to me because I don't have that problem in my classroom. Cause when that happens, at these staff meetings, it's like, I tune out, and I'll start thinking about other things, what lesson I'm going to do tomorrow. All the grading I have to get done. I tune that stuff out, because it doesn't apply to me and my classroom, whereas if I go seek knowledge, from another colleague, I sit there and I listen, and I'm engaged, and I ask more questions than I would... (#11/N/6mon.)

One teacher recollected and summarized her thoughts about a presentation given for staff development to a group of teachers whom she supervised. The interview question asked her to talk about something that the speaker had shared that she could relate to her work or experience. Because of her level of exposure to a variety of teaching workshop topics, teacher attitudes, and her general pedagogical knowledge of teaching, she recognized that

I couldn't tell you, like for instance, what the teachers took out of it. But I can tell you that the day before, they took more out of it with (another presenter)... and the Cooperative Discipline. Because she gave them concrete things that they could do. This presentation wasn't about concrete things you can do. There wasn't, if you were looking to go in a make a world of difference the next day that wasn't going to happen. There was more of a way of thinking about, a way of organizing your thoughts about a situation. Giving you a little bit of something to chew on later and maybe put together when something, when 2 and 2 came together ... It was a different kind of presentation. (#1/E/25)

She was able to view the information that was presented by this speaker as valuable, but she placed it in a category separate from the workshop to which she compared it that she described as giving the teachers more “concrete things to do”.

Another example of general pedagogical knowledge was demonstrated from this expert teacher's comments when she was asked about how the presentation information related to work or experience. One can see that she is able to view the situation that she

described as part of an integrated whole, not just the discrete parts. She recognized that the student behavior in this instance resulted from the influence of contextual factors, expectations placed upon their ability to perform academically. Here she also indicated an understanding of schools as an institution and how students' experiences in a traditional school differ from those in this school that she has helped establish. These comments illustrate how the knowledge of learners base is interwoven with the general pedagogical knowledge base.

We've had 2 days of meltdowns, because finally there are papers due, and people have to work hard. And they put themselves out there and they are scared of failure. And that's all right because we are a good place for people to meltdown and try again. In the traditional public schools they don't get that opportunity to fail and get up and try again. And I think if we don't do anything else, if they close us down after 5 years, cause we don't have test scores, we'll at least have kids who learned how to fail and get up and try again, and not just quit. That just burns me, to hear a kid say, oh I'm just not going to do that. (#1/E/25)

Schon, in his description of the crisis of confidence in professional knowledge gives the following example

Often, a problematic situation presents itself as a unique case... A teacher of arithmetic, listening to a child's question, becomes aware of a kind of confusion and, at the same time, a kind of intuitive understanding, for which she has no readily available response. Because the unique case falls outside the categories of existing theory and technique, the practitioner cannot treat it as an instrumental problem to be solved by applying on of the rules in her store of professional knowledge. This case is not 'in the book.' If she is to deal with it competently, she must do so by a kind of improvisation, inventing and testing in the situation strategies of her own devising (Schon, 1987).

A likewise example is given here, when asked to describe herself as a teacher, this expert expressed opinion showed the confidence that comes from acquisition of

general pedagogical knowledge over time and developing an ability to make judgment calls based on that confidence.

I have to tell you most of the time, it's bluff. It's just like a lot of teaching is bluff. I mean one of the first things that you learn as a new teacher, that you better fake it sometimes and act like you know what's happening, and figure it out later. Because there are certain things that you just have to do. Just like a kid had half his finger cut off on the first day this year, half his thumb, and it's like, okay, well, I think this is what you do. (#1/E/25)

Novice teachers oftentimes do not display this confidence to act upon their instinctual feelings about an issue or incident that they have never before experienced, or to "go with their gut", as it is sometimes called.

This teacher summarized her idea of what makes a good teacher by sharing something that occurred to her in an undergraduate level classroom before she began her teaching career. She attests that the realization that she had at that time was pivotal in her development as a teacher and has influenced everything that she has done in teaching since. She believes that this experience changed her evolution as a teacher.

I remember, ... I can tell you that the most memorable moment in my experience is, that I'm 20 years old sitting in the biology classroom as part of a methods class, and I figured out that teaching was about them and not me. And the day that I figured that out was the day that I changed. And that was my methods class, when I was 20 years old. And after that it's never been, it's always been a continual development of, okay how can we do things better for kids, how can we do things better for kids, but the belief system that got laid down, got laid down on that day... my biggest speech to new teachers when I was a teacher educator, is that, it's not about you, and the sooner that you learn that it's not about you, the better teacher you'll become. And some (teachers) learn that early, and some teachers never learn that. (#1/E/25)

### Content or Subject Matter Knowledge

Content or Subject Matter knowledge is separated, by Turner-Bisset's description, into three areas. These are the areas of: substantive knowledge, or the collection of facts, concepts, and respective frameworks that organize the content area discipline and connect its various parts (e.g. how the concepts in physical science are related to those in biology and earth science); syntactical knowledge, a more cognitive level type of understanding, or theoretical view, of how the propositional knowledge has been established (e.g. in science – scientific method, inquiry, data collection and analysis, hypothesis, theory); and, finally, the beliefs or the orientation that a teacher holds about what is important to know with regard to a particular subject.

There is the increasing expectation, with the implementation of the accountability of school employees to prepare students according to the specific state's end of course requirements and standards of learning, that particular curriculum objectives are to be covered, satisfactorily, over a set period of time. This accountability pressure has a profound impact upon and presents conflicts, within teachers of all levels of expertise, in their decisions of how to spend the limited class time, what to emphasize, how to evaluate, how to remediate, and the pacing of the lessons to meet the students' plethora of needs.

One expert teacher interviewed recognized that the information he obtained in a workshop pertaining to the teaching of process Algebra could be utilized in other content areas. His response indicates his acquisition of content or subject matter knowledge and the blend of the sub areas that define this knowledge base: substantive

knowledge; syntactical knowledge; and his beliefs about what is important to know in the content area. When he was asked if he could have done anything with the information from the staff development he attended what would he have done, he replied

I think it's methodology is very good because it goes to the pyramid, to the learning pyramid, where if you teach someone else to do what you are trying to accomplish... this process approach fits right into that pyramid because the kids are the ones who are doing the teaching and you're initiating them down that road. And so I think that's why they learn better and it could be applied in other subject areas as well. I think that's why I had already incorporated a lot of the things that I do in process prior to taking the workshop. I believe (it could be applied in other content areas) so, ...I think it would have been, if I were in the position to, if I had my own school and I could make that decision, that would be the one thing that I would try to encourage more ... (#5/E/29)

In his answer to this question, his knowledge of the substantive facts and concepts of his subject area of math is demonstrated when he shared that with this process method of teaching that a teacher must have the content knowledge and therefore the flexibility to recognize that

it's more difficult to teach, because you have to, we have 55 minute class periods, be thinking a lot on your feet, and whatever they say, you have to somehow draw it into the problem and into the lesson plan, and get it moving in the right direction to get them there. There are a lot of teachers who don't like this, they don't want to use it, they are against it. But, we've had the highest Algebra 1 scores on the End of Course scores for about the past 5 years. So, it's kind of proving itself. (#5/E/29)

In addition to demonstrating that he had the content or subject matter knowledge, his response indicated his awareness of the knowledge base of educational ends, purposes, and values by the way he connected the students teaching others as a way that they led

the instruction and were able to meet the school, system, and state-wide goals that were set for attainment of scores on End of Course evaluations.

One novice, lateral entry teacher gave several examples of how she added to her content area knowledge as she proceeded through the day to day process of teaching, getting student feedback, and working with colleagues to modify the curriculum to suit the learners' needs and reach the course objectives. In this response, one can see that clearly *she* knew the content material on which she was testing her students, but was oblivious to where *they* stood in *their* understanding of the material. She was able to learn from her mistake, correct the situation with the students, and go forth. There is more than just the knowledge of content indicated here. This novice is displaying the acquisition of several other knowledge bases, again demonstrating how all of these benchmarks for developing teacher expertise are intertwined. From this event, she not only learned something about herself, through self evaluation contributing to her knowledge as a teacher; but, something about her learners, enlightening her as to where they stood within their content area and cognitive abilities; and, certainly added to her general pedagogical knowledge. This reply was in response to the question presented to her about what had contributed to the change in her as a teacher.

...survival. You have to. You have to change. Students tell you...I'll tell you a good example, this was last year. This was a horrible, horrible thing. I gave a test, I knew it was a hard test, it was a test of Stoichiometry. I think there was only six questions on it. And I knew they were hard questions and it should take them the whole period. I gave it to second period Chemistry... At the end of the period, fifty percent of my students had not finished the test. Advanced Chemistry. I was like, oh my gosh. Okay, hand it in, I'll figure out what to do later. I issued the test all day, and fifty percent didn't finish it. I went home that night and I was like, gosh, I can't count it. It was too much. I had no clue. I thought it

was a great test to get done; I got it done, you know. So, I went home, and I decided I had to redo the whole test. I wrote a new test, came in the next day and issued another test. It was definitely a learning experience. The students were extremely grateful I gave them that opportunity because they were very upset. I said, don't be upset, I'll figure something out, I'll figure something out. They get upset when they're in that situation, and that's not the point. You have to learn. (#8/N/2 lateral)

In addition to this experience, which helped her revise the presentation of subject matter information, she shared how working with a more experienced colleague who was not a formal mentor, but someone with whom she formed a connection, was an integral part of her acquisition of content or subject matter knowledge, presentation, and pacing of the information to students.

I also, was extremely blessed last year to have a fellow Chemistry teacher who took me under her wing and really helped me tremendously. We generated awesome curriculum last year...It was her fifth year. It was her first year at Athens and I think that's why I think we hit it off at the beginning. Cause we were both new to this school, and trying to figure out all those little things. We both teach the same way. We have this love of hands on Science. So, we would stay after school and we would work up labs, and we would do them, and we would try demos. We were here really too long every day, but we generated awesome things. And we had fun doing it. Melanie helped me a lot last year too... We would plan the unit together, and she would say, they're going to have trouble with this. Cause she had that experience. And I said why, and she's like, this is the part they're going to have a hard time with, so if you go through it this way, then they can get it. I said okay. So, I have modified my curriculum significantly based on where they stumbled last year. (#8/N/2 lateral)

Again, speaking in response to what she felt contributed to the changes in her as a teacher, she demonstrated the ability to set in place a mechanism to help her self evaluate her performance by utilizing student feedback. This ability to deliberately self-evaluate her own practice had an impact upon her practice because it came directly to her from the individuals who mattered the most -- the students. It is also feedback on the specifics of

praxis that she has immediate control over and can change to improve. It is the view of this researcher that this method of receiving feedback from students is an excellent way to enable teachers to modify their practice in order to achieve the desired end results. This method empowers the teacher to make changes in his or her teaching behaviors based upon the informal survey of the student, that can immediately impact the classroom environment and how need fulfilling that environment is structured for the student and the teacher.

The answer that this teacher gave to the question of what contributed to her change as a teacher clearly indicated knowledge of self and knowledge of learners (the nature of the student-teacher relationship) in addition to the knowledge of the content. From this involvement of the students in the feedback to the teacher regarding different aspects of the class, they feel more invested as they have contributed actively to their learning in the role of a partner in the endeavor because they can see the changes that they had suggested implemented.

I ask for a lot of student feedback. I even put on the back of my interim; I put a little questionnaire on there... one of the questions was, what can you do to help yourself improve your grade if you're not satisfied with your grade, what can you do, and what can I do. I got some good suggestions... but one suggestion was can you put the page numbers on the board from the text that go with what we're working on? That's great idea, yeh, I can do that. So I put that up. I ask my students, what'd you think about this, what'd you think about that lab, what about this test, was it too hard, too easy? (#8/N/2 lateral)

### Knowledge of Self

The self-knowledge of what one can, as a teacher, control and what is outside of the realm of one's control as a teacher is helpful in eliminating frustration. Constant

challenges arise on a daily basis in teaching, especially for the novice teacher. When one does not know why one feels the way one does in response to a challenge, either to their content or subject matter knowledge, knowledge of learners, or to their knowledge of educational contexts or educational purposes, frustration arises until the personal or internal conflict can be resolved. Constant challenges to a novice teacher that go unresolved can be a reason that many new teachers leave the field before developing the expertise that is so sorely needed in the profession.

Once a teacher has established a personal philosophy, beliefs, and values about teaching based on self knowledge, he or she becomes more grounded in their praxis. Then, when the inevitable challenges to their position occur, be it from students, parents, administration, they are secure and confident enough to resolve the conflict and resulting frustration in a manner satisfactory to themselves and others. Knowledge of self involves knowing the underlying personal ‘wants’ that affect behavior. How does one want to be a teacher? What feeling, thoughts, and actions drive the behaviors that comprise the perception that one has of him or herself as a teacher? The answers to these questions are revealed over time and through practice. One expert teacher, in response to the request to describe herself as a teacher replied

I’ve always felt like my primary job as a teacher was to provoke people. If you are not provoking people, then you are not doing a good job. I mean, I’m serious, I think that sometimes ...you are either going to get emotionally, or intellectually... I can safely get it with most kids, intellectually, and with a lot of kids emotionally...People always say, you shouldn’t think that, and I’m like, yea, because conflict is the most important thing. If I can’t provoke you, into something, then I’m probably not doing my job. (#1/E/25)

The experience and confidence that this teacher has gained over the years has firmly established her beliefs as to the role that she should play and how she goes about creating a conflict that provokes learning within her teaching environment. In order to incorporate the method that she describes into a teaching style, one must feel very comfortable in the beliefs held about what is important to convey to students and how to go about conveying this knowledge in practice.

This researcher feels that this grounding in personal philosophy and self-knowledge is a crucial factor in the survival of the novice teacher. Day to day challenges that present inner and outward conflict and go unresolved will wear down anyone, especially the first or second year teacher. Frustration levels can build within a classroom due to the ordinary demands put upon teachers, not to mention added disequilibrium resulting from discipline concerns, inability to motivate students, lack of skill in modifying content lessons to meet student needs. All of these issues threaten the new teacher's credibility and ability to function effectively. It is the opinion of this researcher that solid grounding in the beliefs one has developed regarding teaching and all the accompanying responsibilities as they are connected to self-knowledge is not only beneficial, but it is critical to developing longevity and teaching expertise. An example of the frustration arising from the student management skill of a novice is revealed upon being asked what prevents her from doing a good job in her classroom.

This novice teacher responded

They irritate me when they refuse to shut up. Friday, 6th period is the worst. But I think the biggest stumbling block, is when they just sit there and never stop talking. And it just frustrates me, and then I end up making them, not do busy work, but do quiet work, where as I love having them

do group work, and working with partners, but when they take it to the extreme, and can't be quiet when they are trying to go over that work, then it irritates me, it frustrates me, and I tell them that they have to just sit there and do it quietly by themselves. And I know they don't like it, and I don't like it. I would rather have them working with one another, and participating, but...yea, some days, it just really depends on the day. Some days, no problems whatsoever, other days, it just seems like they come in wound up, and can not quiet down for some reason.  
(#11/N/6 mons.)

This novice realized that she was frustrated and acknowledged the inconsistency in the student behavior from one day to the next, but did not make the connection to her disciplinary or management skill through reflecting upon the part that she played in the scenario and self-evaluating her own behavior and responsibility in the situation.

The ability that one has to develop self-knowledge as it relates to a teaching role helps more clearly define and change teaching behavior through critical reflection and self-evaluation. The importance of developing this skill was not described in the majority of literature reviewed regarding the development of teacher expertise. Teachers who are aware of their own learning processes, as adult learners themselves, through the use of critical reflection and self evaluation are on their way to being autonomous learners. These teachers, by virtue of having refined these self-analysis skills, are better equipped to articulate the awareness that they have about their learning processes and their development in practice and make necessary changes to improve their performance. Turner-Bisset's model includes knowledge of self as an important ingredient in a teacher's development. This identification of knowledge of self as a factor in expertise development was a glaring omission not present in any other model examined for use in this research study. Self-evaluation and critical reflection were

components of other models (Berliner, 1988), but were not described as self-knowledge, nor were they elevated to the level of being a key identifier of expertise development.

This researcher draws from Glasser's (1984, 1998) work to explain the process of the choices that individuals make with regard to their practice, and how they think about their practice. The clear understanding of what one wants from a particular situation (in this case teaching practice) is a key element in achieving this self-knowledge. Teachers who are aware of and able to critically reflect upon their own practice to determine if they are matching their idea of the teaching practice that they are trying to attain are moving toward the development of teaching expertise. Many are able to achieve this awareness by targeting the areas of feeling, physiology, thinking, and acting and realign their behavior to meet their goals. This knowledge of self permeates everything that a teacher does in practice. Teachers who demonstrated knowledge of self across many of the responses to the interview questions in the study, also demonstrated many of the other knowledge bases and were, most often, the expert teachers.

When asked if she was able to do what she wanted with the information presented in the staff development session, this expert teacher critically reflected upon her own teaching performance and shared that

I'd like to do that to model for the kids, model for the adults that goal of getting the excuses to stop. Just do it, kind of thing. I have to work on me first ... I have to figure out how I'm going to do it, and then I have to model that I'm going to do it, then I have to get a couple people on board, and I think that's the best way to do it, as opposed to just me saying; this is

what I heard, do this, cause it's a good thing to do. I'd like to walk my talk, instead of just giving it to you. (#12/E/16)

This teacher's ultimate goal, as a coordinator within the school, was to share her knowledge not only with students, but with other teachers, modeling the implementation of the information in a way as to get everyone working together toward the same goal. She was cognizant of her own ability through self-evaluation to know that she was not quite ready to share with other teachers as a role model, yet, because her performance was not up to a standard that she had set for herself.

Once an individual is able to clearly identify his or her beliefs about teaching, then they better understand why they feel, both physiologically and emotionally, the way they do when a conflict arises within himself or herself as a result of interaction with a student, colleague, or parent. This understanding is an important element in the foundation of their personal philosophy about teaching. Each time a teacher critically reflects upon a situation and evaluates his or her own behavior, they either affirm or challenge their beliefs. When critical reflection takes place and there is a need for the teacher to reorganize the way that they think and or act in response to a particular event to more closely meet what they are trying to achieve as a teacher, they are becoming more solid in their practice. One expert teacher shared how she decided what to apply in her classroom

Well I don't worry so much about the, what I'm comfortable with, or what's easy for me, or what everybody else does. I constantly watch them (the students), and adjust to their needs. Like, I said earlier, there's no depth to their writing, there's no depth to their thinking. Everything is very linear. Well, they are 14, 15, and 16 years old, and almost 17... But, that's where they are, and I think in traditional systems, there's always a "this is where you should be" kind of mentality. And I take teaching more

of an okay, this is where you are. Okay this is where you are, and this is where I'd like you to be. What do I have to do to get you to be there, instead of, ew, everybody else has screwed up because you don't know how to write a paragraph. It's like, that's not going to do either of us much good, we're just going to hate each other by the time we are done. So then, today is a writing experience on, tell me every vivid detail that you can about the bombing in Afghanistan, let's just start working on detail writing. So we can maybe start working on detail thinking. I don't know if it will work or not, it's like a crap shoot everyday. It's like, I try something new, sometimes it works, and sometimes it doesn't. When it doesn't work, I toss it out and try something new. (#1/E/25)

### Knowledge of Learners

Teachers who demonstrated knowledge of learners were able to articulate an awareness of typical student behavior for the age group of student that they were teaching. These teachers were cognizant of student behavior socially in the classroom and the school, how context influences their behavior (environmental factors), and of the student-teacher relationship. Turner-Bisset labels this facet of knowledge of learners as empirical or social knowledge. Additionally, there are components of knowledge of learners that teachers possess that encompass cognitive elements. One of these is described as knowledge of development and is demonstrated by being proficient in teaching in a way that one is able to structure an activity so that the student moves toward acquiring a skill unaided. The other of these is knowledge from contact and sufficient understanding with a specific group to be able to adapt to the needs of particular learners. Demonstrating how the knowledge of content, self, and learners is intertwined, this expert teacher responded to the question of what she learned from the staff development presentation that she had attended by stating

I mean, when they create the climate, when they make the current shift, those are the exciting moments to me. So it's almost like, the learning

leads the way. Whatever the learning is evolving to be, you've got to be willing to shift and go with it. And go with the flow. yea but, ... I think the big moment for me, is (when) the kids get it. And I've had a lot of those. To see kids, to see a kid who really never does anything, like I had a kid at Norman (OK), he never did anything in anybody's classroom, but anytime we ever designed an experiment, he would be the most focused person in the room. And I still remember where he sat, I remember the experiment that he was doing with density, it's bizarre --that was 15 years ago--because that's how they touched me. Now, they don't know they touched me that way at the time. But I mean, those are the big moments in teaching. I have to have them every so often. (#1/E/25)

The teacher's classroom performance is one of a fine balancing that is analogous to the refined skills of artists such as musicians, dancers, and actors. This balancing continues throughout the overall school environment as interactions with students, demands of the curriculum, accountability for student performance, and test results exist simultaneously. A less tenured teacher was asked if anything prevented her from using the information that she had acquired during the workshop. In her response, she demonstrated an awareness of the students needs due to their varying ability levels. She was attempting to accommodate and appropriately teach to these differences, but one can sense her frustration with the challenge of leveling instruction, covering the required curriculum, and motivating the students to perform adequately all within the time allotted, not only for the class period, but for the school year. One telling comment that she made as a part of her response is that "we're also getting behind. And I just can't, I don't know what to do, and there's nothing in any workshop that teaches me what to do."

lack of time is about the only issue I would have with not trying something...I do balance it now with my advanced students, and I practically have all advanced this year, they are willing to do so much more on their own, that I don't worry about things like graphic organizers.

I do it every now and then, if I want... to summarize this right now...we did a Venn diagram to compare ionic compounds and molecular compounds. What's the same, what's different? Use this to study for the quiz tomorrow. We did it in ten minutes with them. They know the information. They've got it, and they can give it back, and then when they see it all pulled together, that's really what's helping and it's all nice and easy and tidy for them there, and they can study from that. With my academic students, there's such a huge difference this year between my advanced and my academic students, I am spoon feeding them everything. I mean, I can not get them to do much of anything on their own. So the class time that I use, I'm trying really hard to get the most value out of it. If we work three problems, and there's one of each different type, in class, do I need to sacrifice a whole day tomorrow to make more problems, or are they going to get it with those three? I do graphic organizers with them because it does help them, but we're also getting behind. And I just can't, I don't know what to do, and there's nothing in any workshop that teaches me what to do. I can't make them do it at home. I can give them everything they want, but you just can't make them learn it, and you can't make them do their homework. They make a decision every night. They wonder why they don't do well. The ones that are doing well, are doing the work, and the ones that aren't, are not. In this class, you can't just get by. You can get by in a lot of classes as an academic student, but Chemistry is a demanding curriculum. And for an academic student, it's going to require some work. (#8/N/2 lat.)

The remarks of the following teacher were contrasted when asked of specific instances when the ideas with which he was presented in the staff development were not used. In his comments he demonstrated how his knowledge of the learners comprising a class will dictate the approach that he takes with that class.

sometimes it's just the group that you get. I think that in the past, I have gotten a lot of the kids from English as a second language, a lot of the hearing impaired and visually impaired, and also a lot of the kids who have IEP's, I end up with a whole lot of those kids. And sometimes, if you don't have a real structured environment for them, it, they get started wrong, and it ruins their entire period. So I think that the class composition pretty much has a bearing on how you are able to do that. (#5/E/29)

The most prevalent, reoccurring concern that the novice teachers interviewed in this study expressed was on the topic of student discipline and classroom management. The novices' inability to accomplish what they were trying to achieve with the delivery of lesson content was intertwined with their expressed feeling of inability to motivate or manage their students. The more experience the teacher had, the less these issues were verbalized. The better-equipped teachers were to meet their students' needs through appropriately leveled instruction, the fewer were the teachers' complaints about motivation and discipline. Again, one can see how these knowledge bases are intertwined. The knowledge of learners, both empirical and cognitive, effects a teacher's ability to adjust the instruction to be need fulfilling for the variety of levels that exist within a classroom. The level to which a teacher is well versed in the content or subject matter knowledge, has knowledge of models of teaching, is skilled in curriculum knowledge also affects their ability to motivate and manage students. As testimony to this is the comment from a novice teacher when asked what more she would like to have done with the information after the staff development workshop she replied

there's certain times when chatter is not an issue, like when we're in lab. As long as they get their lab done, I don't care if they talk about what happened last night. But if they don't get their lab done...then it's an issue. And they're old enough and smart enough to make those choices. When I'm teaching something and the kids are helping the one next to them, I really appreciate that they're helping, but sometimes, I need it to be quiet for two minutes rather than thirty seconds so I can get the whole sentence out. And I need to figure out a way to control that and not totally stifle the kids that are creative and energetic and helpful. I want them to be helpful. And I've tried a number of things with my seating arrangement, and none of them have improved it. I'm going to change the seats once again, but

what I really need to do, is watch an experienced teacher who teaches advanced students, and see how they manage their class. (#8/N/2 lat.)

Another teacher shared what she applied in her classroom that had been rekindled from the workshop that addressed an issue with student behavior. This tenured teacher identified and separated the behavior to be addressed and approached the student specifically targeting what the student was doing. The language that she chose to use, the empirical knowledge of the learner, and the confidence with which she addressed the issue demonstrate her knowledge of the learner.

I always do that individually with students, like, I've got one girl now, and she was playing with her pager yesterday and I said, ..., is this getting you what you want? Okay. No, before I even said that, I said, let's remember what you said you wanted in this class. You said you wanted to pass, right now you are not passing, so you want to pass. So is this behavior getting you what you want, and of course she had to answer no. I said, okay, then what behavior then would get you what you want? Because it's really all about what you want and what your picture is, and how best you can complete it. Now those are things I've done for years now, but I think now I'm trying to be more conscience of when I use them with student. (#6/E/25)

Knowledge of the learner is, admittedly, something that is acquired through experience with particular sets or groups of learners. This knowledge base is developed through the teacher's exposure to the demands of the variety of students' needs, both cognitive and empirical elements. This knowledge is interwoven with general pedagogical knowledge and is developed over time and through personal experience.

#### Knowledge of Models of Teaching

One of the main desires expressed by the novice teachers interviewed was to have the time and opportunity to observe other teachers in practice in an effort to see the more expert teacher model the handling of specific situations that had been expressed as

being problematic in the novices' classroom. One novice, when asked if she could have done anything that she wanted with the staff development information, what would she have done, stated

I would've asked to observe some teachers that are using it well. That's the thing I want more than anything as a new teacher, is time to observe good teachers, and I don't have it. There's a hundred and thirty something teachers in this school, I'm sure there is somebody out there. I don't know who they are; that's the other problem. But I can get those names. That's easier to generate than the time. I have begun to get some names and I am going to observe teachers for specific things, like, I'm concerned about the amount of chatter that goes on in my advanced classes, and it's not rude chatter, it's just chatter. There's certain times when chatter is not an issue, like when we're in lab. As long as they get their lab done, I don't care if they talk about what happened last night. But if they don't get their lab done...then it's an issue. (#8/N/2 lateral)

One can connect the need expressed here to observe a more tenured teacher managing the behavior of students in the classroom and see how the knowledge of learners base and general pedagogical knowledge are linked with this knowledge of models of teaching. The lack of confidence in their ability to manage student behavior was another repeated expression of concern that came from the novice teachers interviewed. They reported going to a colleague to ask for examples of how to appropriately deal with student discipline, but suggested that observation of the more experienced teacher would be very worthwhile to their own practice.

It is one thing to spend many years in the classroom as a student and quite another for that role to be reversed where the one who has traditionally been the follower becomes the leader. Novice teachers are, upon day one in their teaching practice (and without virtue of much practice), thrown into a role that requires being able to shift gears, or as some described it 'fly by the seat of their pants', 'teach on the

fly', in an ever changing, dynamic classroom environment. Those teachers who have exposure to, knowledge and understanding of a variety of models of teaching are better equipped to survive.

Novice and expert teachers alike repeatedly reported a lack of time as being the key barrier in implementation of staff development ideas. As the novice quoted above revealed, time to observe, and the following quote from an expert teacher regarding the lack of time to implement.

Oh, a lot of it (has not been implemented). That's why I still have it on the sticky notes because I haven't used it all due to time constraints. Time. Just coming in, and it takes time to re-group yourself, and reorganize, and say, okay, I'm going to run my classroom this way now, starting today. But when you want to do this, and three to four different things, you feel the need to happen at the same time, just getting that time to do it. So, has it just been a process of gradually implementing ... the easier, quicker ones ... the ones that aligned mostly with something already doing.  
(#12/E/16)

Turner-Bissett (1999) describes knowledge of models of teaching as the teacher's thoughts, knowledge, and beliefs about teaching that comes from their own school experience and shapes their perceptions of teaching and their own developing practice. To add to this description, this researcher believes that knowledge of models of teaching comes from exposure to methods and strategies through discussion with colleagues about what works with particular, shared groups of students. These methods and strategies can be derived from theories about practice (e.g. Cooperative Discipline, Quality Tools, Choice Theory) that have been disseminated in staff development opportunities within a school or system. These can be methods and strategies that come from tried and true practices as reported amongst teachers as appropriate responses that

work to address expressed issues and concerns ranging from the most effective ways to teach subject matter content and or materials to use, to how to handle discipline and or communicating effectively with administration.

### Curriculum Knowledge

As Turner-Bisset acknowledges, Schulman (1986) refers to curriculum knowledge as knowledge of ‘tools of the trade’. This phrase could be interpreted to mean that curriculum knowledge is a composite of knowing how to teach a subject so as to creatively integrate the topic at the right time and with an appropriate variety of materials or tools to address a continuum of learners’ needs (e.g. adaptations for learners with a strong propensity for visual, auditory, or tactile learning). Curriculum knowledge is a component of teaching that involves the skill or ability to help the learner make the learning connect with his or her experience. It seems that some teachers more easily utilize the ‘tools of the trade’ or with less assistance than others. Exposure to curriculum materials and how these materials help learners to learn better equip teachers’ toolboxes. Toolboxes are referred to here in a figurative way to suggest that a teacher must have the right tool, strategy, method, or material, at the time it is needed to do the job. Some jobs require specialized tools and these are the tools that are acquired over a period of time and through exposure to their specialty use. One teacher framed her perception of the learning from a workshop that she related to her work experience by saying

The fact that it's not a one shot, this is how you do things. That it takes the tools, just like in anything you do, you have to have several tools to do what you need, not that this is a fix-all for everything. And that's what I

like about it; that I can pick what I like, that works for me, and not use some of those things. But, that's what I like about it. (#12/E/16)

Novice teachers need exposure from a variety of sources, such as mentors, specialized professional development, or commercially produced curriculum materials in order to develop this curriculum knowledge. For teachers, just as their students, do learn in different ways. The awareness that ideas for teaching must come from a variety of sources and be blended with their knowledge of learner, teaching style, and content substance is demonstrated when this novice of two years answered the question of “what role does staff development play in your teaching practice”. She shared that

well, I think I went looking for answers. I'm not sure if that's what you're getting at, but I went hoping that I could find out how to motivate those students that I can't motivate. I'm not convinced that I discovered that. I went in looking for answers, I came out with some good ideas, but I didn't come out with answers, I don't think. I don't think the answers are that easy. (#8/N/2 lateral)

When asked to share examples of learning that related to her work or experience she realized that she had been exposed to several new tools and was able to take these back to the classroom and immediately utilize them with students.

A couple things. Number one, it gave us some different graphic organizers you can use, and I found that useful, cause graphic organizers, I had no, other than what I had learned at NC Teach, we did talk about them there, but as a child growing up, I don't ever remember doing a graphic organizer. And I have used those and I think they can be very effective. The other thing is the sticky notes. I'm going to use it again tomorrow. We're getting ready for midterms. I gave students a review sheet, I said come in tomorrow, I want you to have looked over the sheet. That doesn't mean you have to have done every problem. Look over it, find the problems that look foreign, that you don't have a clue how to begin, try to do them, and if you can't, when you come to class tomorrow, I'm going to ask you to make a list of your questions, and I'm going have them do them on the stickies. And I'm going to organize the sticky notes by unit, and then Thursday, that's how I'm going to review. We'll go over those stickies by unit. So , that I did learn from that workshop. It's a great way

to organize information and figure out where students are confused or not confused. (#8/N/2 lateral)

However, curriculum knowledge is another of the knowledge bases that is closely intertwined with general pedagogical knowledge, content or subject matter knowledge, the knowledge of learners, and knowledge of educational contexts and ends. For example, the knowledge of learners and content knowledge strongly influences the teacher's choice of curriculum materials and in many ways dictates the development of curriculum knowledge.

### Knowledge of Educational Contexts

The 'teachable moment' is often referred to in teacher preparation programs. A key skill in being able to take advantage of the teachable moment is first to be able to recognize it and then to make the necessary shift to accommodate and utilize the event as such. Teachable moments happen in the cafeteria, the hallway, during interactions in the library. For a teacher to make the connections in order to not let the opportunity pass, takes a level of skill and experience. Acquiring the knowledge of educational contexts incorporates a range of factors that affect development and classroom performance including the organization and structure of schools, classrooms, and all settings where learning takes place. For example, a special education teacher illustrates his knowledge of educational contexts when sharing something that was emphasized in the staff development workshop that he brought back to his teaching. The emphasis was placed upon allowing student choice. Not only did this teacher allow his student to choose his behavior, but also he was able to proactively structure interactions with others to extend the context of the learning to situations allowing the student to

generalize and transfer the skill. This example is exemplary in that it demonstrates this teacher's knowledge of educational contexts extending to all settings in the school where the student can practice the targeted behavior.

I remember last year having another young man come in, and he liked to sing songs and dance to himself in the hallway. In years past I probably would've said, don't do that, but I think he was aware enough of his social surroundings, that I said, you know, if you choose to do that, this is what will happen; kids may make fun of you, they may tease you. This is what may happen. If you still choose to do it and don't mind students making fun of you and thinking you're a little weird by singing to yourself in the hallway, and dancing in the cafeteria during lunch, feel free to do it. So he had a choice, it was his decision. I also set up with him something else I took from the workshop, is a rule of two. He loves movies, and he knows them. That was his area of interest, and he had a great deal of knowledge about movies, certain movies, he could tell you the ins and outs of things. But he would talk to everybody about it; every cafeteria worker, every teacher, every administrator. He would go to the library and sit there and tell you all sorts of things. So our rule of two was that you can have two questions or two comments to people about movies, and then you need to move on to something else. And then you can come back to it, but you need to expand what you talk about. So he would follow it when he knew I was around, and if he knew that people that knew the rule. I would see him in the cafeteria talking to somebody who was selling (school name) gear, and as soon as I made eye contact with him, he would get up and leave. So then I would have to talk to the woman and I'd introduce myself and I said, we have this rule of two. She just looked at me and said, I wondered why he just left. I was wondering if I said something wrong. I said, he has a rule of two, he can say two questions or two comments about movies, and then he needs to talk about something else, and you need to enforce that, otherwise he'll talk and talk. Oh, I don't mind, I don't mind. Well, that's not the point if you don't mind, or not. He needs to be able to follow this end expand his social conversation cause he's capable of doing it, but people just let him get away with doing it.  
(#7/E/12)

Another expert supervising teacher spoke about one of the novice teacher's newly acquired ability to use her skills to integrate student learning objectives outside a lesson plan developed strictly for the classroom. She described an opportunity to do this that

was thrown on the novice at the last minute as a way this teacher was able to display her knowledge of educational contexts.

I had a speaker drop out and I need someone to take them on a nature walk, can you do that? She goes, sure, I can do this, this and this, and oohh, that will cover that objective and that would cover that objective. It's like she's spontaneous now, it doesn't scare her anymore. She will take those kids on a nature walk and they will come back with more stories of what they learned over there and behavior's not an issue anymore and it's just an amazing thing. She's learned to be a teacher and she teaches the whole child not just her subject area. (#2/E/21)

Experiential learning focusing on required objectives that can be done outside the classroom at the spur of the moment is clearly an example of knowledge of educational contexts. This teacher was flexible in her thinking and spontaneously able to extend the walls of the classroom to include whatever environment in which she and the students were placed to meet their learning needs.

#### Knowledge of Educational Ends, Purposes, and Values

In the process of developing teaching expertise, ideally novice teachers would have in mind a picture of or a model of the teacher that they want to become in order to begin their growth process with that end goal in mind. This model teacher would think, feel, behave, or act upon thoughts and feelings with the educational ends, purposes, and values for both short and long term, both system-wide and classroom-wide as a point of reference. This knowledge of educational ends, paired with what the teacher personally wants to accomplish in his or her classroom, is a key, often unstated or underlying motivator that perpetuates self-improvement in praxis. To be aware of these educational ends or goals and to keep them in mind during teaching practice is a marker of expertise that demonstrates a teacher's ability to critically reflect, self-evaluate, and

as a result, align practice with the overall goals of the school, school system, and public instruction in education.

When asked to give examples of when she did not know something that she needed, what did she do to about acquire the needed information, one teacher who left the traditional public school to start and work in a charter school to accomplish just that responded:

to learn a different way to teach and approach kids with teaching. I thought that stand and deliver model, while pretty effective and taught worldwide, it just wasn't, they weren't learning. It was all short-term memory kind of things ... part of signing on with this school is using the integrated curriculum --project based and experience based. And we all as educators know that it works, but the hardest part is actually learning how to develop that and put things into very concrete objective ways for students so that they can learn versus following along with the book and lecturing and hoping they have recall. (#2/E/21)

This teacher's philosophy of teaching and knowledge of educational ends and purposes, after 20 years, were such that she felt the need to establish a different school to try to meet those goals.

In stark contrast to the understanding that the experienced teacher demonstrated in her knowledge of educational ends is the inability of this novice teacher to connect understanding in a discussion of short and long term school wide goals with her classroom. When she was asked to share what she learned from the professional development session that she had attended, she responded that

... this man talked through this flow chart about our goals, or our vision for the school, and then when he turned the overhead off he tried to get us to reproduce it. And I know I believe in goals and things like that, but sometimes they just seem too far out there, you know. I guess I need more specific goals...shorter term, and we were more long term vague, and...you just couldn't connect with that. (#14/N/3)

### Differences between Novice Teachers and Expert Teachers

As is evidenced here within the discussion of the various knowledge bases comprising Turner-Bisset's (1999) model of Knowledge Bases for Developing Teaching Expertise used for the analysis of developing teaching expertise, most novice teachers articulated that they need very specific examples and structured one-on-one guidance to facilitate their understanding of a variety of topics in concrete ways. Novice teachers reported a preference of seeking information from their colleagues rather than from professional development opportunities. The novices made explicit remarks about how the staff development was not how they preferred to be spend their time. They also specifically commented about how helpful it would be to observe other teachers to have modeled for them the ways these teachers successfully manage classroom discipline.

In contrast, the expert teachers interviewed demonstrated the ability to generalize concepts presented in professional development sessions to their teaching practice and to draw from their past experiences to develop new ideas about how to implement the information presented into their practice. These teachers were often unable to distinguish where, when, and how they had acquired the skills and teaching methods that they practiced, but the presentations they attended affirmed for them that they were doing what they should be doing and aligned the organization's or system's philosophy with their own. Interestingly, the majority of expert teachers revealed that in around year seven of their teaching practice, they began to seek ways to help other teachers and to expand their skills by sharing their knowledge with others in the profession.

### What Makes Learning Experiences Meaningful in the Context of Practice?

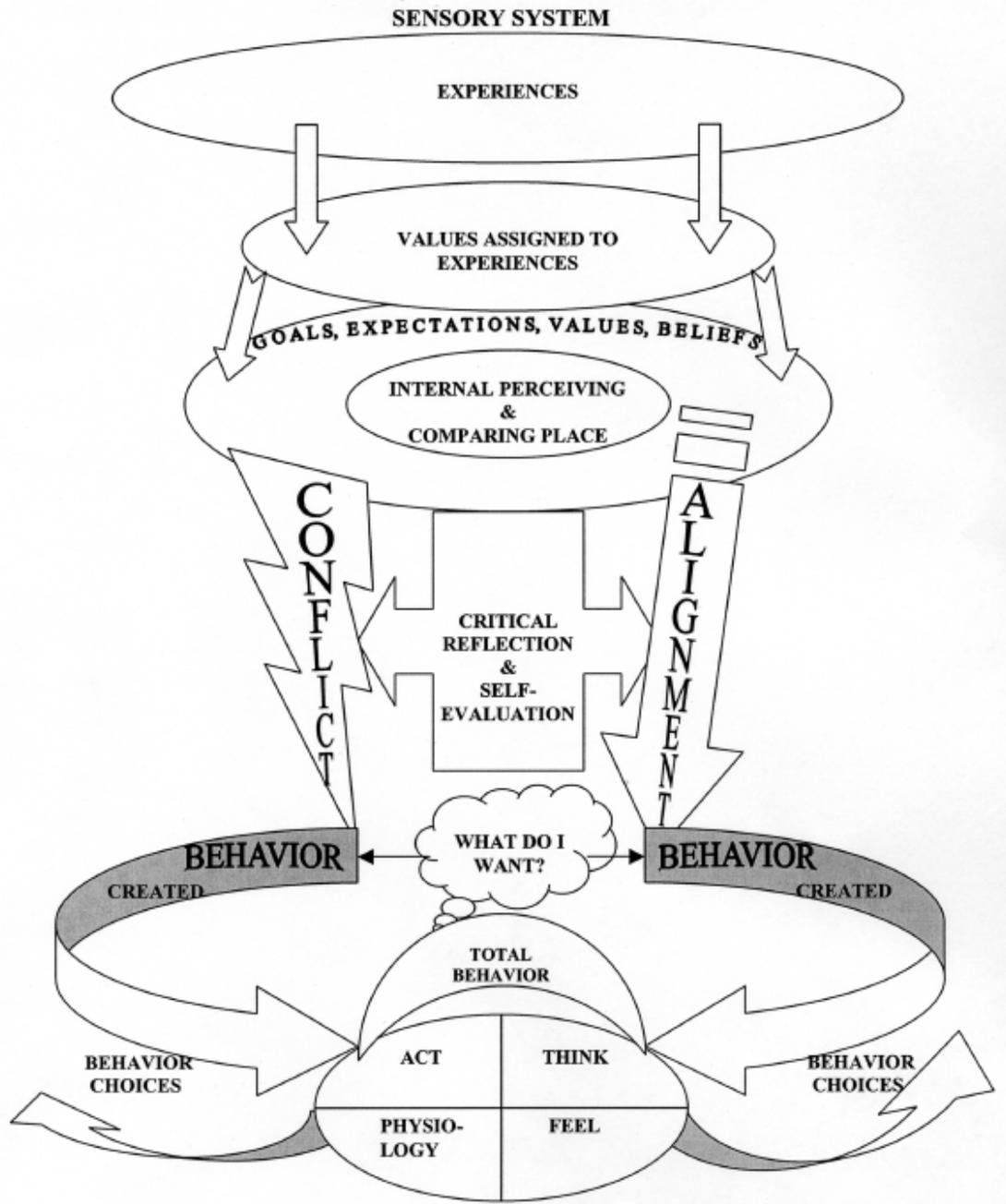
To describe the findings of this second research question, it is necessary to review the basic underlying theoretical frameworks of critical reflection (Mezirow, 1981; van Halen-Faber, 1997) and choice theory (Glasser, 1998) that were utilized to analyze the data and that were initially presented in Chapter Two. It is also important to recognize the interrelated aspects of these two theories and to know that they were not utilized in this research study independent of each other, but in conjunction with their parallel concepts.

Considered an important element in exemplary teaching, critical reflection occurs when a person's beliefs, goals, or expectations are put to the test by means of thoughtful questioning (van Halen-Faber, 1997). As teachers experience the daily routines and become more comfortable in their roles, using methods such as reflecting upon critical incidents, engaging in collegial discourse to dialogue about competing interpretations, examine evidence, discuss alternative points of view they begin to validate themselves in their practice through what is being communicated. Reflective practice serves as a central link in the learning process of teachers and critical examination of practice can have a significant impact upon development of expertise. In conjunction, choice theory provides an explanation, not only of why individuals behave as they do, but describes a process that explains the connection of a person's total chosen behavior. The behavior is the result or outcome of the internal perceiving and comparing to their own personal and, many times, tightly held goals, expectations, values and beliefs that is done through critical reflection and self-evaluation. Additionally, choice theory provides an overall

framework to illustrate that experiences are assigned values as they are perceived, and then align or conflict, as they are compared internally, with personal beliefs to create or organize new behaviors as a response. The implementation of this theory into personal practice requires an individual to have an awareness of their own needs and the behaviors that they utilize in effectively getting their needs met and the ability to use self-reflection and critical self-evaluation to align their behavior with their goals, values, and beliefs. The model used to guide and interpret the findings to this second research question is depicted in Figure 3 and is an adaptation from Glasser's (1993) diagram explaining control theory - why and how we behave.

**Figure 3: Critical Evaluation and Choice Theory**

Figure 3. Choice Theory and Critical Evaluation



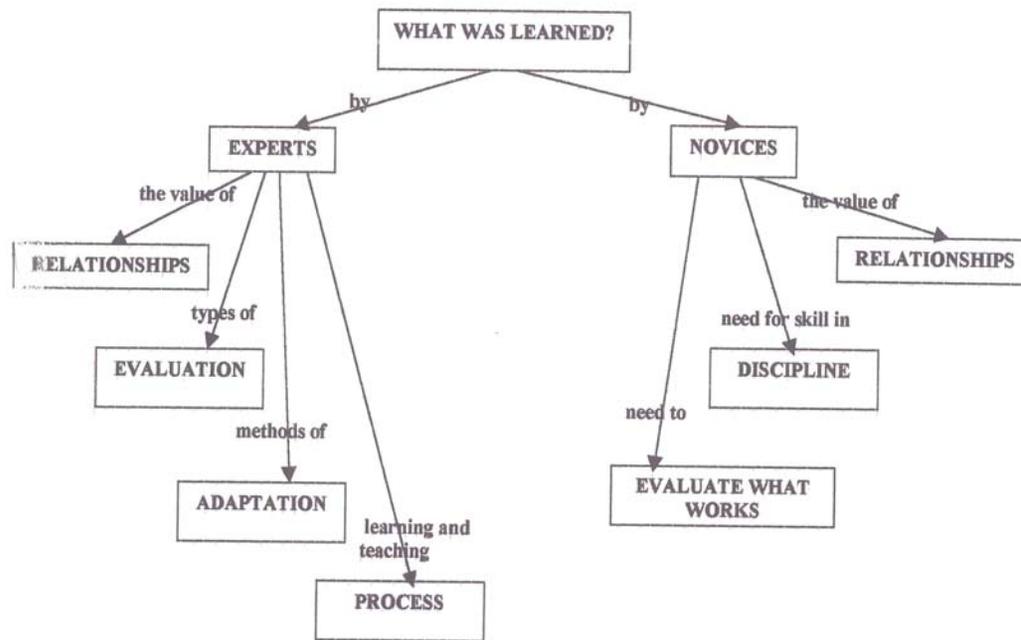
The focus in this section centered on presenting the findings to the second research question: What makes learning experiences meaningful in the context of practice? Themes that emerged from the coded responses to the interview questions of both the novice and expert teacher participants pertaining to: what was learned; connections that made that learning meaningful; and the teaching practice behavior that was affected, are depicted in Figure 4 as the presentation organization of these findings.

The process of reflecting upon their learning that the interviewed participants engaged in to share about their experiences yielded, in its own right, critical reflection and self-evaluation. The teachers were asked what was learned that related to their work or experience, what was most valuable to them, if they had an ‘ah ha’ moment in the learning, and if they felt strongly or got excited about anything they learned. Additionally they were asked what encourages them to do a good job with their students, what they value in teaching, to describe a recent positive incident, and to reflect upon and describe an outstanding teaching situation.

The findings from the expert teachers are grouped around the four general themes that became evident in the expert teachers’ responses to the interview questions related to this research area. These themes are: relationships (with students and colleagues); evaluation (of students and self); adaptation (of practice using methods, strategies, and tools); and process (of how they learned to view teaching as a process and, in turn, teach that learning is a process to their students). Critical reflection and self-evaluation as is depicted in the choice theory model, guided the explanation of the findings as was described by these teachers and was used to illustrate the connections

that made the learning meaningful and affected their practice. In answering this second research question some of the findings from the other two research questions may be reiterated and appear to be confirmation of the concepts presented within this view of critical evaluation and choice theory. These findings, from the responses to question 2, are presented in Matrix 2 (Appendix N).

Figure 4: What makes learning experiences meaningful in the context of practice?



## What was Learned?

### Expert Teachers

As teachers experience their own learning in the context of practice, they assign value to each experience based on their personal perception of that experience. The experiences may, after the initial perception, align or conflict with their individual values, beliefs, or habits of mind. This conflict or alignment of experience results in organization or reorganization (creation) of behavior and is decided through critical reflection and self-evaluation. To further elaborate, if a conflict or disequilibrium occurs, then it is necessary, in order to be in effective control of ones' behavior, to reorganize the total behavior: feelings; thinking; physiology; and acting, to realign with individual goals and expectations or, essentially, what one wants to achieve with their behavior. With this overall process in mind, the following is an examination of the findings from the interviews with the expert teachers.

### Relationships.

The findings reveal that learning the importance of developing relationships did not only just include their relationship development with students. The expert teachers learned the importance and value of developing relationships extended in all directions – colleagues, students, administration, and business community - within and outside the classroom.

One long time teacher reflected upon what he had learned from his practice with regard to the importance of his relationships with students. The value that he places on

the quality of treatment of students is aligned with his personal beliefs and is born out in his behavior.

...things which I looked at very black and white before having my own children, and now having children of my own, sometimes things that we do, there's a big gray area in there. And it's, it's helped me to appreciate a little bit more, how everybody is a little bit different and, I try to treat all the kids the way I want my kids treated themselves, and I think that probably the biggest thing that has affected my teaching is the fact that when we had children of our own. (#5/E/29)

This teacher seemed to place almost equal value on the job that he did developing relationships and the job he was charged with to develop students academically. He went on to share that he learned not to judge the job just by the test results.

I'm out in the yard, mowing my grass or whatever. I've had students drive up and talk to me that I taught 20 years ago... not always the kids who made the A's, it's the kids who struggled and were, quote, the problem kids, but they came back... they said you know, when I was there, I was a bad kid, but I realize now, that you were just trying to help me. And they came back and thanked me. It's rewarding, and you don't always get it immediately, sometimes it's further down the road, and that's where, I don't think that we can judge how well we are doing in schools strictly by the test results. (#5/E/29)

Several of the expert teachers who had experienced a wide variety of students over the years discussed how they learned the importance of developing the relationship with the learner. They felt that the quality of the relationship helped to facilitate their teaching and the students' learning. As a result, the value that they placed upon developing these quality relationships with their students impacted their teaching behavior and practice. One teacher had previously taught exceptionally behaviorally challenging students who proved difficult to allow relationships to develop and consequently were difficult to teach considering the defense mechanisms that they used.

She could see a striking difference in how much more she was able to help the learning disabled students currently in her charge, through their allowing her to form relationships with them. She shared the following when she was asked what encouraged her to do a good job with her students.

these guys are different than any of the other guys I've ever worked with. cause they're, this is the first couple of years I've worked with LD kids as opposed to BED kids, so they are different, but they're more, they let you in more. They talk to you more, they let you know that they're worried, and their behavior, they don't have to show everything through behavior, they can use words as opposed to the BED kids. And I like that. And then they are also capable emotionally to accept help, and see how if A happens, then B happens, and then you get the grade. They can make that connection. And that's really different from what I'm used to. And they come back and tell you thanks. (#12/E/16)

Another teacher shared how it helped her teaching effectiveness with the students to gain the student trust through teaching that it is “OK for them to make mistakes.” She shared that once the students connected with the concept that they could learn from their mistakes, the defense mechanisms and avoidance of challenging academic tasks diminished. Because of developing this type of understanding within the student relationship, she was encouraged in her practice and continued to work for the students to ‘bloom’ (#2/E/21).

Teaching that mistakes are ‘OK’ to students on the one hand, and also being involved in a teacher development supervisory role presented, at times, a conflict for one expert teacher. She learned that she had strong negative feelings toward teachers under her supervision who were not willing to admit their mistakes and try to learn from them. This supervising teacher had observed the negative impact that the lack of recognition and willingness of teachers to accept responsibility for changing their ineffective teaching

behavior had upon the students' performance. In order for this supervisor to align these negative conflicting feelings with her beliefs and reorganize her behavior to effectively deal with the situation, she had to critically reflect and choose behavior that would help her to develop her relationship with those teachers in order to assist them. Helping these teachers was an expectation. After this reorganization and alignment, she was able to address the formative changes with them that needed to be made in their teaching practice. Here is what she shared when she was asked what she valued in teaching practice:

honesty ...with yourself about what your deficits are, what your weaknesses are. I'm not the best speller in the world, so I'm gonna tell you; I'm not the best speller in the world...know their weaknesses. Know their strengths. Capitalize on their strengths. Improve weaknesses. But don't-- what really drives me...is that a teacher may have a weakness that everybody knows about except the teacher, and then that in turn, affects kids negatively...not providing what the kid needs to be able to produce the product. Then, that's a weakness. She needs to identify that, and not affect the kids. If you do that, that's pretty low on the totem pole, I mean, you've hit rock bottom in my opinion. I would admire a teacher more that says 'I'm having a hard time doing it, or I need help, or this is what I'm doing, do you have any suggestions, or can anybody help me?' Or however she gets help that admits to it and the kids don't suffer. Then, a teacher, and a lot of it is common more to teachers that are retiring-- they're tired, they're done--who just keep using the same tests no matter what they're teaching, it's the same test they used twenty years ago. So they're not willing to...change to move with the kids. If a teacher sees that it's impacting the student, then she should do something, even if she felt she had a skill that you've identified that she doesn't have. If she looked honestly at herself, and say, if I only have ten kids who make an A in my class, what is wrong? What am I doing, and what am I not doing, and she needs to be honest with herself about her skills. (#12/E/16)

The relationships that were established by another teacher of exceptional children helped him to do his job and to help his students more effectively. He was responsible for transitioning students into less restrictive settings in the school (e.g. out

of self-contained classrooms into regular classes) and into work situations in the community. Establishing relationships of trust and support with the teachers, business community, and students enabled him to place students where they could be successful which encouraged him to continue these efforts in his practice. Regarding the development of relationships with his students, he shared that he felt that good teaching means not just knowing content. Part of teaching is establishing a relationship to determine what the student needs and is capable of doing. Establishing relationships helps him to work with the students' abilities and develop their individual program around their strengths and needs.

you had to take a real quick snapshot of what that kid was. It'd be like the first day of school, walking into a classroom of kids and not knowing anything about them at all. So, it was learning on the fly. But, once you establish that relationship, you're obviously going to have a much better idea of what that kid can do. (#7/E/12)

Teachers who have learned that teaching is not just knowing the content, that relationships of all types are important for student success, know that their specific behaviors toward students strengthen or weaken the relationship. When teachers have personally decided that relationship development is something that they perceive as important, place value upon as a goal, expectation, a belief – then they critically reflect and self-evaluate their behavior, their thinking, acting, and feeling to create behaviors to achieve the goal of strengthening these relationships. One expert teacher shared that she learned what an impact her voice tone with students had upon how the students (and other staff) perceived her and, in turn, affected the relationship. As a result, she began to

get in the habit of monitoring her frustration level with individuals because this frustration played a part in the voice tone that she used (#1/E/25).

As has been stated earlier, as teachers experience the daily routines and become more comfortable in their roles, using methods such as reflecting upon critical incidents, engaging in collegial discourse to dialogue about competing interpretations, examine evidence, and discuss alternative points of view, they begin to validate themselves in their practice through what is being communicated. One such example was shared by one of the expert teachers and included his reflection upon the importance of sharing a student incident with a colleague and what he learned from it. This exemplifies how teachers' relationships with each other play an important role in affecting the behavior that they choose to practice and how learning is made meaningful.

Two of them (incidents) are confrontations with students. One that I escalated, and one that I de-escalated. And how I handled them both really affects how, the one that I didn't handle was certainly escalated in not a very good situation where she ended up pushing me. It's because of the way I approached her. I was very confrontational. I was in her face. When she told me to get out of her face, I wasn't willing to move. I was very hard headed and stubborn with that. Once again, I remember talking with ... (a colleague) about it; and going back ... (she said) you could've asked her to do the same thing, but from a different angle and a different level and how much that would've changed the situation. I think about this often; what is your goal. My goal was for her to leave the classroom. Now that she said \_\_\_\_\_ to me, that was some thing I encountered that kinda stirs your feeling. But that's not what you want. (#7/E/12)

### Evaluation.

Evaluation plays an important role in the life of any individual involved in the education profession. Evaluation and its importance is the focus of what these teachers shared that they had learned. This evaluation involves critical reflection could be that of

themselves in their practice or of the evaluation of students and how the behaviors that they, as teachers, chose to practice impacted student performance. Ultimately, this evaluation and its resulting alignment of behavior with goals and expectations is a connection that makes learning meaningful and affects the teaching practice. One expert teacher shared the learning from her self-evaluation of her first year of teaching that impacted her then, and for many years to follow. She is now in a position to supervise initially licensed novice teachers and draws from this learning experience and connects it to her current practice.

... and that's why I am an ILT coordinator, because when I came on, ...County back in March of 1976, I was, not only a brand new teacher I was barely 21. I was given 3 classes of Spanish, one, two, and three, and 2 classes of history. I had absolutely no clue about anything. Fortunately I had a teacher who was really helpful to me in the history class. She helped me level the work and so forth and so on. So I wrote a really long letter at the end of that year, to ... County Human Resources and cc'd everybody I could think. And wrote and said, you have to institute mentoring, it's not only necessary, it's the only way this profession is ever going to survive. And I put down about my own experience, and 3 years later they started the mentoring program. It wasn't because of my letter, I know, but I'm just saying that I felt so strongly about it, that I just, it was a 2 page letter all about documenting the new teachers that year, and what a hard time they had all had. So when all this came about, mentoring became a formal thing in schools. And I of course became a mentor, and then when the State Department put the product and all that, I became the ILT coordinator. (#6/E/25)

The findings show that expert teachers use self-evaluation in and of their teaching practice to determine what, specifically, is affecting student performance and then adjust their behavior to improve the performance. Several teachers in the study shared that ongoing evaluation of student performance utilizing a variety of methods is good practice. Good learning reflects good teaching and evaluation is a tool to gain

feedback from the learner in order to make necessary modifications in teaching to the learners' needs. Teachers regarded this evaluation process as a tool to help them teach more efficiently, covering more curriculum and content, in a lesser amount of time. (#6/E/25, #7/E/12, #3/E/7)

As a part of one teacher's staff development experience that was viewed as valuable, the participants were questioned by the presenters as to the reasons behind the choices or decisions they made in deciding upon activities for instructional purposes. This active process of reflective evaluation is an example of learning in action and making a meaningful connection between learning and teaching practice behaviors.

...the other neat thing was working hands on with the kids. A lot of times you sit in workshops and you try to think back to the kids that you have. Well, we had materials there. You're job this afternoon, is to design a lesson for x student. So, you had to put together, it had a lot of support staff too. It wasn't just on instructor, it was like three or four instructors that would circulate around, and say, well, why are you doing this? And you would give them reasons for it. But the hands on, and then actually being able to apply it...they had a wide range of kids and ability levels, and that was another huge benefit, to actually be able to apply it. (#7/E/12)

#### Adaptation.

Much of what was found to have been meaningful learning connected to the participants' practice because of these expert teachers' goals to meet the learners' needs. Of the experts interviewed, all of them were working in some way to help build capacity in novice or less experienced teachers. Therefore, they also applied their knowledge to help facilitate the learning of, not only their students, but of colleagues. Expert teachers were able to reflect upon their pedagogical content knowledge, a compilation of all the essential knowledge bases, and draw from prior experience to

make use of the tools, strategies, and methods with which they were presented during professional development sessions. They made these connections of meaningful learning by being aware of their goals and what they wanted from their teaching practice. They assigned value to the information and experiences in the staff development session and critically reflected, self-evaluated how they could reorganize their behavior and align these new concepts with their practice. Expert teachers were found to be able to adapt: the methods used for presentation of content; the expectations for academic and behavioral performance including discipline techniques; and the structuring of the learning environment in the classroom according to the composition and dynamics of the learners and their needs. One teacher verbalized the time that this realignment takes when she was asked how she used the information from the staff development that she attended.

I haven't used it all due to time constraints. Time just coming in and it takes time to re-group yourself and reorganize and say, okay, I'm going to run my classroom this way now, starting today. But when you want to do this, and three to four different things, you feel need to happen at the same time, just getting that time to do it. (#12/E/16)

She also shared that she has learned that teachers need a variety of tools in order to accomplish their purposes. At first, she was not at all interested in attending the staff development session that she was reflecting upon. However, she recollected that once the presentation got underway, she took out sticky notes and began to write down all the meaningful connections that she was making from exposure to prior learning in practice that had come from the classroom experience as well as learning of educational theories. These connections were the actions that she would eventually take upon

implementing the new concepts, tools, strategies, or methods to help her learners.

(#12/E/16)

When asked what she had learned that related to her experience one teacher shared what made her learning meaningful was the modeling of the method being taught to her. She was being taught how to set up project based learning in the classroom. The presenters of the concept guided the teacher participants through actual development of lessons and then modeled how to facilitate the lessons to meet the diversity of student needs so, in effect, leveling the cognitive level of the lesson to adapt to the classroom composition of learners.

...being modeled for us how they want us to teach the students and I've learned best from examples and from seeing it done and that was just a great experience for me. They didn't come in and say okay this is how we want it, they went through the process, and at the end we kind of reflected back, and it was an eye opener for me... Working out our projects, our curriculum, we actually went to Lake ..., actually one of the other things they modeled for us is always ... modeled for us. They always kept telling us do a lesson before hand, to practice it, before you do it in the classroom, and so, they gave us a lot of time to do that, to work out lessons, to write up the detailed lesson plans, and to actually practice them, before we did them with the students. We went out to Lake ... and did the same thing, and that was the more "AHA" moment because they did a very simple project, that they said was for the 10th grade, and I was like, I was shocked, because I thought, this was too easy for the 10th grade, but the way it was facilitated was what made it more. (#3/E/7)

Another expert teacher cited the modeling of teaching methods as making the learning meaningful and helping connect it to practice.

...it took 2 weeks, from 8 o'clock to 4 o'clock, it was 40 hours in length before you could work through the teaching out of that book...there's a trainer,...who teaches here and there were about 20 - 25 teachers basically. She taught the teachers pretty much the way we were supposed to teach our classes. So she modeled it, and it was very effective. It

transfers, the students have to work and be prepared when they come to class, or they fall behind. (#5/E/29)

However, this expert reflected upon this situation and noted that there were methods that were modeled which caused him to feel uncomfortable. He disliked the role play and the board work that was suggested as a strategy. Unable to find value in these particular strategies, the way he resolved his conflicted feelings was to simply not choose these strategies to implement in his classroom.

Several of the expert teachers shared methods that they had acquired to meet the students' needs and this made learning meaningful to their practice.

One of my favorite things to teach is social skills and I found a program that I really liked...And that was, I started noticing, that was the only class where I had the best behavior. I had students so on task, and participating, and it was kind of like when I was reviewing my day, and making my schedule, I'd be like, oh god, first period, oh no, second period, sigh, social skills, it was so nice. I started thinking, well, why? How you go back, and you just realize it --we role played. And obviously, they are so social, they were able to get out of their seats and be silly sometimes, and yet they were able to...they had everyone's attention, what they all craved, and it just met, all their needs. And it was like, okay, I'm realizing this, how can I use that? And that's been one of the best things for me, that I saw, after realizing that, I saw a change in my teaching. (#3/E/7)

This teacher, through self-reflection discovered a teaching method that met the students' needs. She admits that this discovery was very meaningful and affected her teaching practice.

### Process.

The context that the use of the theme of 'process' utilizes several meanings within the learning connection that affected the teaching practice of these experts. The theme of process for some teachers was learning that teaching itself was a process.

Another meaning held was that of teaching students that learning is a process. One expert of 25 years described how her recognition of teaching as a building process had affected her teaching practice.

...mine is much more, you need to look at the whole picture. You need to look at the whole year, you need to look at the whole process, because mine is so much of a process with my students. It's never, a one-thing deal. There are classes that I feel better about than others, like wow today I'm glad, I think they really got that concept, so good, we're not going to have to revisit that. We can move on. There's other days, where I'm like, oh god, I have teach, re-teach this, how can I approach it again? But to me, it's a whole process. (#6/E/25)

Teachers are perpetually using self-evaluation of their classroom performance and critical reflection to align their practices with their primary goal to promote student achievement and successful performance. One expert described the learning that she connected to her practice by saying that “teaching is a process, not an event.” (#1/E/21). She shared that in the staff development session that she attended, she was able to make connections between what was presented and her prior experience with students when the presenter shared the theory behind why certain methods used, what she called “concrete, tangible, sequenced lessons” worked for the students learning. A part of how she recognized that the learning was a process, she shared what she had observed with regard to the accumulation of a year of a student’s work during a year end portfolio presentation. She categorized this as an outstanding teaching experience.

...at the end of the year and watching \_\_\_ \_\_\_ who is this young man who came to me who looked like he would collapse at any moment, never gave eye contact, never looked up, wrote ‘Dr. Suess’ at the beginning of the year---it looked like Dr. Suess, and sentences were about the same style and structure, he wouldn't answer questions or anything and to see his portfolio presentation. He led a two hour portfolio presentation, articulated very clearly through, had organized

everything. His teacher came in from last year, and we had to continue to put our hands under her chin and close her mouth...the transformation of this man. He had invited her to come. And so he made his presentation and was very, very proud of his work and what he had presented. He did very good quality work. So, to ask me, teaching is a process, not an event, and I got to see the end result of a year's time because you have to bring it to a closure somehow. And to watch the pride of that that student had, that was the teaching of a culmination, of everybody working hard to get him to that point, and it was really very powerful.(#1/E/21)

Additionally, this same teacher shared the experience of observing learning as a process when she described a recent event that made her feel positive about her work. The students had been working on an integrated curriculum project for several weeks that involved literature, history, and personal development. This project culminated in the class traveling to another school to teach a lesson on what they had learned to a younger group of students. The teacher's recollection of the students' climatic teaching event evaluated and brought closure to the learning for this project and highlighted for her just how learning and teaching is a building process. (#1/E/21)

After attending a required staff development, an expert teacher reflected upon the value of the learning from the presentation. He decided that he could readily align the new concepts with his practice because of the beliefs that he held about teaching and the connection that the new learning made with his prior knowledge of the learning pyramid. He said that he had been doing most of what the presentation taught. However, the connection that he made to his practice was taking his instruction to a level where he viewed himself as a facilitator and the students were discovering what they needed to learn in the process that he guided. By implementing the process

approach to teaching taught in the staff development, he structured the lessons around activities to lead the students to find the answers to the problems. (#5/E/29)

Another teacher shared that the learning that she experienced and connected with her practice was that of group process learning implemented from staff development on project based learning with students. She decided that utilizing the group process with her students helped meet their needs, both social and intellectual, through the interaction during the activities that she structured. She decided to lecture less and facilitate more by guiding the students' learning with lesson plans designed in detail, practiced, and utilizing a questioning process that, based on student feedback, could help her assess their understanding and ask more questions to lead to deeper thinking on the subject. (#3/E/7)

### What Was Learned?

#### Novice Teachers

The findings from the novice teachers and the meanings that they made from their learning are grouped around the three general themes of: relationships; discipline; and evaluating what works. Choice theory and critical reflection guided the explanation of the findings as described by these teachers and was used to illustrate the connections that made the learning meaningful and affected their practice.

#### Relationships

The theme of relationships described by the majority of the novice teachers centered around how they wanted to make sure that the students knew that they cared. It was important to each of these novices that they conveyed a level of caring to their

students through a variety of behaviors. One novice shared that she makes it a point to attend IEP (Individualized Education Plan) meetings for her students. Oftentimes, there is time spent in preparation for the meeting and the actual meeting can last for hours depending on the situation. This novice experienced a conflict because she holds the belief that more teachers should attend these meetings. However, her behavior and practice was aligned with her goal of conveying that she cares to her students by routinely being in attendance and contributing at these meetings.

I mean, there are weeks when I have three or four (IEP meetings), and there are some weeks I may not have any, but unlike any of the two years I had prior and I go to them. I just have a real problem...I've been to many IEP meetings where I'm the only teacher. And I just have a real problem. We need to care about our students. I mean you have to or else you certainly wouldn't be doing this...I don't think I've been to every single one, but ...I think the parent needs to see the teacher and needs to see that you care. And the student needs to see that your taking time to do this and if you can offer any input; I think we have a real problem here with that.  
(#10/N/3)

She went on to further describe other practices that which are her effort to communicate her caring for her students.

I think of myself ...that I respect my students, in fact that was one of the interesting things when I did my ILT report portfolio... through my reflections, I think I wrote that I really try to respect them. I try to treat them how they would want to be treated. I'm not very negative. I try to be positive. And one of the things on my final evaluation that the assistant principal...can see that you respect your students, and I was really happy to see that what I felt that I wanted to do is really what's taking place. And I try to I truly try to learn about my students. If they're involved in something, especially the lower functioning, no one also may be involved or care and I go to athletic events, I went to the choir concert. I had a number of students. And they really like that. They comment when they come into class 'did you like it?' So I think I'm a teacher that really cares about what's going on, for the most part... But for the most part, I want to be a teacher that she really cared what happened, she spent the time to try to do a good job. I guess that's it. (#10/N/3)

An experience that another novice recollected and drew from to relate to students happened during her first year of teaching. This situation occurred with a student who she was put in charge of walking to the office after he was kicked out of another teacher's class. As they walked he shared his feelings with her and she was able to relate to him in a way that she had not, before, connected with a student. Her goal to be a good role model to students was aligned with her behavior in this situation. As she reflected upon the incident, she shared

One of the things that will really stick in my mind forever is the first semester that I was working and I had that extra class that I went in to help with other teachers. One of the classes had a young man in there who, gosh, everybody in the school knew who he was and he was not very pleasant... he shared things with me. I had never talked to anybody like him before. We just ended up having a great conversation about...and he confided in me and told me that the only time he felt like he was happy.... That's the only time that somebody has really stopped to listen to what I wanted to tell them personally... from then on, that kid, he looked for me. Sometimes I'll have these students who behave the way he did, and I think well gosh, maybe they think the only time they're happy is when they're... and maybe I need to be an example of how you can be happy and not be ...and I go back to that role model thing. I'm always thinking about how I can shed a little light on their gloomy days. (#9/N/2)

One teacher recalled a conversation that she had had with her colleagues about the teachers that they experienced as students. The connection between her experience and her beliefs are reflected in her comments. Her teaching practice was affected by the beliefs that she held regarding how she wants her students to experience her as their teacher.

I remember a few very good teachers I had, but never could I remember a teacher that I really connected with, that I thought really cared above and beyond what they were supposed to do. I thought they did a good job, but I never thought they really truly cared. So, I got into this cause I care, and

I try really hard to let students know I care...give them the benefit of the doubt when things are going bad. (#8/N/2 lat.)

The emotion with which the novices spoke about how they cared for their students was apparent as can be noted in what this teacher shared regarding what encourages her to do a good job.

For the afternoon group, what motivates me is just their desire to be the absolute best they can be. I really see that. We compete in a national competition, and we fax in their scores...they did that test on Monday, and their scores were out of this world. So, yesterday, I had little Smarties on all their desks. They just... want to get better. Who wouldn't want to teach them?...in the morning, what motivates me is that a lot of times, I think I am the only person or the teachers in this building are the only people they're going to see that they know care about them. And some of my students wear the same clothes every day. I'm going to try not to cry. And, I just love them. (#9/N/2)

Another novice spoke to the importance of developing relationships when she shared an experience from the first days of working at her particular school.

I love our students. We have a really good group of kids. Last year was very challenging for me, because I came in and the kids were very frustrated because they had been through so many people. And in the 3rd day I was teaching, dealing with all these behavior problems... I was very frustrated in the classroom and one of the students, kind of stopped, and said to me, are you going to be here for our graduation? And it occurred to me that part of the reason they were testing me as hard as they were was because they had been through so many people and they needed that commitment, somebody who was willing to stick around. And that, one incident, has kept me going and kept me going a lot last spring. (#4/N/1)

### Discipline.

Well I mean, when I first started I was kind of doing my student teaching. I had a problem because I was so young and I was student teaching high school and I was only a few years older than they were. And it was very difficult for me to be as firm as I needed to be, and have the backbone that I needed to have, and have that ...presence that you have to have to manage a classroom, and that was very difficult. And as I said, classroom management is what I struggle with most, but the fact (now) that I'm twice

as old as them helps a lot and the fact that I have developed a backbone and that I have become the kind of person that can be firm. (#4/N/1)

This quoted novice expressed conflicted feelings about her ability to manage the classrooms and discipline students. This concern was repeated among all the novices interviewed. Frustration was expressed by each of the novices on this theme. The participating in the study with the least experience, as relates to time in the classroom, expressed the most concern with discipline. Corresponding to the length of time of a teacher's practice, expression over the concerns with discipline diminished as novice teachers verbalized more about the strategies, methods, and tools that they had found to work in teaching their students. (Adapting to learners' needs, in the next segment, will discuss this concept more fully and how it is related to the teachers' practice.) Novices that expressed distress over their ability to discipline and manage classroom behavior experienced this type of internal conflict because the idea that they held as the concept of how they were able to practice teaching did not align with actuality of what happened in the classroom. The way that they wanted to behave, think, and feel when these discipline issues arose was not in alignment with the goal of who they wanted to be as a teacher. As the novice self-evaluated their classroom practice and reflected upon the skills with which they are equipped to handle discipline issues, these skills prove to be inadequate. This lack of ability to adequately discipline students causes frustration and discomfort for the novice in interactions with the students, administration, and sometimes, parents.

Skill in disciplining students is expressed by the novices as an area in which they are deficient. An additional hindrance to developing proficiency in this area is that it is not usually a skill that is specifically addressed in teacher preparation programs. Novice

teachers do not have the training and are not able to practice developing skill in this area until they are isolated with the students in the classroom. One novice shared just how valuable the training in discipline was that she had been given during her student teaching semester. Of all the novices interviewed, she was the only participant who had gone through this workshop. When she was asked about learning that related to her work and experience she shared

I would say that I've been to one staff development that I use on a regular basis was ...discipline. And I don't even use it to the extent I did my first and second year, but I still use some of the stuff...basically this is one philosophy--that students have a choice. They can choose how they behave and when they're doing something that's disruptive or out of line, I offer them choice; you can continue doing this and these are the consequences; or you can choose to do this, and they make that choice... I feel, I don't know, it's just kind of a freeing thing to give them responsibility for their actions. So I use that in my discipline...It's really helped me a lot because I don't feel like I have to pull and pull and tug. I can just say, okay, you've made your choice. And lot of time they'll just verbalize their choice; I'd rather leave, I'd rather go to the office. And I can say, okay, you have that choice. (#14/N/3)

These challenges with which the novices are presented, with regard to discipline and management of student behavior along with the other demands of the first years of teaching, can be overwhelming and can cause immense feelings of conflict within the new teacher. As a result, often the new teachers do not know where to turn. Expressing her experiences with discipline difficulties, this novice shared

I would, I'd still like to get more involvement, like parents, get more parental involvement...I had, as the year has gone by, one of my classes was getting a little out of control. And I did get administration in there, and I see a lot of changes since that happened. So I am working on trying to get more people involved in my classes, and parents involved, but it's kind of hard sometimes. I'm also coaching basketball and when you don't get home until 10 o'clock at night, it's made it pretty difficult. (#11/N/6 mon.)

After a period of time, the details of how this novice began to gradually incorporate her own structured policy to address classroom behavior became clearer to her. She had a picture in her mind of the way that she envisioned running her class upon starting this first teaching position, but as she states, she was not sure of how to enforce the consequences of behavior infractions.

Um, well, I'm going to change. With second semester coming, there've been things that I've thought, well this just isn't going to work, this doesn't work right, and I thought, well with second semester coming,.. I'm going to, they'll have had a week and a half, or 2 weeks break. I'm going to just re-emphasize what rules I really want obeyed and have, at the beginning of the year, I told them what my rules were. But I didn't tell them what the consequences were going to be and now I'm prepared for, if you have 3 tardies, you will be written up. If you eat or drink in my class, you will have lunch duty. If you don't attend lunch duty, you will have after school detention. If you don't attend after school detention, you will be written up, and there will be a phone call home. I knew how I wanted my classroom to go when I first started, but I didn't really know how to enforce it. (#11/N/6 mons.)

She had reflected upon her behavior within the role of the classroom manager and critically evaluated the teaching behavior, her thinking, feeling, and acting, that she had been practicing in her first 6 months on the job. Admittedly, she was conflicted in her ability to align the picture of the teacher that she wanted to be with the behavior choices that she was making in response to her students. She described a plan to change her behavior so that, in response, the students will change their behavior. Her goal in this endeavor was to match or align the picture of the teacher that she wants to be more closely with her practice. In her explanation of how she arrived at these decisions of what to change, this teacher shared that she had received some guidance from a colleague.

I think that I've learned what I have to do to try and enforce it and be consistent about it. There is one thing that I did change in the middle of the year and that was if announcements come on over the intercom at the end of 3rd hour, and my kids used to talk through them, and I would say, you guys please quiet down I can't hear the announcements, but I never really gave them a consequence for what was going to happen. So they'd be quiet for a couple minutes and then they'd start talking. It was just so loud in there, and the teacher I share a classroom with, she actually said, you know what, if you would give them lunch detention they won't talk. So, I started doing that and now all I have to do is say, I need it quiet for announcements and they quiet down because they know they are going to get lunch detention if they don't. So there have been little things like that, that I've changed, or modified, or made consequences for. I think that's the biggest thing, not just telling them this is how it has to be, but if you don't do this, this is what's going to happen. (#11/N/6 mons.)

Novices, without intending to, potentially create situations with students that require intervention that, given experience and or development training, could be avoided. One novice teacher, who had several years of experience working one-on-one with students, but no experience working with classroom groups shared her thoughts after attending a staff development session as to what she learned that was eye-opening for her in reflection upon her teaching behavior.

Those were the moments that I had the most emotional reaction, is when I saw something that you are not supposed to do, and I said, oh that's something I do, I do that all the time, I do that every day. And it's been an easy change, but it's definitely been very deliberate and something that I'm constantly aware of. I had an "aha" moment in that I, previous to going to that conference, was very bad about either standing right next to the kids that need the most help, or assigning them a peer tutor all the time, constantly, you know, make sure you help them with this, make sure he gets this done. Whereas, since I went to the conference, I've been trying more to let those kids know that I'm available if they need help, I'll be over there. You know, make sure they understand they know what they are doing, but then not stand beside them to make sure that, you know, not to give them unsolicited help because that's an insult. (#4/N/1)

These revelations came after only a few hours of staff development that specifically addressed teachers' behavior toward students. Teachers need the opportunity to make these critical connections between their teaching behaviors and their beliefs about their practice in order to promote their development of expertise.

Novices admitted that they place limitations upon what they are comfortable doing academically and the types of risks that they are willing to take with their students because of discipline issues that might arise, in what they call 'unstructured situations', for which they feel they are not sufficiently skilled to handle. The majority of the novices interviewed commented that they are not comfortable taking risks to try ideas from staff development. One novice stated that she felt that she was not 'established enough'. (#10/N/3) Another stated that she was comfortable using the ideas with her 'honors students, but not the lower academic students'. (#9/N/3) A very new teacher stated that she 'tried something once, but she didn't feel like she could try it again.' (#11/N/6 mons.) An example of this conflict would be

...and I guess that would be... they had kinda limited what I can do, I think. I think, because I feel like I really have to know what I'm doing. So I'm kind of afraid to experiment with this type of population because if it doesn't go. If I'm not totally structured, then I've lost them. So looking back, I taught Anatomy last year. I could experiment more. Guys this is the first time, let's see how this works. And they would take advantage of that. That would pretty much mean, she doesn't know what she's doing. (#10/N/3)

### Evaluating What Works.

Rather than discussing what they could do to modify their teaching to the various levels of the students that they teach, as the expert teachers do, the novices frame of reference was based upon what they had experienced that worked with their students.

Once they found an activity, method, strategy that worked, they were likely to repeat the same. This discussion ranged from materials, methods, strategies, and tools that were presented during staff development, that they acquired from discussion with colleagues, or that they found beneficial from their personal practice. When the strategies or methods were perceived by the novice to be successful with the students, the experience of using this method was positive and enhanced the teacher's feeling of competence in practice. Once the teacher placed value upon this experience, she was able to align this practice with her behavior and her goals for the students. A positive experience that aligned well would, most likely, be repeated. As an example of a novice learning from her practice what was meaningful to repeat with students,

... because I know from, like from the first and second year, for example, my algebra one class, I tried every way I could really to teach whatever topic it was, just say things different ways, different, using different resources and I know and I saw what worked the best, so, you know, I know how to explain something so that the kids will understand it. I know the best way to explain it based on how they learned it when I did it the first and second time. So, I've been able to cut out some stuff that just wasn't really effective. Um, I've learned more about math, you know, as you teach it. And the better I understand it, the better my kids do. And just, I feel like, I'm starting to feel real comfortable; you know, this is my job. You know, my first year, I was like, man, I cant believe I'm a teacher. I still felt like a student, and I still look like one, you know, so I'm getting to where I'm real comfortable with it. (#14/N/3)

Both the experienced and novice teachers often commented upon how different dynamics from one class to another could have an impact upon their teaching. Novices found it difficult to accommodate the needs of the changing dynamics of the groups. One novice reflected upon what a challenge it had been for her to adapt just to teaching to a group of students rather than the one on one tutoring that she had done in the past.

...you've got to, realize that, when the dynamics change and they are a group, and too, that is a part of teaching them, that they need to advocate for themselves. If you need help, ask for it, and it's there, but it's there if you ask. That has been a really difficult transition for me, and I was honest with that, and upfront about it, when I was interviewing for this position and I know 15 kids doesn't seem like a big class, but to me it is. Yea, when you've gone from 2 or 3...and I am starting to look at them as a class, instead of 15 individuals or however many individuals, but it's been really hard. (#4/N/1)

When novice teachers are presented with strategies to improve student learning, the way that the ideas are presented and, are therefore, perceived impacts whether or not the ideas are put into practice. For a teacher to use an idea, they must first place value upon it. Novice teachers want to be given concrete ideas and specific directions on how to go about the implementation in their classrooms. As these comments illustrate:

The team time thing I knew that I could do it with the honors classes and I could not think, and even I remember jotting down notes while that lady was talking. I did about how I could use team time with them, but still I'm struggling to find what to use it from the lower levels, and she didn't really go into details about, how to, or how not to do anything, it was just giving us ideas, letting us go with it. (#9/N/2)

Encountering barriers to implementation decreases the likelihood of repeating a strategy and later adapting it to students. While on the other hand, trying a strategy or method and having it go well is encouraging and enhances the teacher's feeling of competence. Note in the novice's comments below how she expressed her need for ideas and to observe other teachers. The following was shared when she was asked what she learned from a staff development session.

...a couple things. Number one, it gave us some different graphic organizers you can use, and I found that useful, cause graphic organizers, I had no, other than what I had learned at NC Teach, we did talk about them there, but as a child growing up, I don't ever remember doing a graphic organizer. And I have used those and I think they can be very effective.

The other thing is the sticky notes. I'm going to use it again tomorrow. We're getting ready for midterms. I gave students a review sheet, I said come in tomorrow, I want you to have looked over the sheet. That doesn't mean you have to have done every problem. Look over it, find the problems that look foreign, that you don't have a clue how to begin, try to do them, and if you can't, when you come to class tomorrow, I'm going to ask you to make a list of your questions, and I'm going to have them do them on the stickies. And I'm going to organize the sticky notes by unit, and then Thursday, that's how I'm going to review. We'll go over those stickies by unit. So, that I did learn from that workshop. It's a great way to organize information and figure out where students are confused or not confused... I came out with some ideas. And that's good. I need ideas, I'm begging for ideas, I need time to watch teachers to get ideas. (#8/N/2 lat.)

When asked if she experienced any 'ah ha' moments with regard to her learning during the staff development and to further illustrate connections during practice, this same novice shared

No, I really don't have "ah-ha" moments like that. I mean, I have them in the classroom with students when things are going on and all the sudden I realize why they didn't get it. Then I take what I know and I can use it to help them. But usually in a workshop, I don't do "ah-has" in workshops very easy. I tend to file it and then draw on it later...when they ask that question, and five kids ask the question and that sixth person asks it, and all the sudden you understand why they aren't getting it. And then you go "oh, okay", now that I understand what the problem is, let's look at it this way... unless there's something fresh in my brain while I'm sitting in a workshop, it's not going to connect. (#8/N/2 lat.)

She commented that she tends to "file it and then draw on it later". The value that she perceived these ideas as having and placed upon them, earned them the place of being stored to be drawn upon later. Once these ideas are incorporated into practice, work successfully, and are aligned with the belief that they fulfill the teacher's needs to meet the students' needs, chances are that they will be repeated as behaviors in teaching. This novice goes on to share that the answers to her concerns are not that simple to find. This

is a telling comment that illustrates the frustration with her inability to adapt ideas to her current practice behaviors.

...well, I think we all experience the question of, how do I get students to buy into this? How do I keep students motivated? But I don't know, the answers just aren't as easy as it seems like they should be. That's really what it comes down to. So, you don't get that; okay, I can fix this problem if I just go back and do this. It really isn't that simple. I wish it was, but it's not. (#8/N/2 lat.)

Speaking to the issue of perception and value and how these determine what teachers take from staff development and how they make learning connections, the exact same information presented to two different teachers can have varying impact upon their learning. From the same workshop, a novice of similar experience level when asked about 'ah ha' learning moments, shared this

I think the thing about letting students do some of the work was an "ah ha" moment. I also think she had this thing called the issue bin that you've probably heard of and that was such a great idea because students are always asking questions that are not on topic and it steers away from everything and that gives you a good place to put those. (#9/N/2)

Another novice shared that she was able to make one of the concepts from the staff development work with her higher academic group, but unable to adapt it to use the same ideas with another group. Again, her confidence in her ability to make this concept work has an impact upon her decision to use it. This has to do with the application of the method being need fulfilling for her as well as her students. If she does not feel that the activity will meet her need to feel competent in her practice, the chances of her using the idea are limited.

Getting groups into teams, and having a team concept, and letting them kinda run the class. And, while I haven't been brave enough to do that with my Pre-Algebra students, I have tried that with my Honors Algebra

two. And it has worked very well. They had teams first quarter, and they had a project that they did as a group, and during the class time, I would write on the board just like I do every day, what our agenda is, what I want to accomplish. And at the end of that list, was always team time. And if we got everything finished, then they could have team time and they could spend that time working on homework, working on their group projects, or anything that they felt like was most important at that point. I think that that group is mature and is focused enough to do that. Like I said, I haven't figured out how to make it work with my Pre-Algebra students yet, but I have really liked the team idea. (#9/N/2)

The value that a teacher places upon what activity or method to use also factors in the value that she perceives the students placing upon that activity. If there is a student need fulfilled by using particular methods, that method has a greater chance of being incorporated in to the teacher's practice. By virtue of having value to the student, it aligns with the teacher's goals and needs to be competent in her practice.

There was some ownership...I can't remember exactly what the words were, but there were a couple little strategies for them to take ownership of things. To pick out some things they feel are important that they want to work with. Because of what I teach, Biology, that isn't always... I'm not always able to do that. There are certain things I have to teach. But I've tried to let them pick out things they feel help them the most, that prepare them the most. Especially when we review for tests. I let them pick out which. And we've tried different games and study guides, and I let them tell me, which one prepares you the best? So that's the one I try to work with ... cause some they feel don't work and I need to know that cause I would be wasting my time with that. (#10/N/3)

When asked to describe an outstanding teaching situation, this teacher articulated an experience from a lesson where she was being observed by administration. She found that what worked well with the students was the use of her own visual aids that made the abstract concepts being taught more concrete and tied them to the students' interests about the subject. The satisfaction that she derived from teaching the lesson is obvious from her description. Any teacher would be pleased if students came to her after a lesson

to make positive remarks. She was able, in this experience, to witness even the lower performing student (“she wasn’t always with the program”) connecting with the learning. The likelihood of this teacher repeating this same type of lesson, as she states in her comments, is high due to the degree to which it met her needs and those of her students.

I mean I did do one on Anatomy where I used a lot of visuals and was very time consuming to make these pieces that fit together. And I had, in fact, I happened to get observed that day. I don't know how that worked out, but...It was very, very good. In fact, I had a lot of students come up after and come up and commented on the lecture. Oh, that's good. So I had tried to, I have reflected back on that. I still have those pieces and those will still be used and I've tried to do more things like that where they really can see it, cause it was a subject they had learned in Biology and it was more of a review for us. But they finally said, now I understand. It all clicked together. Yeh, that's when you see those light bulbs go off. That's really exiting...even people...there was a student in the back who, she wasn't always with the program, but she was even getting the answers, and it was so much fun. And the other students acknowledged, hey Martha, that was a good one...They stayed in their seats. I asked them questions, I just didn't go up there and teach it. They, more or less gave me all the information. It was the pieces I used on the board. I had magnets on the back of them and they could really see where things were coming from, and where they were going to...it was about DNA that really needs to be visual. It's so abstract. You don't see your DNA, unless you've got some high power microscope, but for them to really see it. There's so much talk about that topic now too, with everywhere you turn it seems like. With the emphasis on the forensic kinds of stuff that goes on and we teach about that. Viruses is always... this semester is kinda slow for Biology, but we had a lot more relative topics in the second. With viruses, and AIDS and they really get into that. And genetics; they want to see how it pertains to me. (#10/N/3)

This novice was able to make a connection in her own learning of how to better adapt to student needs by utilizing activities that accommodated various learning styles, made the abstract lesson more concrete through visuals and connecting the concepts to prior knowledge and interests. The fact that the lesson met such a variety of student needs

helped the teacher to feel very competent in her practice. This feeling of competence is important in the experience of any teacher and especially in that of the novice.

#### How do Teaching Professionals Connect Day to Day Experiences with Professional Development?

Situated learning theory, as an analytical viewpoint on learning or understanding learning, was utilized to interpret the findings to this third research question. From the writings of Lave and Wenger (1991) and their explanation of situated learning theory, a distinction is made between learning and intentional instruction in that intentional instruction is not necessarily the cause or source of learning and that what is learned is often problematic with what is taught. These authors argue that learning as it normally occurs is a function of the activity, context, and culture in which it occurs. Two principles of situated learning as a general theory of knowledge include:

1. Knowledge needs to be presented in an authentic context, i.e., settings and applications that would normally involve that knowledge and;
2. Learning requires social interaction and collaboration.

As an extension of the explanation of situated learning theory, Lave and Wenger (1991) explain that “legitimate peripheral participation” is a process that is characteristic of and defines situated activity. By this they mean

to draw attention to the point that learners inevitably participate in communities of practitioners and that the mastery of knowledge and skill requires newcomers to move toward full participation in the sociocultural practices of a community. “Legitimate peripheral participation” provides a way to speak about the relations between newcomers and old-timers, and about activities, identities, artifacts, and communities of knowledge and practice. It concerns the process by which newcomers become part of a

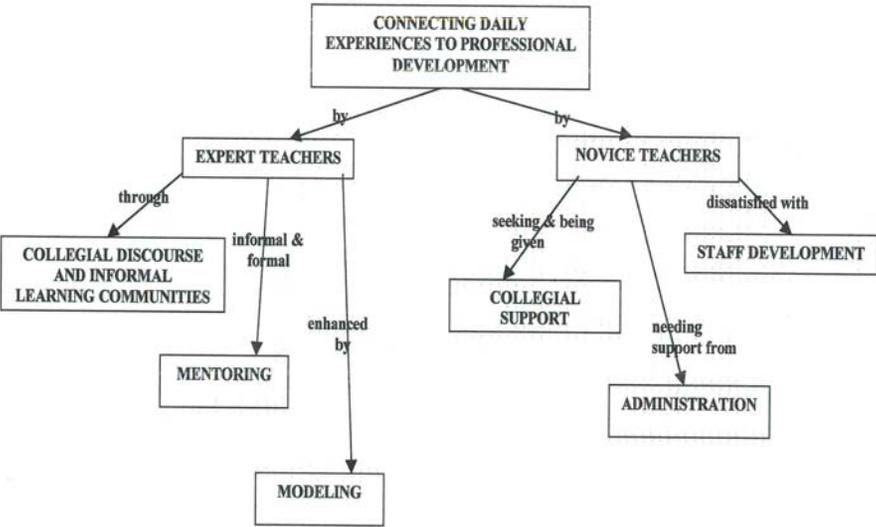
community of practice. A person's intentions to learn are engaged and the meaning of learning is configured through the process of becoming a full participant in a sociocultural practice. This social process includes, indeed it subsumes, the learning of knowledgeable skills (1991, pg. 29).

By using situated learning theory as a lens through which to interpret both the novice and expert teachers' connection of day to day experiences with their professional development, the findings to this research question incorporate the answers to the specific interview questions about: instances when the staff development information was helpful; how the information was used in teaching practice; what role staff development plays in teaching practice; the organization's affect upon using the staff development; how the administration treats teachers; an adjustment period allowed when teaching practice started; a mentor being available; changes in practice since first started teaching; what contributed to the change in teaching practice.

In answering this last research question some of the findings from the two previous research questions are reiterated and appear to be confirmation of the concepts presented within this view of situated learning theory. These findings from the responses to question 3 are presented in Matrix 3 (Appendix N) as an examination of the way teachers transfer and integrate, or do not transfer or integrate, decontextualized knowledge from a staff development experience to their actual practice. The practice context and connection considered here is not limited to just the environment of the classroom, but extends to the overall school and broader system. The factors listed are considered to be those that facilitate or inhibit the connection of day to day experiences to professional development through social learning and legitimate peripheral participation. The discussion of these findings is organized around the themes that

emerged from the review of the matrices developed from the novice and expert teacher responses. While attempting to separate these themes into categories for discussion, this researcher recognizes that the themes are interwoven in both the novice and expert teachers' explanations. The organization of the presentation of findings answering question 3 is illustrated in Figure 5.

Figure 5: How do teaching professionals connect day to day experiences with professional development?



## Connecting Daily Experiences to Professional Development

### Expert Teachers

Upon reflection, teachers shared that they attribute the learning that changed their teaching practice the most, to the day to day experiences with colleagues and their students. Without naming them as such, teachers described learning communities that had been informally established, essentially out of a way to meet their needs, to facilitate collegial learning during the school day. Modeling and mentoring were additional themes that became evident as the experts described how they connected their daily practices to their professional development.

### Collegial discourse and informal learning communities.

While there was acknowledgment from the experts of the isolation that teachers contend with in the course of the school day, there was much discussion about going to a colleague to seek information or to provide support to the less experienced. This collegial discourse manifests itself in interchanges with teachers who work in side-by-side classrooms due to the accessibility that they have to one another. One expert teacher, after having observed a novice teaching, shared his unsolicited thoughts and advice about a more appropriate level of instruction for the group.

First week of school, I walk into his room, and in Science, he's doing space. And he's talking big long words, and I'm going, come talk to me after work. He came down and I gave him this whole set of Science stuff that I was doing. I said look at this, this is kinda the level you need to be doing. You're way over the kids' heads by doing this. And he just went "oh". You think you're in high school, but you're not doing the high school level. That's where I talked a lot about teaching to the middle. I have kids who'll get done, we try to group these kids as close together in ability as we can, but still within that, there's going to be a wide range of kids who can't. He's going, "okay, thank you." (#7/E/12)

These interchanges also take place during lunchtime, during department and grade level meetings, or in the halls in passing. Teachers turn to their colleagues for help regardless of the number of years of teaching experience that they, themselves, possess. One veteran teacher shared how he sought help in teaching a higher level math class that he had been unaccustomed to teaching

Well, I used to teach algebra 3, and there were, in the higher level math courses, there were certain topics that just, I'm not as familiar with because I hadn't taught them, and mainly I would go back to my colleagues and say, okay, let me look at this, and help me out here. What do I need to do? (#5/E/29)

Another recollection of a tenured teacher included her remembrance of her first year of teaching and how overwhelmed she was at the time. She felt that she did not even know enough to know what to ask. She described a colleague asking her

How can I help you? And I said, "well I'm not even sure." And she spent, we would spend at least an hour together, and she would help me. She taught me how to level a worksheet because I had, in my history class, everything from a 50 IQ to a 140 IQ, back then you had anybody. So she helped me to level each worksheet in 3 different cognitive levels. She taught me what that was. She taught me how to test in a variety of ways. I mean, she taught me so much of the real world that I didn't learn when I was student teaching because nobody learns anything when they are student teaching practically. You know what I mean? Not in the real world. (#6/E/25)

Several teachers described a hierarchical structure through which information is disseminated in their school and through which meetings are set up to address issues. This hierarchy, in some ways, helps facilitate communication and learning. Often teachers described discussing "anything that comes up" at informal daily lunch groups. This support provided on an as needed basis is particularly helpful in drawing the

newcomers into the organization through legitimate peripheral participation. Often this conversation is where stories are told on or about one another to acknowledge efforts, tease, and draw group alliances tighter. This expert teacher told how the more experienced staff, knowing the personality differences of the newcomers, used different approaches to acknowledge their acceptance into the organization shared one such example.

... I mean we'll tease... and I tease a lot, about different faculty, we'll bring things out like that. Like the dead fish thing, we even talked about that at PTA, studying the living and dead things and mostly developing dead things. And so, we tell on her a little bit. ... is a great sport, because she gets razzed unmercifully, and she's just always got something that someone is razzing her about. Things that people say about..., are almost always more, head things, more positive things, as opposed to the kind of teasing part. Some of that may be because ... is younger, and she doesn't put herself out there. ... puts herself out there to kind of get razzed a little bit. (#1/E/25)

### Modeling

Modeling was repeatedly mentioned by the expert teachers and seemed to be a mechanism for making connections between professional development and daily teaching practice. Situated learning theory declares “knowledge needs to be presented in an authentic context, i.e., settings and applications that would normally involve that knowledge” (Lave & Wenger, 1991) and having a teacher model a method for other teachers seemed to expedite their ability to connect the new learning to their own practice and implementation.

... when she explained it, they modeled the process that they wanted us to use with the students. Because before that, that really wasn't the way I had taught. I saw how well it worked with the teachers, so I used that in the classrooms as well. In the classroom that I was working in it was Academic Lab, so it was only about 7 students anyway, but I broke them

up into their tables of groups of 3 and 4 and seeing the group process works. And it is just so much better working with a group, than working individually. (#3/E/7)

Regarding discipline, this expert teacher, speaking of the influence that a more experienced mentor had upon her teaching and personally, described that the modeling that was done for her by this person had a profound impact. She commented that “having (teacher’s name omitted) teaching me in discipline, and watching her, working with people, and I mean, that's just really, I think, has had the biggest affect, on my teaching and personality overall.” (#3/E/7)

Another teacher described the way in which he connected the staff development that he attended with his teaching practice. The workshop used the actual tools and methods that he carried back into the classroom. Having participated in the workshop where the actual methods were used and modeled for the participants, made taking the information back to his classroom easier. When asked how the information was presented he replied,

She taught the teachers pretty much the way we were supposed to teach our classes. So she modeled it, and it was very effective. It transfers, the students have to work, and be prepared when they come to class, or they fall behind. One of the things that we did, we did some experiments with bouncing balls, and recording the heights, and then showing the students how to collect the data. And then put the data into a graph, and try to come up with a line of best fit. There were other experiments that we did with temperature change using hair dryers and collecting data, and applying that. Those were areas, and I took that, and I use it in my Algebra 2 class to collect data. The bouncing ball thing wasn't the best of, if you have a small group to work with, but when you have 33, you don't want too many kids running around with bouncing balls there. And one year we had too many hairdryers and all the circuit breakers went out in the math pod. But, I do one of the things now in Algebra 2, and I do it in Algebra 1, where we did, a couple of years ago, when Sammy Sosa and Mark McGuire were in their homerun race. We collected all the

information through the season and then made a prediction equation as to how many homeruns they would end up with. And we were, on one we got it right on the exact number, and the other we only missed by one. As I said, ... we used the textbooks and that's what she taught us from, as far as doing problems that we would end up teaching in our classrooms. And so, there was, everything that we did we would use and, it's just, as in anything else you have to, there are certain things that you are more comfortable doing I believe. (#5/E/29)

### Mentoring.

Mentoring takes on a variety of forms in the descriptions that the expert teachers provided. Some individuals referred to mentoring as coaching. There are structured mentoring processes established by the school system that involve the training and certification of mentor teachers. Not all of the participants who admitted to mentoring novice teachers had completed a mentor training process. However, six of the seven expert teachers who participated in the study were involved in, either formally or informally, mentoring, coaching, and modeling teaching and discipline methods for other less experienced teachers at their schools on a regular basis. As an example of the diversity in mentoring, one of the expert teachers, reflecting upon being mentored informally during his first years at his school, shared the following recollection of the experience:

I had an informal, well I guess he was an informal mentor cause we didn't have to do any documentation. My first year here, ... who was a VI teacher at the time, was my mentor. He just made sure, if I needed something, he helped out with something. But we didn't have sit down sessions, and evaluate... no tape recorder. (#7/D/12)

Interestingly, through the course of the interviews, and while not a direct question, five of the seven expert teachers shared that around year seven of their practice that they began to seek opportunities to help support novice teachers.

One of the expert teachers who also worked in an administrative capacity shared her school administrator's view of mentoring. She explained that the teachers who were hired at this particular school were told that they would be teaching an integrated curriculum. However, when challenges arose either behaviorally or academically, these teachers typically reverted to the practices that were in their comfort level which most often included more traditional teaching (lecture, notes, worksheets) as a response. To address this problem through a mentoring process she went on to say

Our position is mentoring them through because they all come through saying, "yeh, yeh, sounds good. Don't want to lecture, don't want to (teach from a) book, don't want to give tests", but you just consistently push and prod them into using the learning cycle approach and encouraging them to continue to do that. So it's a more of a coaching position ...(#2/E/25)

Speaking again to the diversity in the ways that teachers reported offering and receiving mentoring, an expert shared his feelings about the need to support novice teachers and the efforts that he had made to do so. His comfort with offering help to the novice had evolved from seeing those who he felt were not supported leave the profession.

I feel more comfortable doing that now cause I see if I don't. I'll phrase it, you can do what you want, if you're looking for advice, I'll be more than happy to give you some, but I don't want to feel like I'm telling you what to do. But if you're looking for something, here's what I would do. If you don't want to hear it, that's fine. What happens is, if you don't address it right away, it just gets worse. I see right now that we're in a position where teaching is hard enough and you don't get enough quality people in here, that I just feel like I'm getting old when I say I want to keep them around, so how can I help them? If you don't then you're looking at training somebody else. Teaching with a cooperating teacher has really emphasized that because this is the fifth year we've done it, the fifth year we've done it and this is the fifth teacher I've had. (#7/E/12)

Still another view of mentoring from an expert teacher who was in the joint role of administration, emphasizes the importance that she felt about offering a mentoring process in her school. Her view on the significance of mentoring had been established from her personal experience, but the loss of the majority of her teaching staff in the previous year that she refers to here, reaffirmed the value mentoring holds for her.

Pretty much, ... and I, are the mentors. When we split up, she does the discipline, and I do the curriculum, and so she'll observe classes. Like we had a teacher who was having trouble, so she observed the class. And I sit in on the 9th grade curriculum meetings and I sit in on my own curriculum meetings, for the year 2 students. But, it would be nice if it was a more structured mentorship. And I think at some point, I keep having fantasies that things will, sooner or later slow down. But I think that teachers are getting more attention this year than they got last year. Last year, teachers got no attention, I mean, literally, you went in your room, you did your job and you left at the end of the day, and that was pretty much it. (#1/E/25)

This expert clearly felt that teachers leaving her school was a consequence of not providing the support that they needed through mentoring.

### Connecting Daily Experiences to Professional Development

#### Novice Teachers

Novice teachers consistently expressed that they derived most of the ideas and the answers that they needed to improve their daily practice from more experienced colleagues. The accessibility that they had to these teachers who work next door to them, who were in the same department, or who they approached due to having the reputation of expertise in the novices' area of need, helped the novices to get answers to their issues and concerns on an as needed basis. Teachers were asked about the changes in their practice since they first started teaching; and what contributed to the change in their teaching practice. The novices described their need to discuss the specifics of the

problem that they were having with someone who could give them assistance, guidance, and direction contrasted with attending a workshop where they would have to listen to much that they felt was irrelevant to their situation. Novices had difficulty distilling and sometimes even interpreting the importance of the information that was shared in the staff development sessions that they discussed in reflection, no less relating it to their teaching practice. So, it was beneficial and brought them a step closer to utilizing the information after discussing their needs with a more tenured teacher. In effect, the novices, as had the experts, depicted the characteristics of a social learning community. Novices acknowledged overall that the more experienced teachers had looked out for the newer teachers in many ways –the embodiment of legitimate peripheral participation.

#### Collegial Support.

When novices were asked what contributed the most to the change in their teaching practice, they identified their colleagues and gave examples. When asked what she credited the change in her teaching practice since she first began, this novice shared, “I would say it would be experience and colleagues. Those are the two main things, not staff development ... I would say experience, but not just my experiences, my colleagues have been the most influential in my learning, or becoming a better teacher.” (#14/N/3) Another novice shared similar feelings about her colleagues and the enthusiasm she gains for teaching from them when she shared, “my co-workers encourage me to do exiting things, and I see them doing cool things and I want to do cool things. So I think they're definitely a factor.” (#9/N/2)

Even though a mentor was assigned to the first year teachers, other influential colleagues identified may have been the teacher next door or someone in their department. Often the proximity to the teacher was important in getting the assistance and support that was needed in a timely manner. One novice shared how, even though she had an assigned mentor, there was another teacher who was extremely helpful and supportive of her in her first year of teaching.

I also, was extremely blessed last year to have a fellow Chemistry teacher who took me under her wing and really helped me tremendously. We generated awesome curriculum last year. She didn't come back, which is a heart breaker, because of the hours, basically, and the demands of the job, and she wanted to start a family. (#8/N/2 lat.)

This novice told of her comfort with her colleagues and the feeling that she felt protected by them.

I was really comfortable with the math department. I mean, I didn't know a whole lot of other teachers just in teaching, but I knew the members of the math department and those are the ones that I would, my room would be next to theirs, and I ate lunch with them. So, I felt comfortable in that respect. I mean, there was still, I still felt a little, I don't know the word to describe, um...gun shy. Maybe a little at first; not to do anything wrong... And I think my math department did a good job protecting me too ... and helping out...they would help me out if, they would give me copies of their parent letter, cause I had to make my first parent letter. They would give me copies and let me look at that. You know, if some teachers in the department that were teaching the same class were giving a handout, they would run enough copies off for me too. And I remember, the lady that taught next door to me who was kind of an influential mentor... I asked so many questions. And I mean, I could've asked my mentor, but it was just this lady was literally next door. Proximity ... get tired of me sometimes cause it was right after the other sometimes. How do you this, how do you do that? Well, what do you say on parent night to parents? Um, what is your homework policy? And I would ask several people. What do you do about tardiness, and how do you work the intergrade? And the lady beside me, well there were actually several teachers my first year who sat down with me to go through that intergrade. Sat down with me and showed me how to do everything. And it took several times. I don't know of anybody

that gets it the first time. But nobody said "urggh." You know, they were really, really...supportive. (#14/N/3)

Another novice shared how she felt about going to other teachers to get her questions answered.

There is always a lot of support, if I don't know what to do with a certain lesson, I know that I can, especially English, where I feel I'm stronger in Spanish, if I'm teaching *To Kill a Mockingbird* and I don't know what to do the next day to make it interesting for the kids, I can always go up to a couple of the English teachers and say, what do you guys do when you are teaching *To Kill A Mockingbird*? What can I do? And I always get a ton of ideas from them. (#11/N/6 mon.)

She went on to share, at great length, other examples of the helpfulness she experienced from going to her colleagues for support in her learning and drawing from their collective experiences to develop professionally day to day.

I think just telling my problems, what I was noticing in my class, to other teachers, and them giving me ideas and me trying them out, finding out, well this does work, or this doesn't work. I think, sitting at the table with a lot of the other teachers, who have been teaching for longer than I have, when they see it and say, hey, that looks like fun, that looks like something my students would like. It made me think, well, maybe my students would like it too. So I thought, well I'll try that in my class. I think where I get the most, where I pull the most from, is when I go to my mentor, or my department chair, or another teacher in my department, and say, this is a problem that I'm having in my class, what would, what's your opinion on what I could do to change that? So I think I just really pull just from other teachers, and my mentor. I think I prefer learning it from my colleagues. Being able to be in a one-on-one situation, this is my problem, what do you think I could do to change it? And if I try that and it doesn't work, I can go to another colleague and have a conversation with somebody about, exactly what is going on in my situation, how can I adapt it to my situation specifically? And also, when you get that feedback maybe you might want to try this, if for some reason I think, maybe that won't work, can you think of a way to adapt it a little differently that I could use, that might maybe, will work in my classroom. (#11/N/6 mon.)

A novice shared how her observation regarding the support that she feels from her colleagues, her department, and one colleague in particular who is in close proximity to her classroom.

The one nice thing about this ...is our science people work well together. Everyone looks out for everyone, and if there's a problem ... it just seems like the older teachers look out for the younger teachers which is what I like, and they help you if you need any help or an idea. I would think the things that changed me the most are my coworkers, and my students. ...Especially here, I have such good coworkers. I go to them. Mrs.... who is next door to me, I think she's in her twenty fifth year, I go to her all the time especially with how to deal with situations. I don't know if it's as much about subject, as about how to deal with...maybe some of it's knowledge, but some different activities. Now she's given me some labs that she's used. I let her know this is what I'm going to teach. We teach kinda the same thing, but not all the time. And I have things that she's had work successfully and ...even just someone to talk to. She's really good. Students have changed me, I've had to get a lot stricter, or meaner, against my personality. (#10/N/3)

#### Administration.

When asked about the administration's treatment of teachers, the organization's affect upon using the staff development, and if they felt that they had received administrative support in their professional development, the novices had an interesting and wide range of responses. This teacher described how he felt about a process that this particular school system has established in an effort to support beginning or initially licensed teachers.

I have the due date that ...DPI set up, which I think is June something, and then if you fail the product, you have another year to make revisions. That is all the state of ... has asked me to do. That's it. All the rest of this mumbo jumbo with mentors and practice papers...well, first of all, the county says we have to have mentors and time lines. And then our mentor coordinator, not even my mentor, says I have to have these practice papers, and stuff like this and be at all these meetings, and all this and that. Then I get a state of ... licensure. And I have had my job threatened if I

don't attend the meetings. I have had, they have recommended that principals do not retain people, that not meet ...DPI's criteria for licensure, but that don't attend the support group that's stipulated by ... County schools. So it, I mean, what it's infuriating. A lot of things, a lot of people to satisfy. It's just to look good politically. There is no...well if I didn't find value in the things I did, I wouldn't be able to do them, so I have had to dig to find the benefit in this process. (#13/N/2.5)

The perceptions that another novice shared about her experiences were more positive, although, as she indicated toward the end of her remarks, she is somewhat skeptical about the changes that she is promised for next year.

From my perspective, I think I've been treated really well. Anytime I go to an assistant principal and say, I have a problem in this class, can you come in, or if I write somebody up for discipline referral, it seems to get handled in a manner that I'm satisfied with. I know that some people will tend to say, it depends on which assistant principal you go to in terms of whether or not things are going to happen. I've had positive experiences with them. And they've acknowledged the fact there's been a lot of things that I've gone through here that I shouldn't have, as a first year teacher. And I've been told it's going to change next year, so I'm kind of waiting to see if it's actually going to happen or not. (#11/N/6 mon.)

Several of the novices expressed repeatedly, a strong desire to observe other teachers. They felt that observing a more seasoned teacher, who by reputation was known for having skill in the area of their need, would help them to be better equipped to handle discipline problems back in their classroom. They were seeking opportunities to have effective classroom management strategies and methods modeled for them in the context of the classroom. Each of the novices expressed that they were having difficulty getting the chance to carry out these observations and felt that the administration could be more supportive and helpful in facilitating this to happen. One of the very new teachers remarked about another teacher who she knew she wanted to observe that, "he's got really good rapport with his students and I've often told him that I

want to come in and observe him, but I've never had the opportunity to.” (#11/N/6 mon.) Another novice elaborated upon the types of things that she has a desire to have modeled through an observation opportunity in the actual context of the classroom so that she can improve her performance in these particular areas.

There are a hundred and thirty something teachers in this school, I'm sure there is somebody out there --I don't know who they are; that's the other problem. But I can get those names. That's easier to generate than the time. I have begun to get some names and I am going to observe teachers for specific things, like, I'm concerned about the amount of chatter that goes on in my advanced classes, and it's not rude chatter, it's just chatter. I want them to be helpful. And I've tried a number of things with my seating arrangement, and none of them have improved it. I'm going to change the seats once again, but what I really need to do is watch an experienced teacher who teaches advanced students and see how they manage their class. So, that has been very, very difficult in this department. I'm beginning now to realize that there are other teachers in this school who are very good. And one of my goals for this year is to get into some other classrooms and watch. (#8/N/2 lat.)

This novice went on to express her feelings about how much simpler she felt observing another teacher could be made to be with some help from the administration.

I think maybe the administration could, I don't know. I don't really know how much leeway they have, but I think there's probably a little bit more they could do to help new teachers. And I am looking at it from the perspective of a new teacher, and I'm trying to learn as much as I can as quickly as I can. They could make it happen so that I could observe some other teachers, and they could pay to cover my class; they could make that happen. As it is, I'm going to make it happen, but I'm finagling my way into it, because I can do that. I'm intelligent enough to figure these things out. But, they could make it happen so that it's clearly obvious how to go about it. (#8/N/2 lat.)

When asked if the administration was supportive in the teachers' efforts to implement the information and ideas from the staff development, another novice shared

...our principal set up that September workshop. And she, and another administrator were actually presenters. So I definitely think they want us

to implement these quality tools. And they're all about us using them, so I don't think they inhibited us in that way; maybe just indirectly by other factors. I think maybe what I'm trying to say is that they want us to implement these tools, however, there are things that could be changed that are taking time out of our classrooms, that might ... that might affect how much time I have to spend thinking about how I could get the ... to work.. (#9/N/2)

And then, there was this novice's opinion that was shared regarding support from the administration.

Well, you kinda have to adjust on the spot. You're thrown into a classroom all day and it's not like you get any help. You can ask for help, and people will help you, but the fact of the matter is, the bell rings, they're in their class, you're in your class and you're swimming and you're doing it. You're doing it whether you're ready or not. I came in... I came in as lateral entry. I came in from this new program that nobody knew anything about. Everybody just kinda left me alone. I really think they didn't think I would stay cause they had such bad experience with lateral entry teachers. They were just, you know, every day I was there, they were counting their blessings. By Christmas time they realized, not only was I going to stay, but I could really hold my own in the classroom and it was okay. And then things got a little easier. But quite honestly, everybody pretty much avoided me the first part of the year, and I think they just didn't think I would make it. Why put time and energy into something that's just not going to last? And I don't think it was intentional, I just think that was the experience they've had. Plus, we started the year off real rocky; the department head was in the hospital, so they were covering his classes, so people didn't have time to worry about me. As long as I was there, everybody was happy. I said I could be teaching communism down there, nobody even came into my room until nearly Christmas. They had no idea what I was doing down there <inaudible>, all is well with the world. It was alright, I didn't care well, I think the administration is pretty much overwhelmed, and I'm not sure, well, I do know...the day to day in that office has got to be a nightmare. But, pretty much, the administration is just glad if they don't get complaints. If they don't get complaints, you don't hear from them. They don't come in. I get observed by Mrs.... because it's her job to observe me, but I think she's the only person who's ever been in my classroom, other than ... the department chair, cause he has to observe me too. If you need them for something, you almost have to make an appointment, which I don't particularly like, but I don't rely on them for a lot either. (#8/N/2 lat.)

### Staff Development.

The novice teachers gave evaluative comments of what they had experienced in attending the various staff development offerings and often contrasted their experiences with the desire for workshops on specific topics that they felt a need to have addressed (e.g. discipline & technology). These answers were in response to the interview questions posed to them asking about: instances when the staff development information was helpful; how the information was used in teaching practice; and what role staff development plays in teaching practice.

One thing I didn't, when I first got into teaching, I had no idea how to really incorporate calculators into my class, and technology. I really didn't know cause student teaching, I was just trying to get a lesson plan, you know, you can't really worry about everything else. I remember talking to other teachers about it. And I think I took an internet course, but that was just because I thought I needed renewal credits or something. I did that last year, but this year, my department is really doing our own staff development within the department on ways that we're using technology in our classrooms and so I'm getting to go to those, and I'm seeing other things. (#14/N/3)

The feelings of another novice, with regard to the lack of staff development offered on the topic of technology in the classroom, was similar. She shared her opinion of what would be useful learning that she could take back to the classroom and use with students.

I have not had the opportunity to do much staff development, and quite honestly, a lot of it that I've been to hasn't been real easily applicable for Science, I don't think. I've been begging for a couple staff development things in Science, like the calculators these kids use, you can do labs and get probes and everything, and you hook them into computers and you can do the graph and everything. I really want a staff development on that and the County keeps saying they're going to do it, and they don't. this summer, I may search one out wherever I find it because these kids can play amazing games on those calculators. They can't do scientific notation; I have to teach them that, but they can play games, and certainly

they would get a kick out of a gas lab or a ph lab and using that, and then putting it on the computer on a graph. (#8/N/2 lat.)

One outspoken novice very clearly articulated his dissatisfaction with the way that staff development, overall, was offered at his school and in the school system. These comments indicate that there is a disparity between what, in his perception, is needed and what, in turn, is offered in the way of staff development. This was a theme that the novices expressed consistently.

It was mandatory... It was something I was opposed to in theory to begin with just hearing that it came from economic, Reagan's economic advisor. It just, I was not interested in it to begin with. Even though I had heard some good things about it I went in upset, but trying to get as much as I could out of it. I guess, the way it was applied, the way it was run, it's just symptomatic of ... county. Having these programs that get kicked down from the top, there's no real consideration. There's time and money spent and to me is symptomatic of a system that is built up too large. And that is what I really got from that seminar. Is that this proves my point. All I heard all day was cynical comments. People upset, people. You put mandatory on something on a work day, you're going to make people mad anyway. But, it wasn't, I don't know. You understand what I'm saying. It was a difficult group to reach and the message was just not, we didn't need it. There were more pressing issues that we could address as a school. I guess the one thing that did intrigue me was the fact that we are going to have a second session that is focused on the classroom devices that are part of the ... method. (#13/N/2.5)

This novice, when asked what role staff development plays in his teaching practice was candid in his reply saying, that “the way it's implemented now, I think it's a waste of money, and a waste of smart people, and resources, and time, and it could be a whole lot better. Some choices, some options.” (#13/N/2.5)

Yet another teacher expressed her feelings of dissatisfaction with regard to the timing of the staff development offered.

As a young teacher, as a new teacher, ... and maybe I shouldn't feel like this. I feel like sometimes to take a whole day, a work day from me, I could really utilize that better ... the lesson plans and whatever. So I'm not sure, I don't know how the older, but I know the younger, newer teachers, I know I do, I think that those maybe should be done before school starts, but to take the time out right in the middle. I just really feel like I could utilize that time to do something to get ready for my class. And I'm not sure that's the way I should be thinking. Not to say that I can't learn things. I can always learn. (#10/N/3)

The general feelings that the novices conveyed about their view on staff development was encapsulated by the remarks from this one teacher when she shared,

I mean, I know there are some really good ones out there, cause you hear of one, and you hear somebody talking about it, but there are so many out there that are bad. I shouldn't say bad, but they just aren't helpful. So that's why I shy away from them. (#14/N/3)

#### Summary

The expert teachers answers to the questions associated with how they connect their day to day experiences with professional development centered around the themes of collegial discourse and informal learning communities, modeling, and mentoring. After analyzing their interview answers, it is evident that the expert teachers make connections from their practice to developing professionally by discussions with their peers and through helping less experienced teachers to learn by modeling and mentoring them. Some of the experiences shared were similar to the experts treating the novices as their students, but in a more collegial manner.

The novices' answers revealed that they held a preference for learning through their colleagues in informal learning communities over staff development opportunities. They also shared that they felt the staff development offerings were not aligned with

their needs and that the administration could do more to support the type of collegial learning, through modeling and observation, that they strongly desired.

CHAPTER FIVE  
CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS

One day after school Helen, a first year teacher, approached Nancy, who had been teaching for 22 years and whose classroom was across the hall from Helen's. Both had recently attended a staff development workshop that was required by the school administration during one of the scheduled teacher workdays. The full day workshop not only left Helen behind in preparing for her classes, but the workshop was not delivered on a topic that had anything to do with Helen's greatest needs. Nor did it address the needs of the other first year teachers, to whom she had spoken, at this point in their development as teachers. Helen, still feeling somewhat overwhelmed from the expectation of teaching 5 classes this year, 2 of which required state mandated End of Course Tests, was seeking Nancy's advice on how to address a recurring problem with classroom management and discipline in one of her advanced academic level classes. This problem had persisted despite Helen's attempts at the interventions she had thought of on her own. Maybe, she thought, she could get Nancy to support her strongly felt need to observe another teacher who teaches similar students in order to see how the problems would be handled with more experience. Helen approached Nancy in the hall as the tenured teacher was carrying a stack of file folders into her room. "Nancy, I was wondering if I could ask you for a few suggestions on how to handle a problem that I am having in my 4<sup>th</sup> period class?" Nancy responded, "I'll be glad to help you any way that I can, but know that I will have to leave to attend an IEP meeting for one of my special education students in 30 minutes." Helen went on to describe her problem,

I have tried everything that I can think of and it seems that nothing has worked. The problem just keeps getting worse, especially with this class, but really, in all of them. I can not get those kids to be quiet. They talk while I am talking and no matter how many times I ask them to stop, or how mad I get, they start again after a few minutes. I am half way through the school year and we have not covered even a third of the curriculum content they need to be prepared for the End of Course Test. I can't teach them because I can not get them under control. I wish I could sit in to observe another teacher who has the same type group of students to know what to do, what to say, how to say it. I just don't know how I am going to teach this group the rest of the year unless something happens.

Nancy, sensing the desperation and frustration in Helen's voice, recollected a time in her beginning teaching experience when she broke down in tears talking to another teacher about the same type behavior. Looking back on recent years, she could not remember the last time that her students presented any type of problem that elicited the level of conflict that she sensed coming from Helen. She knew that Helen needed someone to listen and to provide a few concrete suggestions for her to try the next day. Possibly they could set up a time when Helen could observe her, so that she could model the strategies. Nancy had the sense that unless Helen felt some relief soon, this problem would be getting out of hand, leaving the first year teacher feeling powerless.

This narrative is an amalgam of the roles and approach to learning that the novice and expert teachers illustrated in their interviews. This portrayal reveals the ways that teachers seek the information that they need to learn within the context of their everyday practice and provide the necessary support that contributes to the professional development and expertise of their colleagues in the learning communities that informally develop within the schools.

This chapter will first discuss the conclusions from each of the research questions examined in the study. The analysis of the interviews, concept maps, and the matrices revealed themes generated from the novice and expert teachers' responses. The themes that were reiterated across each of the research questions are discussed in this chapter and included under the conclusions. Next, the implications derived from the findings are considered. Lastly, the recommendations for practice and recommendations for future research are offered.

### Conclusions

#### How Do Teaching Professionals Develop Expertise in their Practice?

This researcher surmises from the supportive findings of this study that the development of teaching expertise is a nonlinear process. There are many factors upon which the development of expertise is predicated. The findings from this research study expand the Turner-Bisset (1999) model that describes Knowledge Bases for Developing Teaching Expertise (depicted in Figure 1 on page 26 and described in Appendix O). The information collected from both the novice and expert teachers interviewed expanded upon and vividly illustrated the characteristics outlined in each area of the model. Therefore this model provided a valuable heuristic from which to examine the novice and expert development toward teaching expertise. However, this researcher induces from the analysis of this study's interviews with the novice and expert teachers, that it is evident that these knowledge bases are not acquired in a certain sequence, after a designated amount of time, nor as a result of particular experiences in a teacher's

practice. Additionally, these research findings indicate that the knowledge bases acquired do build upon one another in the developmental process and are entwined.

The influences from teaching colleagues and the feedback given by students were the two most often mentioned reasons reported from both the novice and expert teachers for making changes toward improvement in practice. Novices repeatedly expressed a strongly felt need to observe more experienced teachers and spend time discussing specific areas in which they needed assistance. They clearly articulated that they felt it would be helpful to their professional growth to see modeled by another teacher the methods used for disciplining and managing students. Additionally, an area with which they expressed the need to improve was with the skill and knowledge to adjust their lessons to the variety of student ability levels in their classrooms.

When analyzing the two groups of novice and expert teachers, these two main concerns, which impact each other, were expressed in both groups of teachers' interviews. The first of these was discipline or classroom management. The novices' shared that they felt uncomfortably challenged when they were confronted with discipline issues in their classrooms. Only one of the novices interviewed had been through any type of specific instruction that addressed this topic of discipline. She commented that discipline training was required during her student teaching. The expert teachers discussed ways in which they had given suggestions to novices on this issue of discipline. They expressed concerns that the novices wanted the students to like them as a reason the novices were lax in their disciplining and management of students. Another observation

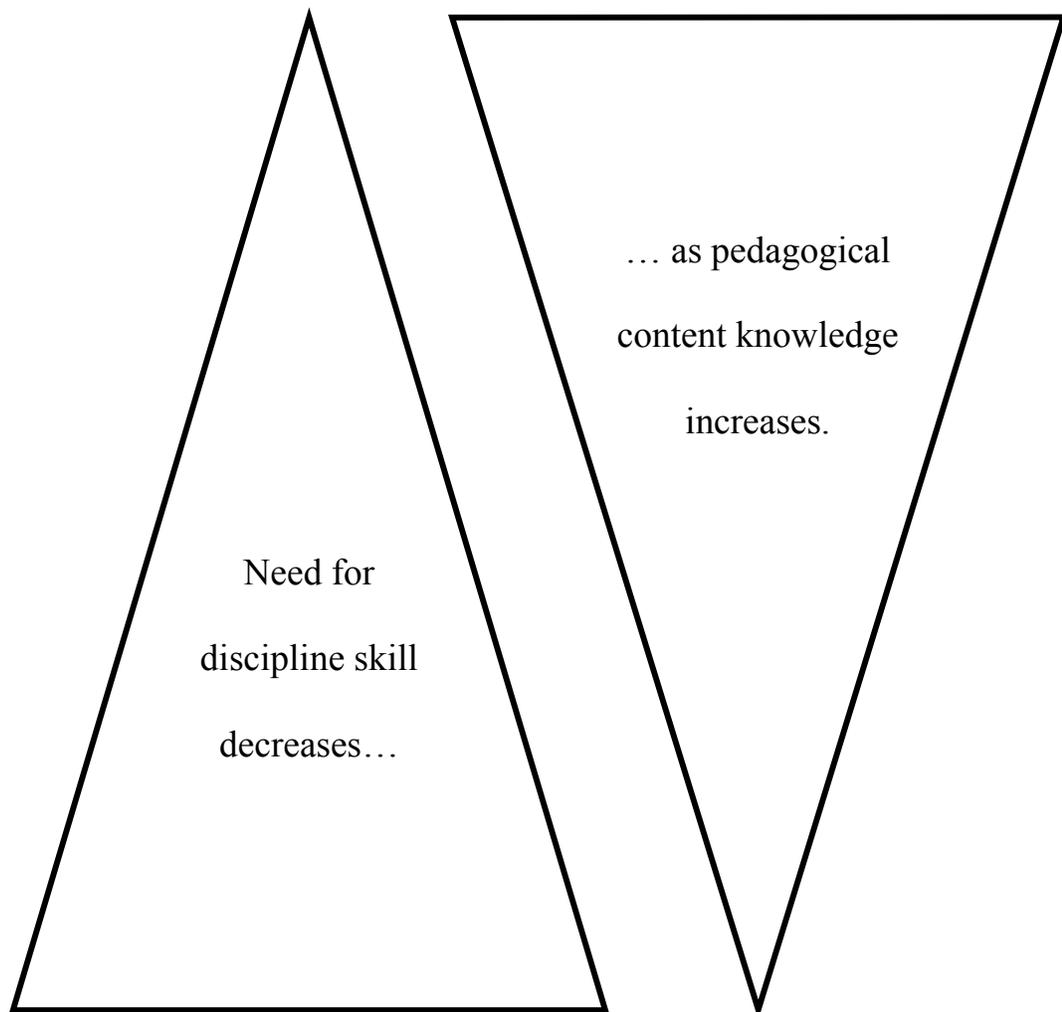
shared from an expert teacher regarding the novices was the novices' reluctance to go the administration for help before management or discipline issues escalated.

The other concern expressed by both groups of teachers that jointly impacts discipline in the classroom is the demand for the skill of teaching to the diversity of learners that exist in regular classrooms. Some of the teachers referred to the ability to adapt to this need as cognitive leveling of the material that they presented. Novices, even those with several years of experience, were aware and frequently commented that they had not, yet, acquired the skill to teach or reach all of the academic levels within their classes. This was a source of concern for them. The expert teachers told of times in their own experience when more knowledgeable teachers had helped them learn how to adjust their lessons to accomplish reaching the majority of the class. They shared that they had been approached by or observed novices having difficulty with this skill and offered suggestions to help.

This researcher, from the analysis of the information shared by the novices and experts interviewed, has concluded that the ability to satisfactorily deal with student discipline is an inversely proportional relationship to the degree of pedagogical content knowledge that a teacher demonstrates. Figure 6 is a representation of this concept. As the teacher gains expertise in the components of overall pedagogical content knowledge, the classroom discipline issues diminish. Skills from several of the knowledge bases that indicate the acquisition of expertise are operationalized in ways such as the ability to develop and deliver appropriately paced and leveled curriculum lessons. As long as these lessons met the individual student needs, a part of which includes creating a culture and

climate for learning within the classroom that is fulfilling for all, teachers have less behavior problems from students. The ability of the teacher to provide the same subject matter content at a variety of cognitive or ability levels to address the continuum of learners' needs within a classroom comes from experience. When one third of the students in a class of thirty are either labeled special education (as was an example given

Figure 6: Inversely proportional relationship between pedagogical content knowledge and discipline skill.



by several of the novice and expert teachers interviewed) or English Speakers of Other Languages (ESOL – a growing segment of the population), the need to provide a leveling of the instructional content becomes paramount and was a skill development priority, along with discipline strategies, that was expressed by the novices and experts.

#### What Makes Learning Experiences Meaningful in the Context of Practice?

This researcher proffers the model represented in Figure 3 on page 114 as an explanation for how learning experiences are made meaningful to novice and expert teachers in the context of their practice. This model was developed out of the findings that correspond and are represented narratively in Chapter Four.

Formally organized staff development was reported by the novice and expert teachers interviewed as being a small component of what contributes to their professional development or improved teaching. Novice and expert teachers alike reported factors that contributed to the changes that they had seen come about in their own teaching practice. These factors include: the modeling of teaching methods, strategies, and practices by colleagues; the informal one on one support provided by colleagues; and accessibility to colleague(s) with whom they could speak about specific points of concern.

Also reported by the teachers were ‘pivotal’ experiences where the educator who was interviewed distinctly remembered a type of coming together, melding, or integrating connection, at a specific point in time that combined past experience, educational theory, skills, and beliefs about their practice in a way in which they described as being transforming or influential to their practice from that point. These

pivotal experiences happened in a variety of settings (e.g. in a classroom with students, while observing another educator, during a staff development session or a continuing education experience).

The findings reveal that learning the importance of developing relationships did not just include the teachers' relationship development with students. The expert teachers learned the importance and value of developing relationships extended in all directions – colleagues, students, administration, and business community - within and outside the classroom. These expert teachers had learned that teaching is not just having knowledge of the content, but that relationships of all types are important for student success. They expressed an awareness that their specific behaviors toward students strengthened or weakened the relationship.

The theme of relationships was also communicated in the findings from the novice teachers. Novices are admittedly concerned about being liked by the students. Several expert teachers who were interviewed confirmed this as an observation of the novices as well. This desire to be liked seems to make the novices more prone to inconsistencies in their expectations regarding student behavior and in their implementation of behavior management practices. During interviews with the novices, the teachers expressed strong feelings of caring about their students. Several of the novices emotionally commented at length about their belief in the importance of letting the student know that they care. They wanted to be perceived by students as caring and, when discipline issues arose, a conflict in their ability to handle these situations in their practice became evident and shook their confidence and feelings of competence. The

majority of novices interviewed for this study, by their own admittance, had neither developed a solid philosophy or practice of disciplining, nor had they learned or mastered the classroom management skills necessary to simultaneously maintain control of the classroom and have quality relationships with their students. With this in mind, one observation and the concerns of an expert teacher who coaches novice teachers is shared here:

First year teachers have the tendency to want to have the kids like them, and they think that if they ask you for help, they think you're needy, and I can do this you know, or, it'll get better Monday. It won't, unless you address it. And she's sweet, but, if she comes in the first day late and you don't address it, you set the tone for the class right there. I feel more comfortable doing that now cause I see if I don't...I'll phrase it, you can do what you want, if you're looking for advice, I'll be more than happy to give you some, but I don't want to feel like I'm telling you what to do. But if you're looking for something, here's what I would do. If you don't want to hear it, that's fine. What happens is, if you don't address it right away, it just gets worse. I see right now that we're in a position where teaching is hard enough and you don't get enough quality people in here, that I just feel like I'm getting old when I say I want to keep them around, so how can I help them? If you don't then you're looking at training somebody else. (#7/E/12)

Another theme indicated in both the expert and novice teachers' responses was that of evaluation. The findings show that expert teachers use self-evaluation within and of their teaching practice to determine what, specifically, is affecting student performance and then adjust their behavior to improve the performance. Several teachers in the study shared that ongoing evaluation of student performance utilizing a variety of methods is good practice. Good learning reflects good teaching and evaluation is a tool to gain feedback from the learner in order to make necessary modifications in teaching to the learners' needs. Teachers regarded this evaluation

process as a tool to help them teach more efficiently, covering more curriculum and content, in a lesser amount of time. The novices' use of evaluation, on the other hand, was more focused on their subjectively evaluating what worked with students rather than the specific self-evaluation of their practice. They used the students' success, motivation, and learning to measure whether or not they would again repeat the types of activities, strategies, and methods that they chose.

The discussion of adaptation of methods, materials, and concepts to the needs of the students was another theme that was revealed in the findings from both the novice and expert interviews. Expert teachers were able to reflect upon their pedagogical content knowledge, a compilation of all the essential knowledge bases, and draw from prior experience to make use of the tools, strategies, and methods with which they were presented during professional development sessions. Novice teachers, in contrast, were often not able to make the transition to adapt a concept from a presentation to their classroom. Some of the reasons the novices shared were: their reluctance to be open to new ideas and not feeling 'established enough'. They also said that they were able to use ideas with higher academic students, but not the lower or they admitted trying a method once, not liking how it turned out, so not using it again. They reported that the staff development information presented as too abstract, without enough detail to be able to use in the classroom, and that the ideas presented were 'too far out'. Novices admitted their inability to adapt lessons to reach all the range of academic levels in their classrooms. Both the experienced and novice teachers often commented upon how different dynamics from one class to another could have an impact upon their teaching.

Novices found it difficult to accommodate the needs of the changing dynamics of the groups. Experts, on the other hand, frequently cited a mismatch between their personal teaching style and an idea or activity presented as one of the reasons why they did not use the ideas presented in staff development.

In both teacher groups, comments were made as to the helpfulness of having staff development concepts modeled for them during the training. Novice and experts alike cited the modeling of the information presented as being beneficial and facilitative to their use of the information with their students. Repeatedly novices commented that they desperately wanted to observe other more experienced teachers to examine the ways that those teachers handled discipline and used these staff development ideas in practice.

#### How Do Teaching Professionals Connect Day to Day Experiences with Professional Development?

Adult teachers as learners acquire the skills that make up the art of teaching in a myriad of ways. Some of the teachers interviewed actively sought out learning opportunities through staff development presentations offered to them. The majority of the participants had the experience of being required, by the administration of the school, to attend particular sessions. Staff development opportunities and experiences were reflected upon and described in a continuum of ways that ranged from mostly negative to somewhat positive. Some of the teachers reported that staff development was something that they looked to for concrete answers to issues that they were experiencing. They had hoped for something that they could take away and immediately apply within the classroom or in some capacity with students. If that

expectation was not fulfilled then the perceived value of the staff development declined. Novice teachers, overall, complained that the staff development topics did not fit their needs, took time away from their pressing duties, and that for the time spent, the return of useable information was low. Expert teachers who were interviewed expressed difficulty with determining specifically what they had learned, when, and where, because the ideas presented over the course of their time in education had blended together with their experience. This made the learning they had experienced hard to separate and trace back to when it was originally presented. A frequent comment made by the expert teachers was that the staff development affirmed for them that they were doing, in their daily practice, what the administration supported.

Time, or lack of enough for all that has to be done, was a concern for both the novice and expert teachers to the point that it was sighted repeatedly as what prevents the teacher from doing a good job. Lack of time was also reported to be the main barrier to implementing the information gained from staff development. Many hours of preparation time, grading papers, involvement with student extracurricular activities, etc. were reported as being spent outside of the allotted school day hours. Both novice and expert teachers remarked about the concerns that they felt regarding the time that students spend on learning in relation to the demands of the curriculum that they must cover for the End of Course tests. A class activity that motivates students to critically think about how the subject being taught integrates into their own life was sometimes sacrificed due to the amount of time that it takes away from the specific objectives that are necessary on the End of Course Tests. Teachers commented that they found it

difficult to strike a balance between using these motivating discussions, lab activities, and any other type of lesson in the classroom that diverted from the specifics of what must be covered for the End of Course Tests.

Another demand upon the time of the teacher was revealed when a number of the novice teachers interviewed admitted that they had assumed responsibilities for coaching athletics during their first year of teaching experience. Some of the expert teachers shared that they, too, during their first years of teaching had coached. There is additional compensation paid for this type of duty in some schools and that is an incentive to add this extra activity to an otherwise already difficult year. One experienced special education teacher reported that part of the reason for his assuming a coaching role was the perception by his students and others of the 'coach'. This role perception seemed to enhance his relationships with the students and made him more approachable, in some way diminishing the special education stigma. Additionally, this extra duty is a way for the teachers to quickly become involved with students outside their role in the classroom. Despite the pros and cons of extra duties, this author concludes that in view of the stressors that exist in the novices' reported experiences, deliberate and careful consideration should be given by the novice and the influencing administrator as to whether or not this added duty is a wise choice in light of what the first year teacher is destined to experience.

Significantly, several of the novice teachers interviewed commented that they did not know where, or to whom, to turn to ask specific questions about school and teaching concerns. This was also indicated by the experts in their reflection upon their

early years in teaching as well. As the novices interviewed expressed the strong desire to be given the opportunity to observe other teachers and described how they felt that observing other teachers, who were reputed to be good teachers, would be very helpful to their own practice, it became clear that there was not an obvious mechanism for this observation to occur. The orientations provided at the beginning of the school year were reported to lack enough detail to really be of much use in the way of helping them connect with a colleague to whom they could turn.

The teachers from both participating groups shared that those who are more tenured in the school, and those who are highly involved are viewed, by both novice and expert, as influential. The contributions that novices are able to make to the school are limited by their relatively weak voice in school affairs.

Since the researcher in this work with novice and expert teachers drew from the work of Daley (1993, 1999, 2000) the findings that concur with Daley's research with nurses are listed here. The term continuing education is used to mean the same as professional development.

- It is not the content of the continuing education program, but the process of making meaning of it.
- Continuing education helps the integration of what is learned in practice with more formal types of knowledge (e.g. educational theory).
- Experts demonstrated that continuing education reaffirms their knowledge and practice.
- Networking and dialogue have been shown to have value in developing knowledge.
- Teachers need time to discuss with other teachers the events that confront them in practice and the learning that occurs in these situations.
- Teachers identify the value of collegial discourse in their learning.
- The interviews were a reflective, evaluative learning process for the participants.
- Rather than continuing education and practice being kept separate, the two should be united and structured so as to build upon one another due to the intricate relationship between them. (Implies situated learning is taking place.)

- Continuing education philosophy needs to move away from the model that is predominately and currently used.

Additionally, conclusions are listed below with which this research did not concur with Daley's conclusions in her research with nurses.

- The greatest impact of continuing education is the integration of multiple forms of knowledge.
- The role of continuing education is to facilitate a process of learning, reflection, growth, and change through which teachers gain confidence.

Finally, this researcher's findings with novice and expert teachers did not demonstrate the importance of continuing education or professional development as was described by the participants, as being significant to the development of expertise, nor to making learning meaningful in the context of practice.

#### Implications

The implications derived from this research completed with novice and expert teachers suggest that the knowledge of self has critical implications in a teacher's development. Knowledge of self is the precursor to establishing teaching practice philosophy. Knowledge of self provides a foundation, or grounding, that establishes a teacher's beliefs in areas that will inevitably be challenged within the course of teaching practice. Therefore, this researcher feels strongly that the knowledge of self should be consciously developed in preservice and induction phases of teaching and its development encouraged throughout one's teaching practice. Suggested implications from developing a strong base in knowledge of self could facilitate the development of expertise and contribute to retention of teachers as a result of diminished frustration and enhanced feelings of competence. To illustrate the impact that knowledge of self might

have, consider the comments from one expert teacher who shared her feelings about the impact that developing her knowledge of self had had on her practice.

I have to be honest with you, after 25 years, after so many, I mean there have been so many workshops that I've attended. So many classes that I've attended, so many things. And let me tell you, the thing that has helped me the most, in dealing with my students, and this may sound very strange and that was getting my master of divinity and I'll tell you exactly why. I parents were ... missionaries, and I grew up overseas, and so I was constantly, constantly conflicted with this idea about religion. And all these other psychological impacts about it all. Getting my master of divinity helped me do an inward journey, to the very bottom of who I am, and what I am, and knowing who I am, and understanding who I am, forgiving who I am, accepting who I am, being okay with who I am, was the greatest thing I could ever do for my students. Because I have no more illusions, I have no more illusions that I am the worm of the earth. I am who I am, and I think that, that is what I model for my kids and I think that is the most important thing that I've ever learned in my life -self knowledge, who I am, or what I am, and I'm okay and you're okay, and from there we can go on. And I know that's trite and a big 70's, but it's very important, and I think that if we could all do that kind of journey, as painful as it may be, hard though it may be, if we could do that journey, we would be better teachers. And we would be better role models for these kids. (E/#6/25)

Regarding the development of self-knowledge as a teacher: teaching professionals develop expertise over a period of time providing that they are exposed to quality experiences and support. Many of the novice teachers interviewed about their view of what makes a good teacher used simplistic descriptions that did not indicate that they had a clear picture of what they are trying to achieve in their own practice. There are marked differences in the development of the novices who display depth in their self-knowledge as opposed to those who expressed shallow self-knowledge. The ability to critically reflect upon practice and make changes based upon that self-evaluation runs parallel to this development. Those teachers who are aware of the reasons behind their actions –

their beliefs, with regard to whatever aspect of teaching it may be: content knowledge; curriculum knowledge; or knowledge of learners, demonstrate a broader array of development in the benchmarks outlined by Turner-Bisset. The teachers who are able to express their philosophical values and beliefs about teaching practice and connect those to their practice are better able to evaluate and improve their performance. This level of self-knowledge helps teachers, at any level of experience, to explain the reasons for their actions to themselves and to others if necessary. Having an awareness of why one chooses particular behavior shows that behaviors are becoming habits. The general stages of developing teaching expertise that Berliner (1988) set forth did describe approximate and broad sequential stages that were observable in the participating teachers. However, these stages did not provide specific information to serve as a tool to identify areas in the knowledge bases that exist in a teacher's practice or guide those that need development. Turner-Bisset's (1999) model of Knowledge Bases for Developing Teaching Expertise not only gives more specific information or benchmarks of skill acquisition, but it includes the knowledge of self in the model.

A telling comment from one novice teacher with regard to being "left alone by administration until after Christmas", when she had started her teaching position in the fall semester, indicates that as long as there are no problems in the classroom, the teacher is an "island". Another comment by a novice that she would just like the principal to come into her classroom occasionally indicates that there is a desire for some type of unsolicited support, acknowledgment, or affirmation from the administration toward the teacher.

Interestingly, and in conjunction with the need that novices expressed to go to a more experienced teacher for help, the interviews conducted with experts revealed that, beginning around year seven of their teaching experience, these more tenured teachers expressed a desire to help others in their profession through mentoring, presenting information, and sharing their knowledge and experience in some format.

The teachers interviewed implied that they had deficiencies that needed to be addressed. They suggested that regular education teachers being offered preservice and inservice training in the area of teaching exceptional students and students who are English Speakers of Other Languages is needed to address the concerns that both expert, but especially novice, teachers express. The desire to be liked seems to make the novices more prone to inconsistencies in their expectations and in their implementation of behavior management practices. Training to help novices communicate building appropriate student-teacher relationships while effectively balancing the responsibility for student management and discipline is needed. Novice teachers' expression of their desire to receive training in discipline was heard over and over and is the source of unresolved frustration for the novice. As this frustration builds, it leads to feelings of incompetence. Lack of ability to successfully manage and discipline students is an implication with serious impact upon a novice teacher's decision to stay in the field.

## Recommendations

### Recommendations for Practice

Orientations conducted to familiarize the new teachers to the school at the beginning of the year when teachers first begin working there, as described by the

participants were in each case, large group and included very general information about the school. These sessions reportedly lacked enough detail to really be of any practical use. These orientations, if broken into small groups utilizing mentors as facilitators could be completed in the same time designated, but could allow the novices to become acquainted and start to develop relationships with key staff, such as a mentor, while allowing the mentors to become familiar with the novices' needs. This would connect the novice with at least one key person to go to for answers and begin to develop collegial relationship within the school. These groups could continue to meet to develop an environment for dialogue and discourse throughout the year in a manner to structure support for the novices.

Additionally, time was reported as a critical component which there was not enough of scheduled for collegial discourse and dialogue. Time to allow novices and experts to meet where the novices could be given readings, case studies, or research topics, relevant to their concerns and practice, to read and reflect upon, then discuss how to tailor to their needs. Some suggested topics could be: specific strategies or methods for teaching a particular lesson; ways to address specific discipline problems and manage behavior; tools for communicating with parents; reflecting upon practice and evaluating their own strengths and weaknesses. These are some examples of topics that would address the needs the teachers interviewed in this study expressed. Furthermore, meetings structured to include collegial discourse focusing on topics of interest could be a vehicle to introduce action research into the ongoing learning groups. Novices interviewed expressed the need to become acquainted and develop

relationships with their colleagues and learn more about where, or to whom, they could go to seek information. The aforementioned recommendations could lend some structure to meeting this need.

Staff development, as it is often presented, should be looked at more critically to determine if the return on this investment of staff time and resources has true value. For the most part, as was evidenced in this study, the information that is disseminated in this manner is not integrated into teaching practice unless the topic presented is addressing the immediate, perceived need(s) of the targeted audience. The staff of a school, with its diverse levels of expertise, is often at different levels with regard to need as well. A revision of staff development focus, energy, and expense to shift to address smaller audiences within the school with topics that more specifically target assessed needs may be a more economical, effective, and efficient option to the current practice.

For novices, the situated learning alternative described in Chapter Two of this research report might be utilized in conjunction with the mentoring process. Specifically novices seem to gain less from these large group, formally presented, staff development sessions than do the more experienced teachers. This is probably due to the novices lack of sufficient experience with which to connect the new information. To address their specific needs, novices should be paired with not only a mentor, but other teachers with whom they feel comfortable asking questions of on an as needed basis or as they arise basis and within close proximity to their classroom. In conjunction with the desire expressed by the novices to have more administrative involvement in their classroom and the responsibility of administration to observe and

provide formative feedback, a procedure to combine the teachers' skill deficiencies revealed in the observations with specific inservice topics could be a way that needs are met within the structure of the school. In this way, the staff development would be targeted and focused instruction on the topics that the novices expressly need. As an additional supportive tool, observations of more experienced teachers could be facilitated by the administration since this was clearly expressed by the novices and was also said to be difficult to arrange within the school day. Not only would the ways that the experts model responses to the issues of discipline and management be observable then, but also the ways that the experts address the variety of student ability levels within the teaching of their classrooms. Both areas that were expressed as concerns by the novices.

A recommendation for future practice is specific skills training during the completion of their education or certification process to help novices build appropriate student-teacher relationships while effectively balancing the responsibility for student management and discipline. Discipline is a great challenge within today's classrooms and novices are ill equipped, by their own admittance, to deal with the demands they encounter during their first and following years of teaching. Specifically training these management and discipline skills is critical for the teacher to successfully face the challenges. These skills could be addressed prior to the completion of studies or before taking complete responsibility for a classroom. Classroom communication strategies focusing on how the teacher communicates with the students both verbally and non-

verbally and teaching how to de-escalate potentially volatile interactions would be of value.

### Recommendations for Future Research

Would it be beneficial and efficacious to professional development if teachers could become aware of their placement in the developmental stages outlined by Berliner (1988) or of their acquisition of the Knowledge Bases suggested by Turner-Bisset (1999)? By utilizing these models, could continuing education be planned around these levels of development to advance a teacher's practice toward the attainment of expertise? Would this process involve an individual being able to identify when the learning required or sufficient change to move to the next stage has taken place? Would an awareness of the progression through the stages suggest the need to develop self-knowledge? Could the skills outlined by the Knowledge Bases identified in Turner-Bisset's model be developed efficiently through situated learning? Are teachers naturally more reflective in the thinking that they do about their learning than individuals in other professions?

More research is needed in the area of preservice and inservice support for novice teachers. Specifically, research in the area of developing a model for implementing a time efficient and effective way to address novice teacher's acquisition of the skills they need to survive in order to gain expertise in teaching is needed. Studying the effects of a supportive model implemented during teacher training and the first years of teaching could reveal information for program planning. Situating the learning within their daily teaching practice, as this research has revealed is naturally

occurring in a very unstructured and non-deliberate way through informal learning communities, in a more deliberate way, could enhance the retention of novices in the profession.

An additional investigation utilizing the Knowledge Bases for Developing Teaching Expertise model (Turner-Bisset, 1999) could guide administrators and mentoring teachers to assist in the development of novice teachers by using the benchmarks set forth as a tool for feedback during formative observations.

Research designed to investigate the acquisition of the knowledge base labeled Knowledge of Self could provide insight into the development of teaching expertise. The attainment of self-knowledge is a part of the critical reflection and self-evaluation, both of which are long-standing and integral principals in the development of teaching expertise.

### Summary

In Chapter Five first were presented the conclusions drawn from the responses to each of the research questions examined in this study. Next, the implications derived from the research were delineated. Last, recommendations for practice and for future research were suggested.

**APPENDICES**

## Appendix A

### CRITERIA FOR USE IN DETERMINING TEACHER EXPERTISE

When thinking of a teacher to participate as an expert in this study of learning processes consider David Berliner's research on *The Development of Expertise in Pedagogy* presented at the Annual Meeting of the American Association of Colleges for Teacher Education (New Orleans, LA, February 17-20, 1988) which notes the data collected by studies on the subject of teaching expertise points out differences between novice and expert teachers in the areas of:

- ◆ interpreting classroom experiences (phenomena);
- ◆ discerning the importance of events;
- ◆ using routines;
- ◆ predicting classroom phenomena;
- ◆ judging typical and atypical events; and
- ◆ evaluating performance: responsibility and emotions.

Additionally, P. Benner (1984) in research investigating novice and expert practice of nurses, indicates the following characteristics for consideration of expertise:

- ◆ reliance on abstract principles or use of past concrete experiences as paradigms;
- ◆ understanding (classroom/school) situations as discrete parts or seeing situations as an integrated whole; and
- ◆ acting as a detached observer or an involved performer.

Further consideration should include Daley's (1999) description of participants in her study not being classified as novices and experts simply on the basis of years of experience or on the referrals of employers or peers.

**Appendix B****PRINCIPAL SURVEY LETTER**

Summer 2001  
Ms. Kind Principal  
Wonderful High School  
Happy Meadows, NC 27600

Dear Ms. Kind Principal,

You have been contacted to select a member of your teaching staff who may consider participating in a research study that will examine the learning processes of expert teachers. Studies have shown that the single most important factor contributing to student achievement is teacher expertise. The topic of teacher expertise is a much discussed and debated one these days. It is my hope of that the information collected in this study will contribute to the literature in Adult Education on the topic of the learning processes of expert teachers and the training and continuing development of teaching professionals.

For the purpose of this study, principals are being asked to identify a staff member who stands out as being exemplary in the teaching profession. I have included, with this letter, criteria for determining teacher expertise for the purpose of this study. This individual should have more than five years of actual classroom experience and currently be holding a full time instructional position in your school. The grade level or the content area makes no difference. I urge you to consider all teachers who meet these criteria - including art, music, and physical education, and special educators, but only select one. The School System through Staff Development and Initial Licensing is supporting this study. The total amount of time required of the participants will be approximately three and one half-hours outside the school day.

Please return a copy of this letter with the name and method of contacting the teacher you have selected. I look forward to hearing from you. If you have any questions or concerns, please do not hesitate to call me at either of these numbers: (919) 876-4654, (919) 862-0481, or via email at [pcrawford1@nc.rr.com](mailto:pcrawford1@nc.rr.com)  
I look forward to working with your teacher.

Sincerely,

*Paula Crawford, M. Ed.*

### Appendix C

#### **Novice and Expert Teachers' Learning Processes Research Project Introductory Letter**

Hello, my name is Paula Crawford and I am a doctoral student at NCSU. I am currently recruiting participants for a research study to focus on the learning processes of novice and expert teachers. There is very little literature in Adult Learning that is based upon research done with regard to the process through which teachers learn and integrate their learning into practice. Information in this area, to be added to the knowledge in the field of Adult Learning, would benefit the design and implementation of staff development and continuing education programs. In the short and long run this knowledge, in turn, would also benefit teacher effectiveness in the classroom.

As a part of this study, volunteers will agree to be audio taped in a one-on-one interview. They may be asked to participate in a follow up interview at a later date that will also be audio taped and asked to review the written transcript of the initial interview for verification purposes. Additionally, the participants will be asked to write a reflective narrative on an aspect of their practice. All information will be kept strictly confidential and participants will not be identified by name. The total time required will be approximately three and one half-hours more or less.

I sincerely hope that you will choose to participate in this study. If you would like to participate, please sign the registration form and include a contact number where you may be easily reached and, if you have one, an email address. If you have further questions, please call me at (919) 876-4654 or contact me through email at [pcrawford1@nc.rr.com](mailto:pcrawford1@nc.rr.com)

Sincerely,

Paula Crawford, M. Ed.

**Appendix D****Novice and Expert Teachers' Learning Processes Research Project****Informed Consent**

I, \_\_\_\_\_, agree to be interviewed for the Novice and Expert Teachers' Learning Processes research project. I understand that this interview will be audio taped.

Date: \_\_\_\_\_

I agree to review and return the transcripts from the Novice and Expert Teachers' Learning Processes research project to Paula Crawford by \_\_\_\_\_.

Date: \_\_\_\_\_

I, \_\_\_\_\_, agree to a follow up interview for the Novice and Expert Teachers' Learning Processes research project.

Date: \_\_\_\_\_

I, \_\_\_\_\_, agree to allow information from my written narrative reflection paper to be used in this study.

\*\*You will not be quoted by name.

**Actual Participation Documentation**

<b>Interviewer</b>	<b>Interviewee (by Subject # Code)</b>	<b>Date</b>
--------------------	----------------------------------------	-------------

**Appendix E****Novice and Expert Teachers' Learning Processes Research Project  
Consent Form**

I \_\_\_\_\_ agree to be interviewed for a dissertation study regarding Novice and Expert Teachers' Learning Processes. Notes will be taken during the one-on-one interview and the interview will be audio taped. I understand that I will be interviewed for approximately 90 minutes with the option of a second follow-up interview at a later date. I agree that my written reflective narrative may be used in the study.

The interview(s) will be confidential. I understand that only Paula Crawford will have access to this consent form that links my name with my subject number. At the conclusion of the study, the audiotapes, identifiable only by subject number will be destroyed. Under this condition, I agree that any information obtained from this research may be used for the publication or educational purposes of the researcher only.

There is no anticipated physical or mental risk to me, since my participation is limited to exchanging information through interviews and the written reflective narrative. I understand that I am free to withdraw my consent and discontinue participation in this study at any time.

I have been given a description of the study through an initial introductory letter. I understand that if I have any problems or questions in connection with my participation in this study, I should contact Paula Crawford, the researcher, or Sandra Wall Williams, the faculty advisor for this project, at North Carolina State University. Phone numbers are (919) 876-4654 or (919) 515-6039, respectively. If at any time during this study, I feel that my rights have been violated, I may contact the North Carolina State University Institutional Review Board at (919) 515-2117.

---

Date

---

Signature of Participant

## Appendix F

### INTERVIEW GUIDE

#### INTRODUCTION:

Hello, I am Paula Crawford and I am glad that you have decided to participate in this research study to examine the learning processes of teachers. Your participation in the study is totally voluntary and anonymous. Your name will not be used in any of the documents or final report and your responses will be confidential. If you would like to stop your participation at any time, you just need to let me know.

As we have previously discussed, this research will necessitate about three and one half hours of your time - more or less. You will participate in a semi structured, tape-recorded interview in a few moments. After I have transcribed the interview, I will ask that you read and verify that the transcription is an accurate account of our interview and return the document to me. Additionally, I have guidelines written for the reflective narrative you will write based on your teaching experience. We will discuss the instructions for the narrative in more detail later.

Do you have any questions or concerns at this time? Here is the written consent form that I would like for you to read and sign for your participation in the study giving me permission to tape our interview for accuracy. The form also explains the study further.

#### Opening Questions:

Why did you decide to apply with this county?  
How long have you been at your school?  
What led you to teach at this particular school?  
How long have you been in teaching?

There was a staff development program offered that you attended. I would like to ask you a few questions about that particular program.

#### INFORMATION ACQUISITION

Tell me about the staff development program you attended.

What were some of the things you remember from it?  
What was the most valuable thing you remember?  
What was the least valuable thing?  
What did you learn that you related to your teaching?

Was there something in the program that you felt strongly about or got excited about at the time and thought, “I can’t wait to try that in my class, or that won’t work with my students?”

Do you recollect having an “ah ha” moment during the program?

Can you give me some examples?

Was there something presented in the program that you could relate to where you work or an experience you have had there?

Here is an outline of the program you attended. Can you look at the outline, think about the information presented, and tell me how you used the information in your teaching practice?

I would like you to tell me of specific instances you can share where the information presented was useful or helped you.

Can you think of specific instances when it was not used?

Can you think of instances when the information would have been helpful, but for some reason, something prevented it from being used?

After you returned from the program, how did you decide what to apply in your classroom?

If you could have done anything you wanted at your school with the information you had after leaving the program, what would that have been?

Were you able to do this with the information at your school?

Why or why not?

*Restate the information covered to this point in the interview to the participant to clarify and confirm understanding.*

### **SITUATED LEARNING in the AUTHENTIC ENVIRONMENT**

Let’s talk about the school environment where you currently work.

Would you talk about the organizational structure there?

Who do you report to?

Who do you work with?

How are your responsibilities communicated to you?

Has there been a mentor, formal or informal, assigned to you?

How are policies and procedures decided?

How do things get changed?

How are the changes communicated? Could you give specific examples?

Considering the things you have just described, how did they affect your using the information you acquired after returning from the staff development program you attended?

What were some things that facilitated you implementing the new information?

What were some of things that inhibited your implementation?

Tell me what it was like when you first began working at your current school?

Was there an orientation, formal or informal? What did that involve?  
 Was your arrival announced, introductions made, welcomed?  
 Did you feel that you were allowed an adjustment period?  
 How are the teachers treated by administration?  
 Can you give examples or stories?  
 Out of those things you just shared with me, how did any of it affect your using the information you acquired in the staff development program that we have discussed earlier?  
 What were some facilitators?  
 What were some inhibitors?

Could you describe some of the major political issues at your school?  
 How do these issues get resolved?  
 What is the role of the grapevine?

When you think of the most influential group at your school, what could you say that would describe the way they get what they want? Examples?  
 Did any of the things you just described affect your using the information you acquired upon returning from the program you attended?  
 What were facilitators?  
 What were inhibitors?

Can you describe a recent incident that made you feel positive about where you work?  
 Can you describe a recent incident that made you feel negative about where you work?  
 Who are some of the brighter stars in your school, the people everyone tells stories or anecdotes about?  
 Can you give an example of a story that stands out?  
 Tell me about your students.  
 What encourages your doing a good job with them?  
 What prevents your doing a good job with them?  
 Out of those things you just described to me, how did they affect your using the information acquired upon returning from the staff development program?

*Restate the information shared for verification.*

## **TEACHING PRACTICE**

I would like to talk with you about how the staff development you receive relates to how you practice teaching in your school.  
 Have you changed since you first entered teaching?  
 What do you think contributed to this change, knowledge, experience, co-workers, staff development, students?  
 Could you describe a typical day in your teaching practice?  
 What are routines, decisions, interactions, meetings, and responsibilities?

Could you describe yourself as a teacher?  
What do you value in teaching?  
What do you believe makes a good teacher?

Describe how what you learned in the staff development program affected the way you describe yourself? How did you incorporate the new information you acquired into your practice? or teaching role?

Could you give specific examples and student or staff situations?

What role does staff development play in your teaching practice?

How do you decide what to learn?

Could you give specific examples of when you did not know something you needed to know in working with students, and how you went about acquiring the information you needed?

Describe a teaching situation that is most outstanding in your mind?

What did you learn from it?

Did any of the staff development program information relate to this or other outstanding situations?

*Check in with participant to confirm understanding.*

*Verify understanding of the next step regarding review of the transcript for accuracy and return of the document to the researcher by the specific date on the form.*

**Appendix G****DEMOGRAPHIC INFORMATION**

Would you please check the appropriate line in response to the following? Check all that apply.

1. I work in a (an):

- \_\_\_\_\_ regular classroom  
 \_\_\_\_\_ special education classroom  
 \_\_\_\_\_ elementary school  
 \_\_\_\_\_ middle school  
 \_\_\_\_\_ high school  
 \_\_\_\_\_ public separate school  
 \_\_\_\_\_ magnet school  
 \_\_\_\_\_ year round school  
 \_\_\_\_\_ charter high school

2. The number of students in the school where work:

- \_\_\_\_\_ < 50  
 \_\_\_\_\_ 51-100  
 \_\_\_\_\_ 101-800  
 \_\_\_\_\_ 801>

3. I have worked in this school for:

- \_\_\_\_\_ Less than a year  
 \_\_\_\_\_ 1-3 years  
 \_\_\_\_\_ 4-5 years  
 \_\_\_\_\_ 6-10 years  
 \_\_\_\_\_ More than 10 years

4. I have the number of years experience checked.

- \_\_\_\_\_ Less than a year  
 \_\_\_\_\_ 1-3 years  
 \_\_\_\_\_ 4-5 years  
 \_\_\_\_\_ 6-10 years  
 \_\_\_\_\_ > 10 years

5. My certification area is:

- \_\_\_\_\_ elementary education  
 \_\_\_\_\_ middle school education  
 \_\_\_\_\_ secondary education  
 \_\_\_\_\_ special education  
 \_\_\_\_\_ lateral entry certification  
 \_\_\_\_\_ other (please describe) \_\_\_\_\_

6. My age is:

- \_\_\_\_\_ 21-25  
 \_\_\_\_\_ 26-30  
 \_\_\_\_\_ 31-35  
 \_\_\_\_\_ 36-40  
 \_\_\_\_\_ 41-45  
 \_\_\_\_\_ 46-60  
 \_\_\_\_\_ 61 or older

## **Appendix H**

### **GUIDELINES FOR NARRATIVE**

The written guidelines given to the participants to help them formulate their thinking about the reflective narratives regarding their learning process will direct them to write about experiences where they felt significant learning happened. They will tell what was learned, how that learning changed or revised their practice, and how they learned how to learn in practice. The participants may frame their experience from one or a combination of the following:

1. A situation that occurred over the last six months or year.
2. A situation in which you feel that what you did really made a difference in the classroom or with (a) student/s.
3. A situation that went very well or one that went very badly.
4. A situation that you feel captures what teaching is all about.
5. A situation that was extremely demanding.
6. A run of the mill, ordinary situation you experience in teaching.
7. A situation that you consider “pivotal” in your teaching experience.

The writers will include the contextual background information about the situation (e.g. time, surrounding, support staff, etc.). The objective of the writing is a detailed description of what happened and why it is important or stands out enough to write about. What were the concerns felt or thought about at the time? Specifically describe thoughts and feelings surrounding the incident. What was demanding about the situation? What was learned? How or did the situation change opinions, assumptions, or behaviors?

## Appendix I

### **QUALITATIVE DATA ANALYSIS AUDIT**

#### Dependability Criteria

1. Do the methods of document review and interview fit with the research questions posed?
2. Describe your opinion of the interview guide.
3. Do the concept maps reflect the interviews accurately?
4. Is the category system grounded in the data?
5. Do the matrices serve the intended purpose of comparing across groups and sites?
6. Are the methodological decisions clear, understandable, and sound?
7. Are the methodological alterations defensible?
8. Were the sampling criteria reasonable and defensible?
9. What different methodological decisions would you have made?

#### Confirmability Criteria

1. Are the findings outlined in Chapter 4 confirmable based on the data collected? Are they: grounded in interview data? reflective of concept maps? understandable in light of the categories?
2. Are there areas unexplained in the data?
3. What would you change in the findings sections based on your review?

## QUALITATIVE DATA ANALYSIS AUDIT (Peer Review #1)

### Dependability Criteria

#### **1. Do the methods of document review and interview fit with the research questions posed?**

Yes. There is a strong connectivity between interviews and posed research questions. The interviews and subsequent production and review of concept maps and matrices have the ability to provide sufficient data to answer the research questions.

#### **2. Describe your opinion of the interview guide.**

The interview guide is adequate and should support the researcher's attempt to conduct interviews in a consistent manner. The guide also presents the appropriate balance between structure and flexibility to give the researcher the opportunity to use it as a strong qualitative tool.

#### **3. Do the concept maps reflect the interviews accurately?**

Yes. The development of the concept maps while listening to the tapes of interviews and after the transcribed interviews had been returned from the interviewees for verification of accuracy provides sufficient assurance that the concept maps do, indeed, correctly reflect the interviews.

#### **4. Is the category system grounded in the data?**

Yes. The categories established by the researcher are a logical outgrowth of patterns of responses.

#### **5. Do the matrices serve the intended purpose of comparing across groups and sites?**

Yes. The matrices are an excellent visual tool that supports comparisons across groups and sites.

#### **6. Are the methodological decisions clear, understandable, and sound?**

Yes. The methodological decisions are defensible because they are based on previous research that attempted to use standard and nonidiosyncratic terminology and analytic frames. As such, the study will provide for comparability and translatability.

#### **7. Are the methodological alterations defensible?**

Under consideration was the decision to possibly not include the teachers' written narratives due to their lack of depth and provision of additional information. After review of the narratives, they did not add to the data that had already been collected in the interviews.

**8. Were the sampling criteria reasonable and defensible?**

Yes. It is defensible from the standpoint of the reviewed literature and it did, in fact, provide adequate data from which conclusions could be drawn.

**9. What different methodological decisions would you have made?**

None. The researcher used a contemporary research design that incorporated appropriate instrumentation and data analysis scheme.

Confirmability Criteria**1. Are the findings outlined in Chapter 4 confirmable based on the data collected? Are they: grounded in interview data? reflective of concept maps? understandable in light of the categories?**

Yes. The findings are grounded in interview data. They are reflective of concept maps and matrices and are understandable in light of the categories connected to each research question.

**2. Are there areas unexplained in the data?**

No. There is more than adequate explanation from the data.

**4. What would you change in the findings sections based on your review?**

Nothing. The findings section is complete and reflect a thorough data analysis.

## Qualitative Data Analysis Audit (Peer Review #2)

### Dependability Criteria

**1. Do the methods of document review and interview fit with the research question posed?**

Yes, the methods of document review and interview were connective and substantiated the research questions of how teachers develop expertise in their practice, what makes learning experiences meaningful in the context of practice and how they connect teaching experiences to their staff development. Research literature was cited back to 1986. The more current literature may be more reflective of current teaching dilemmas and classroom application of staff development practices.

**2. Describe your opinion of the interview guide.**

The interview guide and actual interview format with clarifying questions served as a very good tool for getting the needed information. The order of questions, and Ms. Crawford's clarifying questions to participants based on their initial response helped get detailed responses, which could be analyzed.

**3. Do the concept maps reflect the interviews accurately?**

Yes, the concept maps reflected the interviews in a visual way as to see relationships Ms. Crawford was researching. Being very detailed and complex, it may be helpful for one not well versed with reading the maps, to see the specific research question related areas color-coded or shaded; or possibly add a second concept map after the first one with the main points highlighted.

**4. Is the category system grounded in the data?**

Yes, the categories established by the researcher were based on previous research literature as well as the original transcripts I reviewed.

**5. Do the matrices serve the intended purpose of comparing across groups and sites?**

Yes, they demonstrated how the research organizational structure was tied with the interview content. The interview responses, theme, and expertise markers in the matrix was a good visual way to look at the comparison markers across groups and sites.

**6. Are the methodological decisions clear, understandable, and sound?**

Yes, the methodology used supports the questions. The way participating schools were chosen for the study was unclear to me.

**7. Are the methodological alterations defensible?**

Information from the interview transcripts and the methodology were defensible. Seeing the matrix, interviews, and following concept maps gave the total picture. The decision to not include the written narratives was the only alteration in the research plan and was

defensible, as the narratives did not expound upon the information collected in the interviews.

**8. Was the sampling criteria reasonable and defensible?**

Comparing a large high school and a charter high school (much smaller teacher sample to choose from), both in an urban area may give different results than a cross comparison with urban, rural or free-reduced lunch data used for selection of school. Having a list of expert teachers and random selection from this would be something to consider.

**9. What different methodological decisions would you have made?**

I would recommend a wider choice of schools to sample from, taking into account variables listed above. The actual sample size of teachers was good; a more cross representation may reflect different answers to some of the questions. Most of the 14 sample size was in the 1-3 year (5 teachers) and 10 >year category (6 teachers).

Confirmability Criteria

**1. Are the findings outlined in Chapter 4 confirmable based on the data collected?**

**Are they: grounded in interview data? Reflective of concept maps?**

**Understandable in light of the categories?**

Yes, the findings outlined in Chapter 4 are well grounded in the interview data and reflected in the concept maps and matrices.

**2. Are there areas unexplained in the data?**

I thought the interviews, categories, and analysis answered the research questions.

**3. What would you change in the findings section based on your review?**

There would be nothing that I would change based on my review.

## Appendix J

### INSTITUTION REVIEW BOARD – NARRATIVE

#### **A. Introduction**

1. The purpose of this study is to examine the meaning that novice and expert teachers make of their learning process as it relates to their professional development of expertise within authentic working environments.

This research is important because, in adult education, there is a deficiency in the knowledge base and literature with regard to teacher learning and development of expertise in the profession of education.

2. This research proposal is a requirement toward the completion of a dissertation for the Adult and Community College Education doctoral program.

#### **B. Subject Population**

1. There will be approximately fourteen (14) subjects involved in the research.
2. Seven (7) of these individuals will be initially licensed, first year teachers participating in staff development modules within the county over the course of the regular school year. During the first meeting this researcher will be introduced and recruit voluntary participants from this staff development event for the research project pending approval of the school system's Director of Evaluation and Research. As a backup plan for access, this researcher may approach individual school principals for access to initially licensed teachers. Explanation of participation will be oral and in writing. It will be explained that an initial tape-recorded interview and potentially a follow up interview will be a

part of the necessary participation. All participants will be asked to read and confirm accuracy of the transcribed interviews. Additionally, guidelines will be given for participants to complete a written reflective narrative based on a teaching experience. Seven (7) more teachers will be recruited through the use of a “Principal Survey” letter.

3. The total time required of the participants will involve approximately three hours and thirty minutes (3.5) each.
4. All of the participants recruited at this initial staff development event will be inexperienced teachers who are in the classroom for the first time as novice teachers. These expert teachers will be selected for their expertise by their present school principal and must have five or more years of teaching experience. They may be in any level of school and teach any subject. The main criteria is that their professional performance is regarded as exemplary and they will be presently teaching in the classroom.
5. No sampling procedures would be exclusionary on the basis of gender, age, ethnicity, or disability.
6. There is will be no relationship between this researcher and any of the participants.
7. There may be individuals who participate who are pregnant or have physical disabilities by virtue of being in the recruited/voluntary population. The reason that these individuals may participate in this research is that they are representative of the population to be studied.

_____	minors (under age 18)
_____	fetuses
<u>  X  </u>	pregnant women
_____	persons with mental, psychiatric or emotional disabilities
<u>  X  </u>	persons with physical disabilities
_____	economically or educationally disadvantaged
_____	prisoners
_____	elderly
_____	students from a class taught by principle investigator
_____	other vulnerable population.

### C. Experimental Procedures

1. The procedures to be followed will include:

An explanation, orally and in writing, upon recruitment of participants (.25), of exactly what is involve and the time required;

A statement of agreement of confidentiality;

A taped, one-on-one interview of approximately forty-five minutes to one hour (.75 – 1) in length;

Collection of demographic information (.25);

Agreement to read, confirm accuracy of the transcribed interview, and return it to the Researcher (.5);

Agreement to write and use their written narrative for purposes of analysis (.5);

Potentially a one half hour (.5) follow up taped interview.

**D. Potential Risks**

1. After much thought, this researcher is unable to identify and label any potential risks to participants regarding physical, financial, social, legal, or otherwise that could be connected to the proposed procedures in this research project.
2. There will be no request of information that could be deemed of a personal nature regarding private behavior, economic status, sexual issues, religious beliefs, or other matters if made public might impair their self-esteem or reputation or could put the participants at risk of criminal or civil liability.
3. Participants will not be presented with any materials that they might consider to be offensive, threatening, degrading or could produce stress or anxiety.
4. The participants and the researcher will sign a statement of mutual confidentiality regarding the contents of the tapes, transcription of tapes, and the written narrative produced by the participants. Interviews will be recorded on audio-tape during the one-on-one session between the researcher and participant. The narratives will be coded for use by the researcher. If individual responses will be used in the research study, there will be no identifiers of the participants other than to say that the teacher fell into the novice or expert category. The majority of the findings will be presented as group findings.
5. The audio-tapes will be coded rather than bear the participant's name. These tapes will be locked in storage, by the researcher, until all use of them for the research study purpose is complete. The tapes will then be destroyed. The

transcripts will be signed for and read, confirmed for accuracy, and then returned to the researcher who will sign off that the transcript was returned.

6. There is no deception of the participants planned or anticipated during any part of the study.

#### **E. Compensation**

1. The benefit gained by the participant will be a critical thinking experience that will allow him/her to reflect upon the learning processes they use in assimilation of new information. The critical reflection process has been deemed by researchers to be a process that promotes growth and development in the professions.
2. At this time, this researcher does not anticipate extrinsic or monetary compensation. So, since there is no plan for monetary compensation of participants, there will be no provisions for withdrawal with regard to compensation.
3. Participation in the research study proposed carries no credit value.

#### **F. Collaborators**

1. This researcher anticipates no other additional investigators to be included in this proposed research project.

**G. Additional Information**

1. A semi-structured interview will be used in the interview process. A copy of the interview guide, principal's survey, and the data sheet for collection of demographic information is attached to the research proposal.
2. An informed consent form, introductory letter, and documentation form is attached to this proposal.

Appendix K**CODES CORRELATED TO RESEARCH QUESTIONS****DVXPT 1. How do teaching professionals develop expertise in their practice?**

SPEINT	specific instances when staff development ideas were not used
PREVUS	information would've been helpful, but were prevented from using it
DONANY	if you could've done anything with the information from the staff development, what would you've done
WABLYN	were you able to do what you wanted with the development-yes/no
PRVGJ	what prevents you from doing a good job with your students
DESST	describe yourself as a teacher
GDTCHR	what do you believe makes a good teacher
RLSDP	what role does staff development play in your teaching practice
HWDESL	how do you decide what to learn
WHTLRN	what did you learn from it
RELWX	something presented that you related to work or experience
HWDAP	how did you decide what to apply in your classroom
CTCHG	what contributed to the change
XDKAQ	give examples of when you didn't know something that you needed and how you went about acquiring the information you needed

**LRNMN 2. What makes learning experiences meaningful in the context of practice?**

LRELTWX	learning related to your teaching, work, or experience
FSGX	felt strongly or got excited about
AHHA	had an 'ah ha' moment in learning
RECINP	recent incident that made you feel positive about where you work
ENCGJ	what encourages you to do a good job with your students
EFUSD2	did anything you just described about your students affect your use of the information from the staff development
WHTVAL	what do you value in teaching
DESOTS	describe an outstanding teaching situation

**CONXPD 3. How do teaching professionals connect day to day experiences with professional development?**

SDMV	most valuable thing remembered from staff development session
SPEIH	tell specific instances when information was helpful
HWUSIP	tell how you used the information in your teaching practice
ORGSTR	talk about organizational structure of this school

RESCOM	how are responsibilities communicated
MENT	did you have an mentor
POLPRO	how are policies and procedures decided
CHNG	how do things get change
CCOM	how are changes communicated
EFUSD	did the organization affect using staff development
OREN	was there an orientation
AADJP	did you feel that you were allowed an adjustment period
ADMTT	how does the administration treat teachers
MAJPI	describe major political issues at your school
INFGRP	what is the most influential group
BRTSR	who are some of the 'brighter stars' (teachers) who stories or anecdotes are told
URCHG	have you changed since you first entered teaching

## Appendix L

### **CRITIQUE OF CRITERIA USED IN DETERMINING TEACHER EXPERTISE**

This research utilized guidelines and specific criteria in an effort to establish a consistent means by which the expert teachers were selected by their principals. The most often cited author on the subject of teacher expertise, David Berliner's work on *The Development of Expertise in Pedagogy* presented at the Annual Meeting of the American Association of Colleges for Teacher Education (New Orleans, LA, February 17-20, 1988) notes the data collected by studies on this subject. In light of the lack of agreement upon a definition of expertise in the field of teaching and incomplete or developing benchmarks to formulate that definition, this submission of the criteria for critique is necessary. This critique is an attempt to address concerns regarding the selection process of teaching experts utilizing the principal of the school.

The main concern might be the principal's reliance on the guidelines and criteria for selection of expert teacher and/or the degree to which the teachers' reputations influenced or outweighed their selection. A comment for consideration with regard to this qualitative study and the use of the school's principal as the identifier in the expert teacher selection process: syntactical knowledge is a ways and means by which propositional knowledge has been generated and established in virtually all areas of study (e.g. history, sociology, education). This research study utilized the reconstruction of interviewees first hand accounts of personal experiences, ordered inquiry, systematic evaluation, and logical rigor in the search for the truth in an effort to identify the incompleteness of evidence that was to be considered. In the review of the

current literature on teacher expertise, alignment of other elements named to identify expert teachers were discussed in Chapter Two. Apropos to this discussion and critique, is the fact that situated learning theory is under girded by the beliefs that knowledge needs to be presented in the authentic context, settings, and application; and that learning is situationally defined, tool dependent, and socially interactive (Lave & Wenger, 1991; Wilson, 1993). In light of these fundamental beliefs of part of the conceptual framework of this study, it is acknowledged that the opinions held by the principal, regarding the reputation of a teacher selected to participate as an expert, may outweigh their match to the criteria. These opinions could have been influenced by observance of the teacher in the day to day workings of the school. This phenomenon suggests recommendation of further investigation in future studies to examine teacher expertise more closely from the viewpoint of the supervising principal. Therefore, in addition to Berliner's guidelines for identifying expert teachers, this researcher reviewed current literature written on the subject of teacher expertise and identifying characteristics and has presented that research within the literature review. The school principal as the chief administrator, was the gatekeeper for access to the expert teachers in this study. The principal was considered to be the individual to know the most about each teacher selected from the vantage point of having screened their application and personnel folder, interviewed, hired, and supervised each of the participants to be selected. Additionally, the principals were privy to the reputational performance of each of the teachers from their own and other staff members observations and interactions. On the other hand, by virtue of their administrative position and its

demands on their time, the following considerations were generated as a form of critique of each of those criteria:

- ◆ interpreting classroom experiences (phenomena);

Principals, unless they are the personnel determined to observe the teacher and this item (interpreting classroom experiences) is included as a part of a structured routine formative or summative evaluation, most often do not observe this phenomena first hand. Principals are usually only in a teacher's classroom for abbreviated periods of time (or at all – depending upon the administration and the size of the school) during which, most likely, this phenomena would not be foremost in their mind.

- ◆ discerning the importance of events;

Many principals do not know their staff to the degree or well enough that they would be able to judge if the teacher is able to meet this criteria. Again, first hand observation at a relevant time due to the number of staff and size of the school may not be possible.

- ◆ using routines;

Principals, most often, know when a teacher *does not* use routines simply because of the consequences of that action. In other words, this criteria would be considered 'a given' for even an inexperienced teacher and would not be one that would stand out as a criteria used for identifying an expert teacher. Again, how would a principal know unless they were in the teacher's room observing?

- ◆ predicting classroom phenomena;

First hand observance of this skill would be necessary.

- ◆ judging typical and atypical events; and

Unless the principal becomes involved, by a student's or teacher's actions, the ability of a teacher to discern typical from atypical events is, again, an ability that would be observed, reported on over time. This raises the question of - Is it likely that a teacher may be considered an expert simply because of the time that he/she has spent under the supervision of the same principal?

- ◆ evaluating performance: responsibility and emotions.

The principal would be more likely to identify a teacher as meeting this criteria if that teacher has been closer to the principal, in the inner circle of the administration so to speak, or has advised the principal as to their personal feelings on particular topics more than likely over a period of time.

Additionally, P. Benner (1984) in research investigating novice and expert practice of nurses, indicates the following characteristics for consideration of expertise:

- ◆ reliance on abstract principles or use of past concrete experiences as paradigms;
- ◆ understanding (classroom/school) situations as discrete parts or seeing situations as an integrated whole; and
- ◆ acting as a detached observer or an involved performer.

These criteria are also subject to the same scrutiny as those outlined by Berliner.

Observation of these would be more in line with formative and summative evaluation methods.

Further consideration should include Daley's (1999) description of participants in her study not being classified as novices and experts simply on the basis of years of

experience or on the referrals of employers or peers. This issue was specifically brought to the attention of the principals in the discussion of the criteria.

**Appendix M**

**CONCEPT MAPS OF INTERVIEWS**

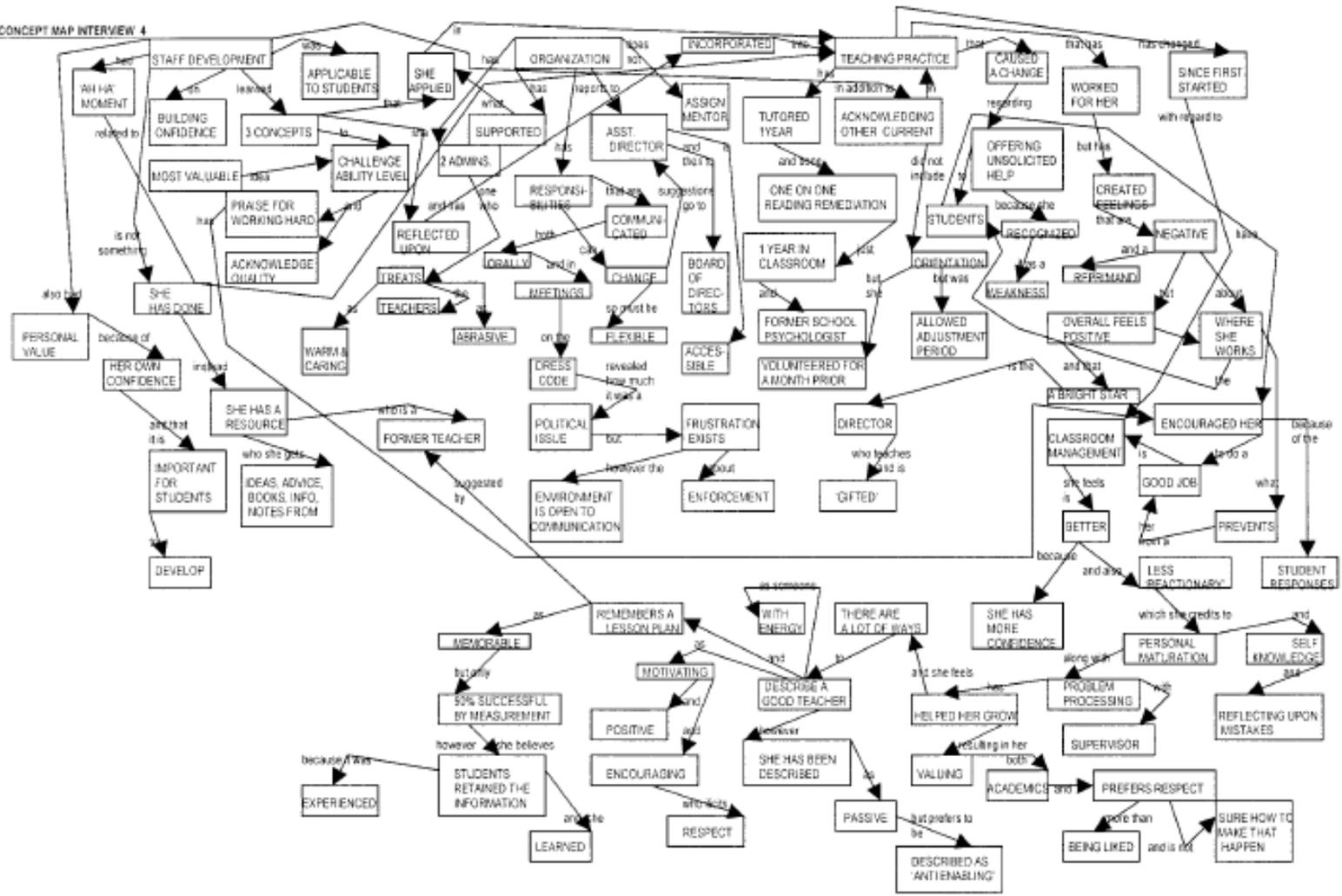
**1-14**



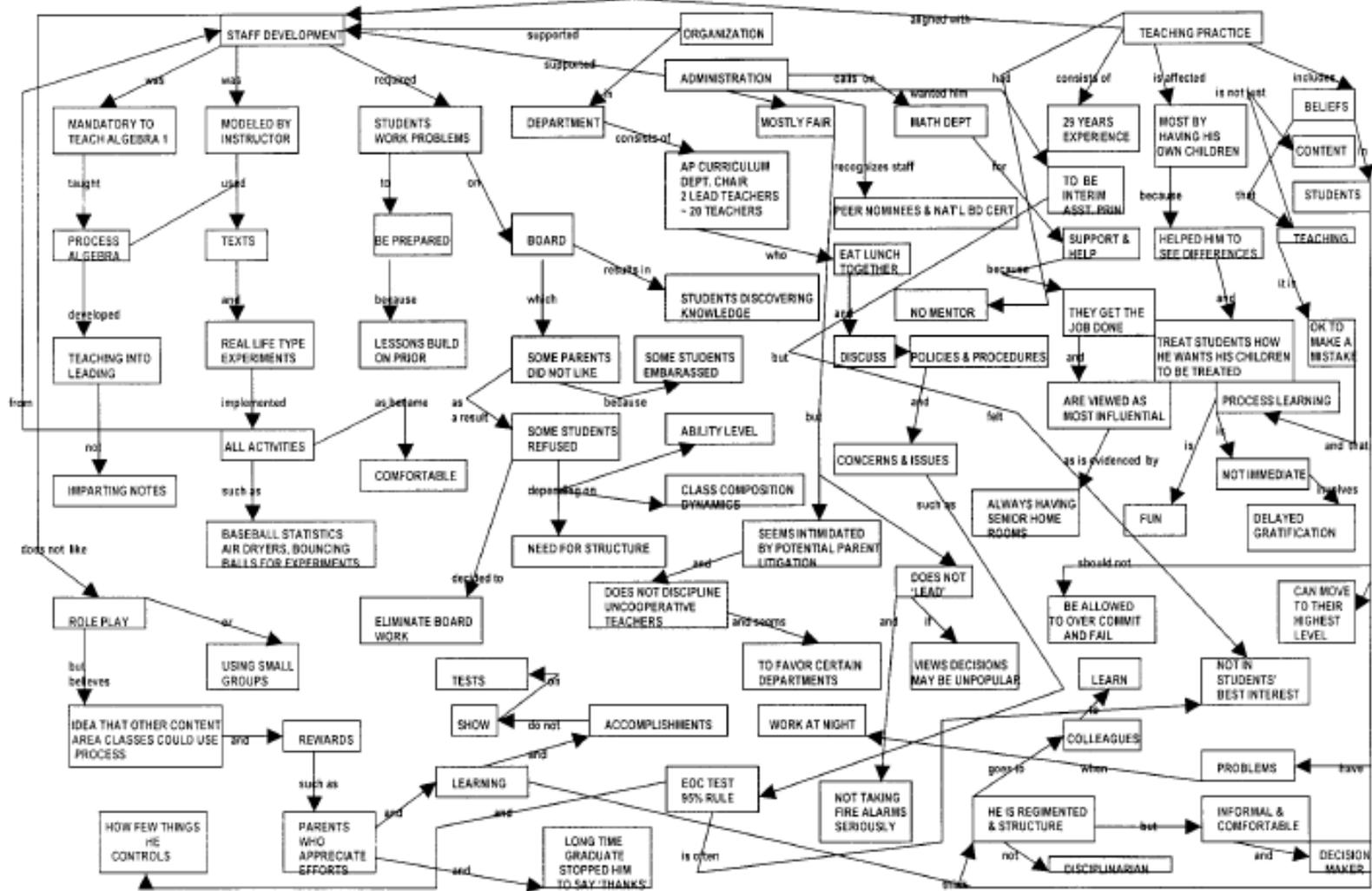




CONCEPT MAP INTERVIEW 4

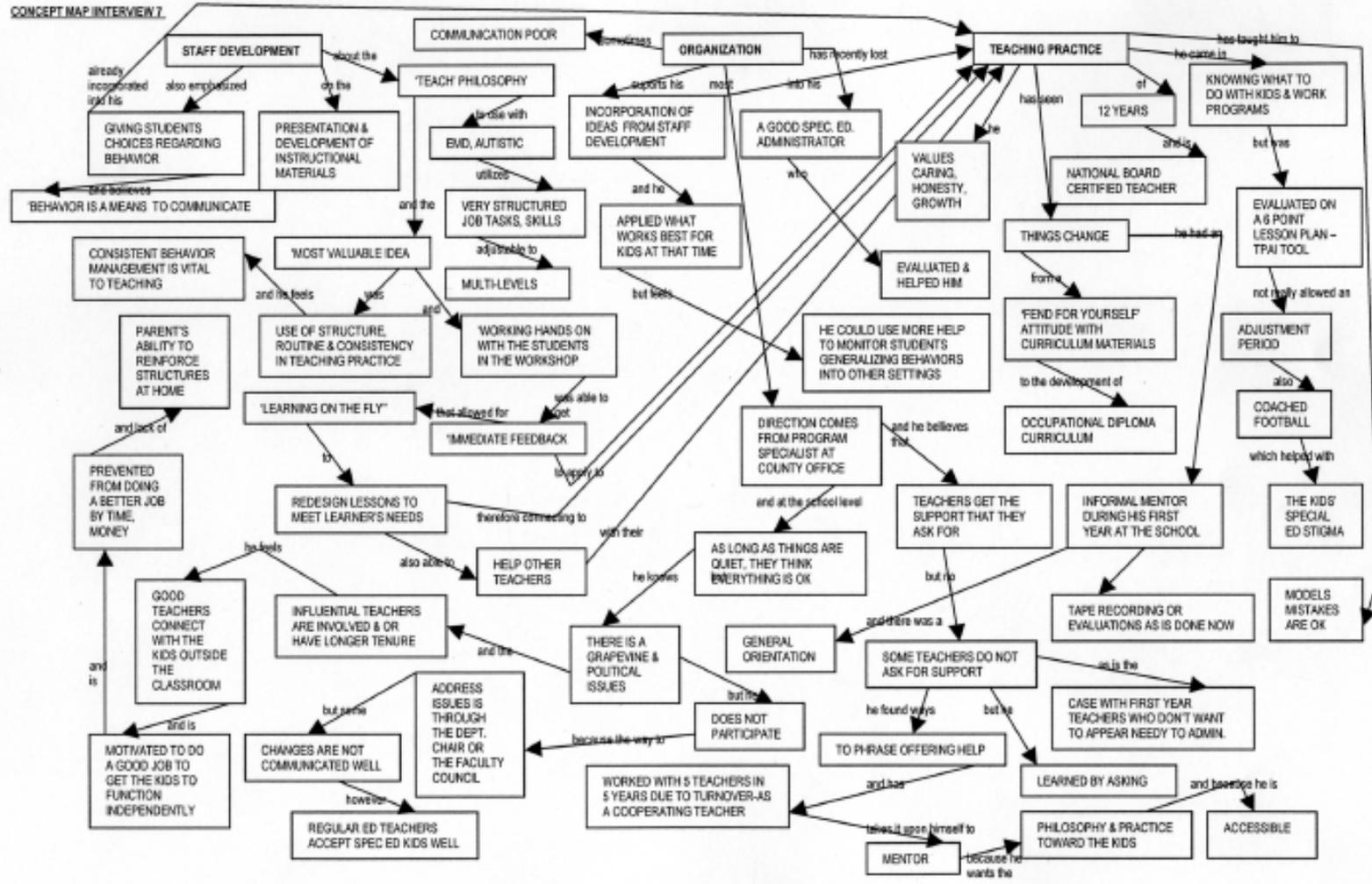


CONCEPT MAP INTERVIEW 1





CONCEPT MAP INTERVIEW 7

















**Appendix N**

**MATRICES 1-3**

**Matrix 1**

**Qualitative Data Analysis Documentation Form**

**(adapted from Daley, 1993, p.297)**

**Matrix 1**  
**Qualitative Data Analysis Documentation Form (adapted from Daley, 1993, p.297)**

Research issue being investigated:

How do teaching professionals develop expertise in their practice?

In this analysis task, specifically what are you trying to do? Is the focus exploratory, confirmatory? Make connections with other analysis.

In this analysis, the focus is to look for examples of expertise development as described by Berliner, Benner, Turner-Bisset. It is confirmatory.

Specific data sets used:

Coded transcripts from fourteen audio-taped interviews with seven novice and seven expert teachers.

Concept maps created for each interview from listening to the tapes.

Berliner's, Benner's, and Turner-Bisset's models of knowledge bases for developing teaching expertise.

Procedural steps. Explain what was done and how.

Review concept maps (see Appendix M) and coded (see Appendix K) interview transcripts.

Work sequentially, keeping a log and anecdotal notes.

Find connections linking coded interview responses to research questions, to knowledge bases research literature, and to concept maps.

Make analytical notes regarding these connections for inclusion in discussion and highlight the quotes to be used in the text.

Decision rules followed during analysis operation.

Include major concepts, relevant answers to specific questions from the interview guide (see Appendix F).

Establish themes connecting the research question, interview responses, and the expertise markers from the knowledge bases.

Identify, for discussion, the indications of expertise development that emerge from the reflections of the novice and those of the expert.

Conclusions drawn from these answers are related to the topics and connected to the research questions; from the research notes, comments or reflections upon,

specific analysis, remarks. Give substance in brief as is related to the conceptual framework theories, links to concept maps, interviews.

Demonstrate what was learned regarding the development of expertise in practice of the novice and the expert: their connection to the staff development; perception of the organization; and of their teaching practice.

Compare and contrast the novice and expert and their relationships to each of the concept areas of staff development; organization; teaching practice.

The matrix will demonstrate examples of the expertise markers from the knowledge bases.

Contents of the matrix relates the responses from all fourteen interviews to this specific research question.

Role: N = Novice, E = Expert

Important themes: DVXPT  
 PREVUS  
 DONANY

PRVGJ  
 DESST  
 GDTCHR

HWDESL  
 WHTLRN  
 RELWX

SPEINT  
 XDKAQ  
 CTCHG

WABLYN  
 RLSDP  
 HWDAP

**Matrix 1: Experts - How do teaching professionals develop expertise in their practice?**

Concept Map#/Role/ Years Experience	Interview Responses	Theme	Expertise Marker
#1/E/25	This presentation wasn't about concrete things you could do ... way of organizing your thoughts about a situation ... they (teachers) took more out of it the day before ... because she gave them concrete things that they could do.	something presented that you related to work or experience; what did you learn from it	General pedagogical knowledge; Knowledge of self; Knowledge of educational contexts; Knowledge of learners
	(the presenter) could see it in the teachers. They are just glazed. It could have been just sitting there and not having to do anything for 2 hours. It's not exactly what you are hoping for in a teacher workshop.	what role does staff development play in your teaching practice	Knowledge of self; Knowledge of educational contexts; General pedagogical knowledge
	I've talked to the teachers ... maybe people will take something away because it is a choice that they make.	specific instances when staff development ideas were not used	General pedagogical knowledge; Knowledge of self
	I think I'm more of a drill sergeant ... I motivate and challenge kids all the time... think they can do it ... I just can be a shrew ... I don't ever want to take anything away from kids ... just to give them that focused attention ... when somebody believes enough in you to work hard for you. I can't see kids loosing from that. That's the one best thing I do for kids ... stay in the process.	describe yourself as a teacher	Knowledge of self; General pedagogical knowledge; Knowledge of learners; Knowledge of models of teaching; Knowledge of educational ends; Knowledge of educational contexts
	You shouldn't praise kids for things that are below them...for being good breathers...I don't do that. I'm almost the other direction ... you've got to work really hard to get that approval ...I hold, I really do have high standards and high expectations.	describe yourself as a teacher	Knowledge of self; General pedagogical knowledge; Knowledge of learners; Knowledge of models of teaching; Knowledge of educational ends; Knowledge of educational contexts

**Matrix 1: Experts - How do teaching professionals develop expertise in their practice?**

<u>Concept Map#/Role/ Years Experience</u>	<u>Interview Responses</u>	<u>Theme</u>	<u>Expertise Marker</u>
#1/E/25 cont'd.	I meter out a little bit of praise here and there, but never for low life behaviors.		
	He went so far as to say that there was a research study that said you should actually apologize to kids if you do something that is too easy for them...the importance of challenging them ...we don't build up their ability because we are not challenging them and we don't build up their self-esteem because we are patting them on the head for things that dogs do.	what did you learn; something presented that you related to work or experience	Knowledge of learners; Knowledge of educational ends; Knowledge of self; Knowledge of educational contexts; General pedagogical knowledge
	we've had two days of meltdowns ...they're scared of failure ... at least we'll have kids who learned how to fail and get up and try again ...	what did you learn: something presented that you related to work or experience	Knowledge of learners; Knowledge of educational ends; Knowledge of educational contexts; Knowledge of self; General pedagogical knowledge; Knowledge of models of teaching; Content knowledge
	... I take criticism for pushing them as hard as I do ... I think that they understand themselves the way that you portray them. If you portray them as idiots, that is how they think of themselves and our kids are not idiots...	describe yourself as a teacher	Knowledge of self; Knowledge of learners; General pedagogical knowledge; Content knowledge; Knowledge of educational ends
	we asked them (teachers) to find 3 ways that they could build self-confidence in themselves or others.	if you could've done anything with the information from the staff development	Knowledge of models of teaching
	you know, I've always felt like my primary job as a teacher was to provoke people. If you are not provoking people, then you are not doing a good job.	describe yourself as a teacher.	Knowledge of self; Knowledge of educational ends; Knowledge of educational contexts;

**Matrix 1: Experts - How do teaching professionals develop expertise in their practice?**

Concept Map#/Role/ Years Experience	Interview Responses	Theme	Expertise Marker
#1/E/25 cont'd.	<p>I can work 20 hours a day...if I'm ever emotional, the whole environment changes because they have an expectation, that I'm always going to know what it is to do. And I have to tell you most of the time, it's bluff. It's just like a lot of teaching is bluff. I mean one of the first things that you learn as a new teacher, that you better fake it sometimes and act like you know what's happening, and figure it out later. Because there are certain things that you just have to do. Just like a kid in and had half his finger cut off on the first day this year and I said, well, I think this is what you do.</p>	describe yourself as a teacher	Knowledge of self; Knowledge of learners; General pedagogical knowledge; Knowledge of models of teaching
	<p>Like when I work with kids, and I shift all the time, I'm more ADD than any of the kids that we have. But it's like, when I know we need to make a move, I make that move. And when I know we need to work on something, we work on something.</p>	describe yourself as a teacher	Knowledge of self; Knowledge of learners; Content knowledge; General pedagogical knowledge; Knowledge of educational ends; Knowledge of educational contexts; Curriculum knowledge; Knowledge of models of teaching
	<p>I mean, there's just so much that you do, by the seat of your pants, and you, thank God after it's over that it was the right thing. And I make a lot of mistakes at school, but I feel like we provide an environment for children to make mistakes, and at the same time we have to provide an environment for adults to make mistakes too.</p>	describe yourself as a teacher	Knowledge of self; General pedagogical knowledge; Knowledge of learners; Knowledge of educational ends; Knowledge of educational contexts
	<p>just being too scattered ... I like being able to focus on and develop concepts ... suck the marrow out of everything that we are doing ... I remember it, the</p>	what prevents you from doing a good job with your students; describe	Knowledge of self; Knowledge of learners; Knowledge of educational ends; General pedagogical knowledge; Content knowledge; Knowledge of

**Matrix 1: Experts - How do teaching professionals develop expertise in their practice?**

<u>Concept Map#/Role/ Years Experience</u>	<u>Interview Responses</u>	<u>Theme</u>	<u>Expertise Marker</u>
#1/E/25 cont'd.	kids remember it ... I'm happiest when I am just teaching science all day long ...but that isn't going to happen when I'm a part time teacher and a full time administrator.	yourself as a teacher	educational contexts; Knowledge of models of teaching
	... most memorable moment in my experience is ...I figured out that teaching was about them and not me.	what contributed to the change	Knowledge of self; General pedagogical knowledge; Knowledge of educational ends; Content knowledge; Knowledge of learners; Knowledge of educational contexts
	well I don't worry so much about the, what I'm comfortable with, or what's easy for me, or what everybody else does. I constantly watch them, and adjust to their needs... I don't know if it will work or not, it's like a crap shoot everyday. It's like, I try something new, sometimes it works, and sometimes it doesn't. When it doesn't work, I toss it out and try something new.	how did you decide what to apply in your classroom	Knowledge of self; General pedagogical knowledge; Knowledge of learners; Knowledge of educational ends; Knowledge of educational contexts; Content knowledge; Content knowledge; Knowledge of models of teaching
	my biggest speech to new teachers when I was a teacher educator, is that, it's not about you, and the sooner that you learn that it's not about you, the better teacher you'll become. And some learn that early, and some teachers never learn that.	what do you believe makes a good teacher	Knowledge of self; Knowledge of educational ends; Knowledge of learners; General pedagogical knowledge; Knowledge of educational contexts
	I mean, when they create the climate, when they make the current shift, those are the exciting moments to me.so it's almost like, the learning lead the way. Whatever the learning is evolving to be, you've got to be willing to shift and go with it. And go with the flow. yea but, for mine, I think the big moment for me, is the kids, get it.	what did you learn from it	Knowledge of self; Knowledge of learners; General pedagogical knowledge; Knowledge of educational contexts; Knowledge of educational ends; Content knowledge; Curriculum knowledge; Knowledge of models of teaching

**Matrix 1: Experts - How do teaching professionals develop expertise in their practice?**

<u>Concept Map#/Role/ Years Experience</u>	<u>Interview Responses</u>	<u>Theme</u>	<u>Expertise Marker</u>
#12/E/16	several tools; not a fix-all; pick what I like, what works for me	learning related to work or experience	Curriculum knowledge
	two-sided notes; Fishbone; how to rearrange things; get them to make choices	learning related to work or experience	Curriculum knowledge; Cognitive knowledge/Knowledge of adaptability from familiarity
	started thinking about the CA class; ideas on sticky notes and about how I was going to incorporate into teaching	learning related to work or experience	General pedagogical knowledge; Use of past concrete experiences
	started pulling all that in and tying it together; remembering stuff from past; connections	learning related to work or experience	Knowledge of models of teaching; General pedagogical knowledge
	one of the things ... CA kids and trying to get them to answer questions ... triggered how we can help (modifications)	how used in practice learning related to experience	Cognitive knowledge/Knowledge of adaptability from familiarity
	unable to implement all due to time constraints; gradually implementing; takes time to regroup and reorganize (teaching)	were prevented from using	Discerning importance; Knowledge of educational contexts
	used the concepts that aligned with current practice; facilitated student self-evaluation	how decided what to use; how used in practice	Knowledge of learners/Cognitive and Empirical; Evaluating performance
	walk my talk; model that I'm doing it; get people on board	were able to do what you wanted with the information	Evaluating performance; Knowledge of self; Knowledge of educational contexts

**Matrix 1: Experts - How do teaching professionals develop expertise in their practice?**

<u>Concept Map#/Role/ Years Experience</u>	<u>Interview Responses</u>	<u>Theme</u>	<u>Expertise Marker</u>
#12/E/16 cont'd.	ultimate reason recruited was to ... create a certain type of program	how decided what to apply in classroom	Understanding situations as an integrated whole; Knowledge of educational ends, purposes, values; Knowledge of educational contexts
	I would describe myself as fair ... tough, but fair, consistent expectation; model for kids, adults; walk my talk	describe yourself as a teacher	Knowledge of self; Evaluating performance
	not a coddler, I'm empathetic, but tell me what you need	describe yourself as a teacher	Knowledge of self
	teachers who ask for help with their deficiencies to improve their teaching and help the kids	what makes a good teacher	Knowledge of self; Knowledge of educational ends
	willing to work hard; have to have the heart; humor; admit mistakes; develop relationships; mostly happy people	what makes a good teacher	Knowledge of models of teaching; Knowledge of self
	supported teaching philosophy; aligned with practice	what did you learn from staff development	Knowledge of self; Knowledge of educational contexts
	it's just layers of things all connecting	what did you learn from staff development	General pedagogical knowledge; Understanding situations as an integrated whole
#5/E/29	a teacher trainer taught the (20 or 25) teachers pretty much the way we were supposed to teach our classes	something presented that you related to work or experience	Content knowledge/substantive and beliefs about the subject; Knowledge of models of teaching
	the method and the way you do teaching is what I'd been doing before anyway. So, it pretty much more or less reinforced what I had already been doing.	something presented that you related to work or experience	Knowledge of self; Knowledge of models of teaching; Curriculum knowledge; Content or subject matter knowledge

**Matrix 1: Experts - How do teaching professionals develop expertise in their practice?**

Concept Map#/Role/ Years Experience	Interview Responses	Theme	Expertise Marker
#5/E/29 cont'd.	<p>you have problems on the board and the kids come in and go up and work the problems ... I've never had the students that would take the initiative .. so it was always a challenge .. I just more or less left that element out... that is one weak part of the program. The part I really didn't care for the most.</p>	<p>specific instance when staff development ideas were not used</p>	<p>Knowledge of self; Knowledge learners; General pedagogical knowledge</p>
	<p>It is more difficult to teach because you have to ... be thinking on your feet, whatever they say, you have to somehow draw it into the problem and into the lesson plan and get it moving in the right direction to get them there...we've had the highest Algebra 1 scores on the End of Test scores for about the past 5 years.</p>	<p>were you able to do what you wanted with the staff development</p>	<p>Knowledge of self; Knowledge of learners; Curriculum knowledge; Knowledge of educational contexts; Knowledge of educational ends; Content knowledge</p>
	<p>we did some experiments with ... showing the students how to collect the data, put it into a graph and come up with the line of best fit. ... collected information during the season and mad a prediction equation.</p>	<p>how did you decide what to apply in your classroom</p>	<p>Knowledge of learners; Knowledge of educational contexts; Content knowledge; Curriculum knowledge</p>
	<p>I don't think that there was anything that we did, that I was not able to use in the classroom. It is just like any other method, you have to be comfortable with what you are doing ... I'm more inclined to keep things in for everybody to participate in. ... probably don't do so muc with cooperative learning groups ... one person was doing all the work... I was more concerned with everybody getting it ... do it as a class.</p>	<p>specific instances when staff development ideas were not used</p>	<p>Knowledge of self; Knowledge of learners; Knowledge of educational contexts; Knowledge of educational ends; Curriculum knowledge; Content knowledge; General pedagogical knowledge</p>

**Matrix 1: Experts - How do teaching professionals develop expertise in their practice?**

Concept Map#/Role/ Years Experience	Interview Responses	Theme	Expertise Marker
#5/E/29 cont'd.	a lot of the hearing impaired and visually impaired, ... have IEPs ... if you don't have a really structured environment for them, they get started wrong and it ruins their entire period. So I think that the class composition pretty much has a bearing on how you are able to do that.	specific instances when staff development ideas were not used	Knowledge of learners; Knowledge of self; Knowledge of educational contexts; General pedagogical knowledge
	it could be applied in other subject areas as well ... if I were in the position to, if I had my own school, and I could make that decision, that would be the one thing that I would try to encourage more of	if you could've done anything with the information from the staff development, what would you have done	Knowledge of self; Knowledge of educational ends; Knowledge of educational contexts; Content knowledge; General pedagogical knowledge; Knowledge of models of teaching; Curriculum knowledge
	everything that we did in the workshop we could use because we used the textbooks and that's what she taught us from...certain things you are more comfortable doing ... it was all connected	how did you decide what to apply in your classroom	Knowledge of self; Knowledge of educational contexts; Knowledge of learners; Content knowledge; Curriculum knowledge; General pedagogical knowledge
#2/E/21	wanted to learn a new way to teach; started charter school to offer an experience based integrated curriculum	example of not knowing something and acquiring that knowledge	Knowledge of educational contexts; Knowledge of learners/cognitive and empirical; Understanding situations as an integrated whole
	how to teach in a way that students retain information and really connect to learning	what was learned	Knowledge of models of teaching; Knowledge of learners/cognitive and empirical; Knowledge of educational ends; Content knowledge/beliefs
	probably between 5 and 7 years of teaching experience decided to start to explore different methods	learning related to work and experience	Knowledge of learners/cognitive and empirical; General pedagogical knowledge; Knowledge of models of teaching; Knowledge of self
	revised lessons to make more effective	what was learned	General pedagogical knowledge; Knowledge of

**Matrix 1: Experts - How do teaching professionals develop expertise in their practice?**

<u>Concept Map#/Role/ Years Experience</u>	<u>Interview Responses</u>	<u>Theme</u>	<u>Expertise Marker</u>
#2/E/21	and efficient		learners/cognitive; Knowledge of models of teaching; Content/syntactical and beliefs; Evaluating performance; Interpreting classroom events
	connected presentation concepts with practice in the workshop	learning related to work and experience	General pedagogical knowledge; Knowledge of learners/cognitive; Content knowledge; Reliance on abstract principles or concrete experiences as paradigms
	thinking about how to implement during the presentation	how did you decide what to apply	Content knowledge; Curriculum knowledge; Knowledge of learners/cognitive; Predicting classroom phenomena
	time to plan and develop, putting out fires	what prevents you from doing a good job	Knowledge of educational context; Discerning importance of events; Evaluating performance
	applied concepts immediately in practice	able to do what you wanted with the information	Curriculum knowledge; Knowledge of learners/cognitive; Content knowledge; Interpreting classroom experience
	continuous reference to the concepts with staff throughout the school year; kept alive	what role does staff development play in your practice	Knowledge of educational ends; Knowledge of educational context; Acting as an involved performer; Seeing situations as a integrated whole
	uninterrupted time to develop curriculum	if you could have done anything with the information	Knowledge of self; Discerning the importance of events
	intensive time put into developing plans pays off with higher quality learning	how do you decide what to apply	Knowledge of content/syntactical/beliefs; Knowledge of models of teaching; Curriculum knowledge
	crisis and emergencies take time away	what prevents doing	Knowledge of educational contexts; Knowledge of

**Matrix 1: Experts - How do teaching professionals develop expertise in their practice?**

<u>Concept Map#/Role/ Years Experience</u>	<u>Interview Responses</u>	<u>Theme</u>	<u>Expertise Marker</u>
#2/E/21 cont'd.	from teaching and the kids; have to do what you have to do	a good job	educational ends; Understanding situations as an integrated whole; Judging typical and atypical events
	changed 360 degrees; experience precedes knowledge	to what to you attribute the change in the way you teach	General and Pedagogical content knowledge
	care about kids; know "it is not about me"; "I am a tool to work with kids"; build kids; challenge them; separate the behavior from the kid	describe yourself as a teacher	Knowledge of self; Knowledge of learners/empirical and cognitive; Evaluating performance/responsibility and emotions; General pedagogical knowledge
	if you care about teaching ... you'll do what the kids need, even if it is hard for you	what makes a good teacher	General and pedagogical knowledge
	take a theory and tie activities to it; ask questions with answers draw from experience to develop knowledge of theory	learning related to work and experience	Knowledge of content; Curriculum knowledge; Knowledge of models of teaching; Predicting classroom phenomena
	about a student – I read his/her patterns, etc; about content/subject-internet; about methodology – to an 'expert'	how do you go about learning something that you don't know	General and pedagogical knowledge; Evaluating performance; Interpreting experiences
#6/E/25	I'm not so sure ... I'm an old dog at this trick. I'm not sure there are an awful lot of new things that are out there that I haven't already used one hundred thousand times. I already knew everything that she said ... what I learned from that was how to teach it to somebody else.	what did you learn	Knowledge of self; Knowledge of models of teaching; Knowledge of educational contexts; Knowledge of educational ends; General pedagogical knowledge
	... I tell my ILTs that you're not going to be a teacher like anybody else is a teacher, ever... a	something presented that your related to	Knowledge of self; General pedagogical knowledge; Content knowledge/beliefs; Knowledge of models of

**Matrix 1: Experts - How do teaching professionals develop expertise in their practice?**

Concept Map#/Role/ Years Experience Interview Responses	Theme	Expertise Marker
#6/E25 cont'd.  lot of things she (the presenter) was doing that I would probably never do. I would never be a 'okay, everybody let's solve the problem together' kind of person ...not my role in the classroom ... more structured and controlling ... not part of my personality ... direct and to the point ... let's get this done and then move on ...	work or experience; specific instances when staff development ideas were not used	teaching; Knowledge of learners; Knowledge of educational contexts; Knowledge of educational ends
I liked the meat of what she was saying, but I believe that learning and teaching is a collaborative effort ... I just do it a whole lot more efficiently and quickly than she does it, and it works for me ... her style probably wouldn't work for me.	were you able to do what you wanted with the information from the staff development	Knowledge of self; Knowledge of learners; Knowledge of content; Knowledge of educational contexts; Knowledge of models of teaching; General pedagogical knowledge
she was talking about, at the beginning of the year, spending all this time ... let's all decide what the rules are ... modeled that ... I don't talk about rules in my classroom. Never.	specific instances when staff development ideas were not used	Knowledge of self; Knowledge of learners; General pedagogical knowledge; Knowledge of educational contexts; Knowledge of educational ends
there were lots of things that she did that I do automatically in my classroom ... I have tried to be more 'you know -this is a problem, do agree that this is a problem?'	how did you decide what to apply in your classroom	Knowledge of learners; Knowledge of educational contexts; General pedagogical knowledge; Knowledge of self
I've got one girl ... what you said you wanted ... is this behavior getting you what you want? ...those are things that I have done for years but, I think now I'm trying to be more conscience of when I use them with a student.	how did you decide what to apply in your classroom	Knowledge of self; Knowledge of learners; General pedagogical knowledge; Knowledge of educational contexts
I don't see a reason to spend 15 minutes	specific instance when	Knowledge of self; Knowledge of learners; Know-

**Matrix 1: Experts - How do teaching professionals develop expertise in their practice?**

Concept Map#/Role/ Years Experience	Interview Responses	Theme	Expertise Marker
#6/E25 cont'd.	<p>talking about what they think is good behavior with a sub (substitute teacher).</p>	<p>staff development idea was not used</p>	<p>ledge of educational contexts; General pedagogical knowledge</p>
	<p>it doesn't take my students long to know, they come in, totally intimidated by me, my directness, my assertiveness and even my physical presence, is huge, so .. it doesn't take them long to know exactly where they stand with me, at every single second of the game. ... I just want you to know that I am having a problem with your behavior...they will never get blindsided by me.</p>	<p>describe yourself as a teacher</p>	<p>Knowledge of self; General pedagogical knowledge; Knowledge of learners; Knowledge of educational contexts; Knowledge of models of teaching</p>
	<p>plus delta thing... the wave of the future. What I do with my ILTs is say, okay, tell me about this I observed, tell me the weaknesses and the strengths.</p>	<p>how did you decide what to apply</p>	<p>Knowledge of educational contexts; General pedagogical knowledge; Knowledge of educational ends; Knowledge of educational contexts; Knowledge of models of teaching; Content knowledge</p>
	<p>it needs to be simplified for teachers... more extensive in very clear ... it doesn't work ... have to use other things ... too broad ended ... we have EOC tests and curriculums to get over. If I had to do it, I would do it more limited and structured.</p>	<p>if could have done anything with the information from the staff development, what would you have done</p>	<p>Knowledge of educational ends; Knowledge of educational contexts; Knowledge of models of teaching; Content knowledge; General pedagogical knowledge; Knowledge of learners; Knowledge of self</p>
#7/E/12	<p>knew what was expected of them ... I'd rotate to make sure all was alright ... knowing what to expect ... soothing, relaxing ... not a surprise to them ... anticipate the next step</p>	<p>something presented related to your work or experience</p>	<p>Knowledge of models of teaching; Knowledge of learners/empirical and cognitive</p>
	<p>sometimes, with the ability levels within a classroom, you'll have more success with some than with others ... you're always to the median. Some kids will get done faster, some won't get done ...</p>	<p>something presented related to your work or experience</p>	<p>Knowledge of learners; Knowledge of educational contexts; Knowledge of self</p>

**Matrix 1: Experts - How do teaching professionals develop expertise in their practice?**

<u>Concept Map#/Role/ Years Experience</u>	<u>Interview Responses</u>	<u>Theme</u>	<u>Expertise Marker</u>
#7/E12 cont'd.	have to try to juggle that.		
	need for consistency, structure, routine whether it is academic or behavioral	what did you learn	Knowledge of learners/empirical and cognitive; Knowledge of educational contexts
	able to work hands on with the kids and apply lessons that we designed	what did you learn	Knowledge of educational contexts; Knowledge of learners/adaptability from familiarity; Knowledge of self
	thinking a lesson will work ... then it flops; shouldn't have done that ... do it this way instead; redesign the lesson; learning on the fly	learning related to work or experience	Knowledge of self; Knowledge of learners/adaptability from familiarity
	social cues ... kids who are autistic don't read them	learning related to work or experience	Knowledge of learners/empirical and cognitive
	I think that is a level of trust that's been established here. I'd been here 6 years before I went to the workshop, so I think the administration knew I wasn't going to do anything crazy or wild.	were you able to do what you wanted with the staff development	Knowledge of educational ends, purposes, and values both in short term and long term; Knowledge of models of teaching
	students didn't need it or wouldn't be applicable for the kids at that time	information would have been helpful, but were prevented from using	Knowledge of learners; Knowledge of educational contexts
	I guess the one wish would be more man power to help enforce it ... juggling four differencet schedules ... it is hard to keep up, follow up, monitor	if you could have done anything with the information from the staff development	Knowledge of educational contexts

**Matrix 1: Experts - How do teaching professionals develop expertise in their practice?**

<u>Concept Map#/Role/ Years Experience</u>	<u>Interview Responses</u>	<u>Theme</u>	<u>Expertise Marker</u>
#7/E12 cont'd.	I may know these things, but my co-teacher doesn't know them ... (it would have been allowed to pass on the information), it is coordinating schedules with everybody and feeling comfortable enough with the material that you could go ahead and do it yourself	if you could have done anything with the information from the staff development	Knowledge of self; Knowledge of educational contexts; Knowledge of models of teaching
#3/E/7	teachers model how the staff development concepts were to be used in class	most valuable part	Knowledge of models of teaching; Curriculum knowledge; Acting as an involved performer
	gave examples, modeled, reflected	what I learned	Knowledge of models of teaching; Content knowledge/beliefs; Reliance on abstract principles or use of past concrete experiences as paradigms
	reflected on process; "Ah Ha moment"	what I learned	Knowledge of educational contexts; Knowledge of learners/cognitive; Evaluating performance; Interpreting classroom experiences
	gave structure to the process	learning related to work and experience	Knowledge of learners/cognitive; Curriculum knowledge; Interpreting classroom experiences; Understanding situations as an integrated whole
	became excited about idea of using process with students	how decided what to apply	Knowledge of models of teaching; Predicting classroom phenomena; Interpreting classroom experiences Knowledge of learners/cognitive
	had not taught that way before	contributed to change	Knowledge of educational ends; Understanding situations as an integrated whole; Evaluating performance Knowledge of models of teaching
	have started doing group work and it is better than working individually;	learning related to work and experience	Knowledge of models of teaching; Curriculum knowledge; Interpreting classroom experiences; Know-

**Matrix 1: Experts - How do teaching professionals develop expertise in their practice?**

<u>Concept Map#/Role/ Years Experience</u>	<u>Interview Responses</u>	<u>Theme</u>	<u>Expertise Marker</u>
#3/E/7 cont'd.	was modeled in workshop		Knowledge of learners/cognitive/empirical
	have not used rubrics	ideas were not used	Content knowledge; Curriculum knowledge
	did not change lesson to accommodate level of students	ideas were not used	Knowledge of learners/cognitive; Curriculum knowledge
	another "Ah Ha moment" when level of lesson was deepened	learning related to work and experience	Knowledge of learners/cognitive/empirical; Content knowledge; Knowledge of models of teaching
	so many of the students have difficulty attending	prevents doing a good job	Knowledge of learners/cognitive/empirical; Knowledge of educational contexts
	coworker/mentor contributed to changes in teaching practice	what contribute changes	Knowledge of models of teaching; Knowledge of educational contexts; Knowledge of learners
	good teacher respects student; discipline nicely and not ruin the relationship	describe yourself as a teacher	Knowledge of self; Evaluating performance; Knowledge of educational contexts; Knowledge of learners
	good teachers always evaluate, reflect	what makes a good teacher	Knowledge of self; Evaluating performance Knowledge of educational ends

**Matrix 1: Novices - How do teaching professionals develop expertise in their practice?**

<u>Concept Map#/Role/ Years Experience</u>	<u>Interview Responses</u>	<u>Theme</u>	<u>Expertise Marker</u>
#14/N/3	did a lot of different activities; did not understand purpose of some; one item out of whole day beneficial; goals too far out	what did you learn	Knowledge of educational ends; Knowledge of models of teaching; General pedagogical knowledge; Understanding situations as discrete parts or integrated whole
	one exercise affirmed what she knew	learning related to work or experience	Knowledge of educational contexts; Knowledge of self; Evaluating performance/responsibility & emotions
	no way to adapt examples for secondary or for subject area	prevented from using	Knowledge of learners; Knowledge of models of teaching; Curriculum knowledge; Reliance on abstract principles or concrete experiences as paradigms
	shallow connection with communication activity	learning related to work or experience	Knowledge of educational contexts
	have not changed a thing because of staff development	have you changed practice	Knowledge of self; Content knowledge/beliefs
	have not implemented one idea because of lack of time	prevented from using	Content knowledge/ beliefs; Discerning the importance of events; Using routines
	does not feel inclined to take the time to implement because does not feel kids would connect with it	prevented from using	Knowledge of learners/ empirical and cognitive; Knowledge of educational contexts; Using routines
	having so many students; 5 classes total approximately 135 students	prevents doing good job	Knowledge of educational contexts; Knowledge of learners/empirical and cognitive

**Matrix 1: Novices - How do teaching professionals develop expertise in their practice?**

<u>Concept Map#/Role/ Years Experience</u>	<u>Interview Responses</u>	<u>Theme</u>	<u>Expertise Marker</u>
#14/N/3 cont'd.	I can tell I'm becoming a better teacher by the way I explain things	what was learned	Knowledge of self; Evaluating performance/responsibility and emotions; Knowledge of learners/cognitive; Knowledge of educational contexts; Content knowledge
	the better I understand, the better my kids do	learning related to work and experience	Knowledge of self; Evaluating performance/responsibilities and emotions; Predicting classroom phenomena; Knowledge of learners/cognitive
	experiences and colleagues, not staff development	contribute changes to	Knowledge of educational contexts; Evaluating performance; Knowledge of models of teaching; Knowledge of self
	'brought into the fold through practice'	contribute change to	Knowledge of educational contexts
	high standards; laid back; make it enjoyable light-hearted; not good at picking battles sometimes-need to work on that; should be more open and willing to try new things	describe self as teacher	Knowledge of self; Evaluating performance/responsibilities and emotions; Judging typical and atypical events
	my life is not teaching, I have other things	describe self as teacher	Knowledge of self
	value that I can be a role model for the girls; a silent witness	describe self and what you value	Knowledge of self; Knowledge of learners/empirical and cognitive; Knowledge of educational ends
	care about kids and their performance to also guide decisions in classroom	what do you believe makes a good teacher	Knowledge of learners/cognitive and empirical; Knowledge of educational ends
	go to my colleagues first	how decide what to learn	Knowledge of self; Knowledge of educational contexts; Knowledge of models of teaching

**Matrix 1: Novices - How do teaching professionals develop expertise in their practice?**

Concept Map#/Role/ Years Experience	Interview Responses	Theme	Expertise Marker
#14/N/3. cont'd.	department is doing technology staff development	how decide what to learn	Knowledge of educational ends; Content knowledge; Curriculum knowledge
	"I felt affirmation that this is where I need to be and what I need to be doing. I have room to improve , but I am successful with this."	what was learned	Knowledge of self; Evaluating performance/ responsibility and emotions
#4/N/1	I see a more positive response from kids when I say, "oh you worked really hard on this ..."	how did you decide what to apply in your classroom	Knowledge of learners
	trying to eliminate busy work and provide challenges ... make the assignments require some thought... not so much ... that it is impossible for them...trying to find a balance.	something presented that you related to work or experience	Knowledge of learners; Content knowledge; General pedagogical knowledge; Knowledge of models of teaching
	I let them know I am available if they need help, but I'll be over there ... not stand beside them ... give unsolicited help because it is an insult	how did you decide what to apply in your classroom	Knowledge of learners; General pedagogical knowledge; Knowledge of models of teaching
	in writing my lesson plans ... is this challenging enough?... providing a challenge is going to be instilling confidence in kids ... and they are going to be more likely to arise to the challenge.	something presented that you related to work or experience	Knowledge of learners; General pedagogical knowledge; Knowledge of models of teaching; Content knowledge
#11/N/6 mon.	a lot of things were not told about how to apply to the classroom; examples were for different age/grade; ideas not really explained that well	not able to apply staff development ideas	Reliance on abstract principals or use of past concrete experiences as paradigms; General pedagogical knowledge; Curriculum knowledge
	tried to apply team work and group activities	what was applied	Knowledge of learners; Curriculum knowledge

**Matrix 1: Novices - How do teaching professionals develop expertise in their practice?**

Concept Map#/Role/ Years Experience	Interview Responses	Theme	Expertise Marker
11/N/6 mon.	group work inspires them to further their understanding through others' ideas	what was learned	Syntactical content knowledge; Cognitive knowledge of learners; Interpreting classroom experiences
	adapted competitive group review game	learning related to experience	Interpreting classroom experiences; Knowledge of learners/cognitive & empirical; Curriculum knowledge
	students completed, but responded negatively	learning related to experience	Knowledge of self; Knowledge of learner/cognitive & empirical; Curriculum knowledge; General pedagogical knowledge
	indicated that students were from "not good families" and don't participate, get involved	prevented from doing good job	Understanding situations as discrete parts or seeing situations as an integrated whole; Knowledge of self; Knowledge of models of teaching; Knowledge of educational ends; Knowledge of learners
	information in staff development was "raw material" ; not told how to adapt to use; "Where do we start? what do we do first? It was so dry."	prevented from using	Curriculum knowledge; Cognitive knowledge of learners; Reliance on abstract principles or use of concrete experiences as paradigms
	decided to use activity, but because of student response, chose not to modify or use again	decide what to apply	Understanding situations as discrete parts or seeing situations as an integrated whole; Knowledge of self; Evaluating performance/responsibility and emotions
	would like more parental, administrative involvement; discipline issues; coaching	if could have done anything with info	Evaluating performance/responsibility and emotions Knowledge of self; Knowledge of educational ends; Knowledge of models of teaching
	lack of time	prevented from using staff development ideas	Discerning the importance of events

**Matrix 1: Novices - How do teaching professionals develop expertise in their practice?**

<u>Concept Map#/Role/ Years Experience</u>	<u>Interview Responses</u>	<u>Theme</u>	<u>Expertise Marker</u>
#11/N/6 mon. cont'd.	discipline issues impact instruction	prevents doing a good job	Evaluating performance/responsibility and emotions; Knowledge of self; Empirical knowledge of learners
	going to change regarding discipline; implement consequences, be consistent	learning related to experience; what was learned	Knowledge of self; Evaluating performance/responsibility and emotions; Knowledge of educational contexts; Using routines
	more efficient about planning; ideas	what was learned	Knowledge of curriculum; Using routines; Evaluating performance/responsibility and emotions; Knowledge of self
	need to be more strict, less boring; need to adapt activities for all	describe self as teacher	Knowledge of self; Knowledge of educational ends; Cognitive knowledge of learner; Curriculum knowledge; Evaluating performance/responsibility and emotions
	capture the kid's interest and teach them; have fun, enjoy	what makes a good teacher	Understanding situations as discrete parts or integrated whole; Cognitive knowledge of learners; Content knowledge/beliefs about subject
	rely upon more experienced teachers' suggestions, opinions, feedback	how do you decide what to learn	Knowledge of models of teaching; General pedagogical knowledge; Curriculum knowledge
	prefer to seek knowledge from colleagues, mentor, department chair in one on one	what role does staff development play in your learning	Knowledge of models of teaching; Curriculum knowledge; General pedagogical knowledge
#8/N/2	gave us some graphic organizers...as a child I ... I don't remember using graphic organizers...I think they can be very effective... and sticky notes...organized by unit to review	something presented that related to work or experience	General pedagogical knowledge; Knowledge of models of teaching; Content knowledge; Knowledge of learners; Curriculum knowledge

**Matrix 1: Novices - How do teaching professionals develop expertise in their practice?**

Concept Map#/Role/ Years Experience	Interview Responses	Theme	Expertise Marker
#8/N2 lat. cont'd.	I think I went looking for answers ... hoping that I could find out how to motivate those students that I can't motivate. I'm not convinced that I discovered that ... came out with some good ideas, but I didn't come out with answers. I don't think the answers are that easy.	what role does staff development play in your teaching practice	Knowledge of self; General pedagogical knowledge; Knowledge of educational ends; Knowledge of learners; Curriculum knowledge
	I would've liked teachers to have related to me ... I never remember a teacher I really connected with that cared above and beyond ...I never really thought they truly cared. So I got into this cause I care and I try really hard to let students know that I care, to give them the benefit of the doubt when things are going bad.	describe yourself as a teacher	Knowledge of self; General pedagogical knowledge; Knowledge of models of teaching; Knowledge of learners
	we're in the lab every week at least once...I'm exhausted by the end of the day cause I don't sit down...I don't answer questions straight out., I ask questions back...thinking on my feet the entire	describe yourself as a teacher	Knowledge of learners; Knowledge of educational contexts; Knowledge of models of teaching; Content knowledge; General pedagogical knowledge; Knowledge of self
	some things I just shut off ...others I'm going to come back and look at things this summer while I've got time ... we're doing puzzles as part of the review ...hands on manipulative stuff ... work well. it's a juggling act every day (with time and covering the required curriculum). everybody I worked with .. a lot of them were sharing experiences ... you always benefit from those people's experiences.	how did you decide what to apply in your classroom  something presented related to work or experience	General pedagogical knowledge; Content knowledge; Knowledge of educational ends; Knowledge of educational contexts; Knowledge of learners; Curriculum knowledge; Knowledge of models of teaching; Knowledge of self  Knowledge of models of teaching; General pedagogical knowledge; Knowledge of self

**Matrix 1: Novices - How do teaching professionals develop expertise in their practice?**

Concept Map#/Role/ Years Experience	Interview Responses	Theme	Expertise Marker
#8/N/2 lat. cont'd.	with advanced students ...we did a Venn diagram... in ten minutes...they know the information...with academic students, I'm spoon feeding them everything... not do much on their own...trying to get value out of class time.	how do you decide what to apply in your classroom	Knowledge of learners; Knowledge of educational ends; Content knowledge; Knowledge of models of teaching; Knowledge of self
	I would've asked to observe some teachers that are using it well. That's the one thing that I want more than anything as a new teacher, is time to observe good teachers, and I don't have it.	if you could have done anything with the information from the staff development what would you have done	Knowledge of models of teaching; Knowledge of self; General pedagogical knowledge; Knowledge of educational contexts; Curriculum knowledge
	I have names...I am going to observe teachers for specific things ...like the amount of chatter that goes on in my advanced classes...	give example of when you don't know something that you needed and how you went about acquiring the information	Knowledge of self; Knowledge of educational ends; Knowledge of educational contexts; Knowledge of models of teaching
	I've tried a number of things...seating..none have improved it...what I need to do is watch an experienced teacher who teaches advanced students and see how they manage their class.	give example of when you don't know something that you needed and how you went about acquiring the information	Knowledge of models of teaching; Knowledge of self; General pedagogical knowledge; Knowledge of educational contexts
	survival. You have to (change). Students tell you ...(experience with writing a test) they were upset. You have to learn.	what contributed to the change	Knowledge of self; Knowledge of educational contexts; Knowledge of learners; General pedagogical knowledge
	acquisition of knowledge and coworkers together... plan the unit together ...if you go through it this they can get it... I have modified significantly based on where they stumbled last year.	what contributed to the change	Knowledge of self; General pedagogical knowledge; Content knowledge; Knowledge of models of teaching; Knowledge of learners; Knowledge of educational contexts

**Matrix 1: Novices - How do teaching professionals develop expertise in their practice?**

Concept Map#/Role/ Years Experience	Interview Responses	Theme	Expertise Marker
#8/N/2 lat. cont'd.	I ask for a lot of student feedback... I put it on the back of my interim, a questionnaire...I've got some good suggestions ...I ask what they think about this, about that.	describe yourself as a teacher	Knowledge of self; General pedagogical knowledge; Knowledge of educational ends; Knowledge of learners; Knowledge of educational contexts
	we have to teach students how to think and not how to get an A ...getting those students to be motivated to be thinkers ...	describe yourself as a teacher	Knowledge of self; General pedagogical knowledge; Knowledge of educational ends; Knowledge of learners; Content knowledge; Knowledge of models of teaching
	I believe they have to care... know the curriculum...have to come to school willing to get that across to students ... you have to put it (caring knowing the curriculum) together and be able to communicate it...look in their faces... care enough to say, I know you're not getting it, where did you get stuck?	what do you believe makes a good teacher	Knowledge of self; General pedagogical knowledge; Knowledge of learners; Content knowledge; Knowledge of models of teaching; Curriculum knowledge
	I have not had the opportunity to do much staff development...been begging for things in Science like the calculators, probes, labs, graphing ...	what role does staff development play in your teaching practice	Knowledge of models of teaching; Content knowledge; Knowledge of learners
#10/N/3	students only want to work with certain students... work together as a team...see that as a challenge... importance of working together...prepare for job	how did you decide what to apply	Knowledge of learners; Knowledge of educational ends; Knowledge of models of teaching
	range of ability levels...far my biggest challenge... diversity of the range	prevents doing a good job	Knowledge of learners; Curriculum knowledge
#13/N/2.5	OK to let the students have input	learning related to work	Knowledge of learners; Knowledge of educational ends

**Matrix 1: Novices - How do teaching professionals develop expertise in their practice?**

<u>Concept Map#/Role/ Years Experience</u>	<u>Interview Responses</u>	<u>Theme</u>	<u>Expertise Marker</u>
#13/N/2.5 cont'd.	if your classroom's not like a community, no one is learning anything	how did you decide what to apply	Knowledge of learners; Knowledge of models of teaching; Knowledge of educational contexts
	emotionally involved ... stern, snap in a second... always try to do a good job...	describe self as a teacher	Knowledge of self
	when people have epiphanies its because they have known something all along and it finally gets versed the right way and they realize the truth ...	what did you learn	Knowledge of models of teaching; General pedagogical knowledge
	understanding, love of children...ability to empathize with young people... not being a dictator	what do you believe makes a good teacher	Knowledge of models of teaching; General pedagogical knowledge
#9/N/2	time is a big factor. I choose to do other things outside of the classroom...definitely time keeps me from doing better...and discipline...interfere	what prevents you from doing a good job	Knowledge of models of teaching; Knowledge of self General pedagogical knowledge
	strength in organization ...overly prepare...if it doesn't go perfect I get down on myself...I think about the kid that wears the same clothes all the time...take that personally...have high expectations	describe self as a teacher	Knowledge of self; General pedagogical knowledge; Knowledge of models of teaching
	someone who can explain things in a way that students can understand...get on their level...to be a role model...do good things...	what do you believe makes a good teacher	Knowledge of self; Knowledge of models of teaching General pedagogical knowledge; Knowledge of educational ends

**Matrix 2**

**Qualitative Data Analysis Documentation Form**

(adapted from Daley, 1993, p.297)



**Matrix 2: Expert Responses - What makes learning experiences meaningful in the context of practice?**

<b>What was learned?</b>	<b>Connection that made meaningful</b>	<b>Teaching practice affected behavior</b>
#2 how to build on prior knowledge in lessons	took risks to explore student participation	raised expectations of student performance
#2 affect of concrete, sequenced, tangible lessons	efficiency of learning	moved students more quickly through curriculum
#2 why certain methods work	comparing theoretical concepts to practice	confidence in practice, aligned with beliefs
#2 students able to demonstrate learning through teaching others	observed students taking risks to teach	affirmed practice of student participation
#2 to gain trust through teaching mistakes are OK"	student defense mechanisms go down	encouraged to continue to work for the "bloom"
#2 teachers are tools	care enough to abandon old ways, take risks	teach to what the student needs, not what is easy
#2 teaching concepts from concrete student observations	developed activities around theory	elevated student performance and involvement
#2 teaching is a process, not an event	student's year end portfolio presentation	reflected upon school year and encouraged to go on
#12 need a variety of tools	as it is in anything, you have to have several tools to do what you need	offering choices to students and adults
#12 how to use graphic tools	reflected upon class and how to incorporate	able to better arrange learning for students
#12 a variety of strategies	drew from prior experience to write down how to use back in classroom and with adults	aligned presented information with practiced behavior and refreshed beliefs
#12 related concepts	reflected upon previously learned theories	related new learning to practice and tied it in
#12 takes issue with teachers and those who are not aware about their abilities or inability	when the students are suffering due to teacher deficiencies	looks for teachers with awareness of their practice who are honest about their abilities
#12 feels strongly about teachers who are not self-evaluating their abilities	impact upon students	helps teachers to self-evaluate
#3 teaching methods philosophy with practice	modeled for her by other expert teachers, reflected upon, and discussed	able to comfortably use methods, aligned

**Matrix 2: Expert Responses - What makes learning experiences meaningful in the context of practice?**

<b>What was learned?</b>	<b>Connection that made meaningful</b>	<b>Teaching practice affected behavior</b>
#3 process of project based learning	being guided through the process	gave structure to teaching, more confidence
#3 how to make it work	implemented process with students	facilitated students in engaged, group learning
#3 how to get to deeper thinking with students	designed lesson plan, practiced the lesson, observed student responses to questions	questioning students to develop their learning
#3 value of relationships with co-workers	group work done in staff development	go to teachers with particular strengths for specific needs
#3 students taking responsibility for helping	student advocated for another	revisited when and how to offer help to student
#3 student defenses crumble	working with student one on one	understanding and separating the behavior from the student
#3 group process behavior	learning as a group, interacting, the students behavior is more productive	working within the group process to teach and manage behavior
#3 talk less and facilitate the student's work more	students interacting during group work	keep instructions short and simple, get on to doing
#3 how to revise lessons to fit learner's need	student involvement improved	regularly self-evaluating, reflecting, and thinking about class
#3 evaluating student's reading and writing skills	background theory, tutoring students, video taping the lesson, writing evaluation of the session	analyzed students and teach to their need, improved performance
#3 how to work more with than against needs	role-play lessons during social skills instruction	structured lesson activities around student's need to actively participate and be sociable
#5 how to lead students to find answers on own	process Algebra workshop activities	developed teaching and ways for students to learn through their own discovery
#5 the strategies and methods to use	expert teacher modeled teaching	implemented the process as it was modeled and aligned the process with practice

**Matrix 2: Expert Responses - What makes learning experiences meaningful in the context of practice?**

<u>What was learned?</u>	<u>Connection that made meaningful</u>	<u>Teaching practice affected behavior</u>
#5 board work difficult to implement	strategy conflicted with style, beliefs	left the strategy out of lessons
#5 felt uncomfortable with role-play scenarios	strategy conflicted with style	irrelevant to practice so did not implement
#5 some class compositions need more structure	students not able work through process	structured these classes more rigidly, less freedom
#5 everything is not black and white	having own children	treats students the way that he wants to be treated and respects differences
#5 acknowledgment of work	parent spoke about teachers at ballgame	affirmed that he conveys that he cares for them
#5 can't judge job just by tests	student from past years thanked him	affirmed that he conveys to students that he cares
#1 research on building student confidence	need to be intellectually stimulated	reaffirmed beliefs, refreshed specific behaviors to use with students
#1 student change in middle grades impacts learning	reflected upon behaviors observed in students and own children at that age	understand students better from the information
#1 just how little time she has for thinking about teaching practice in this job	sitting, listening, relating to research that was being presented	integrated the information into her interactions with students
#1 to be conscious of her tone of voice with students	discussion of how students perceive her and the affect on the relationship	monitors her frustration level and consequent tone of voice in student interactions
#1 praise should be for an achievement	don't just praise students for breathing well, it is insulting to their intelligence	affirmed her beliefs that praise should be given for a student meeting high expectations
#1 research shows that you should apologize to kids if you don't challenge them	strong feelings that students are not challenged sufficiently	affirmed beliefs that expectations and standards no matter what the initial student reaction
#1 she is doing what she is supposed to do	student response to her	encouraged her to continue the methods that she practices
#1 teachers that she is training are coming along	observation of novice teachers leading	reinforced her beliefs that these teachers will be able to lead the school

**Matrix 2: Expert Responses - What makes learning experiences meaningful in the context of practice?**

<b>What was learned?</b>	<b>Connection that made meaningful</b>	<b>Teaching practice affected behavior</b>
#1 recognized that she is a missionary in her work as a college professor	returning to the classroom from a job high standards because she deeply cares about	stay on top of students to get them to perform to them and that is her way of showing it
#1 happiest when teaching science all day long	last year's class on faith and reason and the learning that was a part of it	arranged administrative schedule to accommodate more teaching time
#6 quality tools to use in classroom	presenter was a high school teacher who shared activities she had practiced	affirmed what she had been doing and inspired students
#6 new language to use with novice teachers	familiar ideas reframed into presentation	affirmed that she was using the appropriate tools, ways to connect the ideas with novice teachers
#6 strategies that had been proven effective	presenter shared strategies that worked and also those that didn't and analyzed why	conveyed passion for working with students using these tools and practice of analyzing why something did not work
#6 how much she agreed with the philosophy the presentation	past experience and training all came together as she reflected upon what was being said	making sure students are on board with her and of connecting to class
#6 some methods did not match her personality	description of spending time with class to jointly establish the rules	she tells students the rules consequences for breaking them/ sees this as more efficient and it works for her
#6 novice teachers need much support	her first years teaching were challenging	she wrote a letter to the system office, and now coordinates the initially licensed teachers and their mentoring process
#6 colleague taught her how to level student work to match cognitive abilities & challenges	did not even know enough to know what help to ask	practiced the leveling that her colleague showed her with her students
#6 administration puts more challenging kids who can manage them regardless of what the teacher wants to teach	teacher unable to manage difficult students was given higher levels to teach with less behavior challenges	continued teaching assigned students, but felt unappreciated and disrespected by administration of recognition of situation

**Matrix 2: Expert Responses - What makes learning experiences meaningful in the context of practice?**

<b>What was learned?</b>	<b>Connection that made meaningful</b>	<b>Teaching practice affected behavior</b>
#6 what matters to her	work hard for her self and her students	that is what encourages her to go on
#6 novice teachers need to learn how to discipline	listening to the novice teachers who she supervises discuss their frustrations	discusses strategies that novices can use to manage and discipline
#6 lack of skills that novices possess in discipline	listening to the novices share their frustrations regarding student behavior	feels strongly and is working to implement discipline method training during the first quarter of a novice's employment
#6 recognizes that many students will not remember the specific content	teaching other skills than just content	model appropriate conflict resolution, respectful personal boundaries, good organizational skills
#6 what encourages her	adolescents have a hard time	understanding them and helping them in their development
#6 knowledge of self	reflecting upon practice	modeling what she values daily in front of students
#6 adolescents are malleable	working with abused women, prisoners, those on welfare	teaching took on a new meaning, recognized that she was good at it
#6 values showing that she cares and is passionate cares and is passionate	students know if a teacher is genuine and enthusiastic about their teaching	conveys that she cares about the students and her work
#6 importance of evaluation	good learning reflects good teaching	constantly evaluates as a method of feedback to modify teaching to meet learners' needs
#6 teaching is a building process, a whole process	one class connects and another one does not make the connection	revisits, reevaluates, reteaches until they understand
#7 how to develop materials and activities for ability levels of autistic students	developed lessons, used them with the students, experienced what worked, made modifications, retried lesson	revising lessons to meet students' individual goals and needs
#7 the more structure the better	observation of students knowing what to expect and how comforting that is to them	modified class to comply with the philosophy and practices taught in the institute

**Matrix 2: Expert Responses - What makes learning experiences meaningful in the context of practice?**

<b>What was learned?</b>	<b>Connection that made meaningful</b>	<b>Teaching practice affected behavior</b>
#7 to teach more efficiently	students know expectations and schedule	cover more lessons in less time more effectively
#7 be consistent both behaviorally and academically	students are much more at ease	consistent schedule, structure, expectations, adapt to individuals if necessary
#7 reason behind the decisions made in choice of activity and instruction	designing the lesson, reflecting upon the reasons for choices made, implementing the lesson with the student	self-evaluating instructional decisions made
#7 part of teaching is establishing a relationship to determine what the student can do and needs	designing and using a lesson that flopped	get to know the student and work from their ability
#7 use of visual cues	some students need step by step instruction	method transfers to work environment
#7 willingness of other staff to accept these students	students going into elective classes	encouraged by staff attitude, supported teachers by helping
#7 good teaching is not just knowing content	must have an ability to develop relationships with the students	relating to students about other interests, coaching, involvement in other activities
#7 importance of teaching kids what they need outside of school	observing the growth from their freshman year to the time they graduate	encourages doing a good job in teaching them what they need to know to be prepared and productive, independent contributors
#7 importance of getting a respected colleague's opinion	sharing problems regarding challenging students with another teacher	evaluated interactions with students and could see where changes were needed
#7 behavior is a form of communication	observing severe profound behavior and connecting that to less impaired students' communication through behavior	insight into understanding students' misbehavior their attempt to communicate, ability to help them
#7 knowing that efforts have an impact	helping families get the help they need for their child	encouraged to continue
#7 to effectively de-escalate a volatile student	reflected upon his behavior toward the student	changed approach, stance in situations like that

**Matrix 2: Novice Responses - What makes learning experiences meaningful in the context of practice?**

<b>What was learned?</b>	<b>Connection that made meaningful</b>	<b>Teaching practice affected behavior</b>
#14 a chart to gauge if students know something	using it in the staff development	liked it but have not used it
#14 model for good communication between staff and administration	could understand clearly and remembered experiences from school	affirmed her practice and thoughts about it
#14 unable to adapt methods presented to her content area	video showing elementary examples	did not use method even though she liked it
#14 philosophy of how to discipline in class	she connected the philosophy to her beliefs	implemented strategies and they worked for her
#14 what works in the way she teaches concepts	student feedback and their learning	reflected upon practice and revised lessons to be more effective
#11 focusing on group work and teamwork	thinking about how students could benefit	implemented method in class
#11 games to use with students as a review of material taught	to make the learning fun	used the games in class
#11 to get administration involved with discipline	has seen change in class	attempting to get more people, parents, involved
#11 what rules to put in place and how to go about enforcing them to discipline	deciding on consequences	being more consistent with discipline
#11 values the relationship and seeing them develop	observing students over the semester	encouraged to continue
#11 ways to handle specific situations	speaking with colleagues	tried the suggestions from colleagues
#11 activities that work with students	moving from one thing to the next smoothly	using activities that work and are enjoyable
#4 how important it is to challenge students	seeing students only want 'busy work'	designing lessons to challenge ability
#4 to refrain from unhelpful comments	discussion of the comments' impact on students	deliberately controlling comments

**Matrix 2: Novice Responses - What makes learning experiences meaningful in the context of practice?**

<b>What was learned?</b>	<b>Connection that made meaningful</b>	<b>Teaching practice affected behavior</b>
#4 providing a challenge is instilling confidence	discussion in the workshop	design lesson plans to challenge, not busy work
#4 dynamics change when students are in a group	looking at group as a class rather than as individuals	allowing students to advocate for themselves
#4 students behavior communicated a need	student comment	encouraged to stay
#4 need to be firm to manage a classroom	recognized the behavior that she had to use	struggling to improve management skills
#4 to recognize and process her mistakes	putting herself in a learning situation	reflecting upon practice and processing mistakes with supervisor
#4 students retain information experientially learned	the methods she used to teach Hamlet	developing experiential learning activities
#8 method to use for student review of content	could see the purpose for instruction and management	implemented the method in class
#8 scrutinizes the method and the way it is used by some teachers	believes in true student led learning	uses the method for what she feels is the intended purpose
#8 method requires more work than it appears if it is used appropriately	observed other teachers using the method	attempts to interpret and implement method for the students' best interests
#8 how to effectively use graphic organizers to evaluate what students know and what needs to be reviewed or retaught	effective way to assess student's knowledge quickly	uses method to quickly assess and teach to students' needs
#8 ideas for teaching	ideas presented filled her need	utilizing ideas in class to help students
#8 take information from workshop and 'file it'	make connections to using strategies in the classroom when working with the students	takes what was presented and uses it to help the students as she sees a place where it would work
#8 learns through hands on application and inquiry	desire to observe experienced teacher	experience with her NC TEACH program as student

**Matrix 2: Novice Responses - What makes learning experiences meaningful in the context of practice?**

<b>What was learned?</b>	<b>Connection that made meaningful</b>	<b>Teaching practice affected behavior</b>
#8 she does not draw from her experiences with her former teachers except that she wants to do a better job of connecting	discussion with colleagues about her teachers	shows students that she cares and gives them 'the benefit of the doubt'
#8 learned from her colleagues sharing their experiences during the presentation	stories that teachers shared from their class	could relate to what teachers shared
#8 answers are not that simple, aren't as obvious, didn't come in workshop	can not just try something to fix problem	still looking for answers to teaching problems
#8 does not criticize students for not fulfilling their potential because she recognizes that many students have to deal with a lot outside of school	observing other teachers who see feels are not doing their best	gives student the benefit of the doubt
#8 spontaneous topic in class connected with students' interests and got them thinking	learning was student driven	observed students leading the learning and drew from that to get of sense of their ability and what their interests are
#9 a diagram to quickly, informally assess	help determine what students know at a point in time	use the diagram as a tool to review or 'pre-assess'
#9 how to structure more independence in class	team concept of organizing students	break into teams, list agenda, includes team time if agenda is met
#9 to delegate responsibilities to students	presenters comment about student's vs teacher's energy level at the end of the day	students have responsibilities ranging from passing out the books to designing test reviews
#9 unable to adapt the same procedure for lower level academic students	lower levels need more structure	have not implemented ideas with other classes
#9 idea of 'issue bin' for students to place comments/ideas to address later	this could be a tool to give students a way to express issues, but not get class off topic	implemented idea
#9 cares about different levels of students	students needs to improve and/or to know she cares	tries to do her best to teach them

**Matrix 2: Novice Responses - What makes learning experiences meaningful in the context of practice?**

<b>What was learned?</b>	<b>Connection that made meaningful</b>	<b>Teaching practice affected behavior</b>
#9 appreciates being placed in a position of trust to teach the students	administration and students trusting her	encouraged to do a good job
#9 learned that she can not save all the students from their life circumstances	talking with a student about his problem	places emphasis on being a role model
#10 ideas for group work	not sure she liked the ideas or feels comfortable implementing them, yet	has not used, but thinks she may in the future
#10 emphasis on importance of working as a team	information shared suggested the value that employers place on ability to work with others	group work in class
#10 how to give students ownership for some of the decisions made about their learning	she felt letting the students decide would help not waste her time making the wrong decision	students choose review methods that meet their learning needs
#10 opinion of students about her teaching	card and Christmas table donated in her honor from student and parents	encouraged to continue
#10 lower performing students do well	to watch the students 'get it'	encourages her to do a good job
#10 utilizes higher students to help teach the lower students	realized that she can not help everyone	uses peer tutors effectively
#10 must pick groups carefully	similar students group themselves together	mixes groups so that students can learn
#10 lower students need much more structure	recognized that students were 'lost'	doesn't experiment with strategies, keeps structured with lower
#10 teachers that don't go to the student's IEP meetings really bother her	students and parents must know that the teacher cares	attends as many IEP meeting as she can
#10 sees that she can make a difference	difficult student turned around, some made it because of her efforts	builds on student's strengths (e.g. drawing)

**Matrix 2: Novice Responses - What makes learning experiences meaningful in the context of practice?**

<b>What was learned?</b>	<b>Connection that made meaningful</b>	<b>Teaching practice affected behavior</b>
#10 you can not be a 'hardnose' all the time you must be very flexible	working with challenging students	flexibility in working with all the different types
#10 using visuals is a worthwhile tool to help students understand	students came up to her after class and commented on the lecture	will use the materials again
#10 how to make the abstract concrete and connect	students are interested in how the topic connects to their life	trying to use visual materials and topics that connect to students' interests
#13 asking the students what to do to improve	concern for the student's progress	implemented the idea using the plus/delta
#13 a variety of graphic organizers	viewed as a good way to present information	used the graphic organizers to present info to students
#13 input from students is good	hearing the presenter acknowledged that this concept is acceptable and positive	affirmed his belief that 'not being a dictator' is good
#13 how to include the strategies presented	knowledge of how to use the information presented at an opportune time	used the strategy (plus/delta) when he was observed
#13 learned discipline techniques from a video	beliefs aligned with the philosophy of the presenter, feels better about teaching	uses the modifications, discipline strategies to accommodate students' needs
#13 how to approach kids in a way that is not what they are used to from teachers	strong feelings to build up students with less ability and opportunity and let them know he cares	strives to build up, not tear down, be there for the kid who has less chances of succeeding easily

**Matrix 3**

**Qualitative Data Analysis Documentation Form**

(adapted from Daley, 1993, p.297)

**Matrix 3**  
**Qualitative Data Analysis Documentation Form (adapted from Daley, 1993, p.297)**

Research issue being investigated:

How do teaching professionals connect day to day experiences with professional development?

In this analysis task, specifically what are you trying to do? Is the focus exploratory, confirmatory? Make connections with other analysis.

In this analysis, the focus is to look for examples situated learning and legitimate peripheral participation as were described by Lave and Wenger (1991). It is exploratory.

Specific data sets used:

Fourteen audio-taped interviews from seven novice and seven expert teachers.  
Coded transcripts of interviews.  
Concept maps created from listening to participant interviews.

Procedural steps. Explain what was done and how.

Review concept maps (see Appendix M) and coded interview transcripts (see Appendix K) while listening to taped interviews.  
Work sequentially, keeping a log, anecdotal notes.  
Find connections linking coded interview responses to research questions and concept maps.  
Make analytical notes for inclusion in discussion.

Decision rules followed during analysis operation.

Include major concepts from the interview guide.  
Establish themes connecting the research question, concept maps, and the taped and coded interviews.  
Identify, for discussion, the indicators of situated learning and legitimate peripheral participation that emerge from the reflections of the novice and from those of the expert.  
Include relevant answers to specific questions in the interview guide (see Appendix F).

Conclusions drawn from these answers as related to the topics and connected to the research questions; from the research notes, comments or reflections upon, specific analysis, remarks. Substance given in brief as is related to the conceptual framework theories, links to concept maps, interviews.

Contents of matrix 3 related the responses from all fourteen interviews to this specific research question  
Demonstrated what was learned regarding the connections that the novice and expert teachers made from staff development to their day to day experiences.

This matrix was developed utilizing situated learning theory to guide the interpretation of the findings and develop this exhibit of examples given by the novice and expert teachers explaining how they connected day to day experiences with professional development.

Role/Years Experience    Important themes: CONXPD    SPEIH    HWUSIP    MENT    CTCHG    AADJP    URCHG    ADMTT    EFUSD    RSLDP

**Matrix 3: Experts - How do teaching professionals connect day to day experiences with professional development?**

<b>Practice context/connection</b>	<b>Facilitated by or inhibited by/Social connection/ Legitimate peripheral participation</b>	<b>Evidence/Research Comments</b>
<b>#6/E/25</b>		
used information in her role as a mentor	she supported mentees	information affirmed her prior knowledge
used tool to evaluate strengths and weaknesses	used activity in discussion with mentees	took idea from presentation and used it
not able to teach to the diverse student levels	never shown or taught how in student teaching	"nobody learns anything student teaching"
asked a more tenured teacher for help	experienced teacher showed her how to level lessons	as a novice she sought help from expert
other teacher assigned classes she wanted	administration did not recognize her master status	
communication in her department	isolation	"pretty much islands in ourselves"
<b>#2/E/21</b>		
associated presentation ideas with lessons planned	understood how to use ideas within practice	successive approximations / lessons taught
coaches novices to teach integrated lessons	she supports novices through modeling in classroom	gives feedback and direction on the job
gave teachers solid, grounded orientation	bringing newcomers into the culture of the school	have lost no teachers/ attributes to orienting
acquaint through teaching excursions	teach lessons in authentic environment	get to know students-abilities, relationships
models discipline techniques in class/school	coaches novices in discipline/management	novices refer to her modeling
discussion with colleagues integrating curriculum	discourse on how to integrate/use learning cycle	ongoing expectation discussed continuously
<b>#5/E/29</b>		
implemented process in class	used activities just as they were modeled	affirmed practice/certified in process
student led learning	teacher must be a master of content	"think on feet... draw problem into plan"
realistic activities	used tools to learn, engaged in discussion	utilized methods process math

**Matrix 3: Experts - How do teaching professionals connect day to day experiences with professional development?**

<b>Practice context/connection</b>	<b>Facilitated by or inhibited by/Social connection/ Legitimate peripheral participation</b>	<b>Evidence/Research Comments</b>
<b>#5/E/29</b> hierarchical communication, memos, meetings	isolated	discussed at monthly meetings, memos
if anything comes up we discuss it	legitimate peripheral participation of novices	through daily lunch groups
taught upper level math	went to colleagues more skilled in content	even expert go to colleagues
already practiced teaching process math	used workshop ideas, implemented with students	affirmed knowledge and practice
<b>#7/E/12</b> hands on, implemented, received feedback	workshop included students, developing materials, designed lessons for specific needs	"it was great!...huge benefit to be able to apply it"
taught concepts to other teachers	shared the knowledge with colleagues to help students	generalized learning to other settings
utilized tools, mechanisms, structure	students actual use of information in different contexts	"vocational tasks...can apply same things"
more experienced teacher helped him	voluntary mentor, made sure he had what he needed	
"community based vocation training"	took students to work and taught in authentic environment	"need to get kids working"
observation by assistant principal	never taught the method of evaluation in his practice	"never heard of a six point lesson plan"
helped novice adjust lessons to the 'middle'	discussed what he had observed the novice teaching	supported colleague, was thanked
<b>#1/E/25</b> 'regular school' teaching resisted integrated curriculum, learning cycle beliefs	started a charter school with integrated curriculum, no lecture philosophy/policy	"accomplish what is important to me in teaching"
observe teachers curriculum and discipline	mentor, discuss, give feedback	"improved over last year"
pair with faculty	discuss, work on integration and any problems	once per week

**Matrix 3: Experts - How do teaching professionals connect day to day experiences with professional development?**

<b>Practice context/connection</b>	<b>Facilitated by or inhibited by/Social connection/ Legitimate peripheral participation</b>	<b>Evidence/Research Comments</b>
<b>#1/E/25</b> grade level faculties talk in groups	discuss changes as a 'community'	meet to discuss policy, procedures
memo entire staff once per day	facilitate communication, stay on top of issues	"in the halls all the time...pretty visible"
teasing/storytelling to acknowledge efforts	bringing into fold, legitimate peripheral participation	"the dead fish"
mentor influence on practice, research efforts "teaching science like science was"	colleague and mentor modeled, not staff development	"about the guts of teaching...what I was doing in the classroom everyday"
<b>#3/E/7</b> observed benefits of using group process to teach	modeled for her by mentor/colleague with colleagues	"that was not the way that I had taught"
used with small groups of students	facilitated the implementation of the method	"saw how well it worked with the teachers"
practiced lessons before using with students	modeled how to facilitate to different levels	able to adapt to student needs
putting work into improve, give opinion	legitimate peripheral participation, pulling into organization	participating actively
received specific suggestions on behavior	guided, discussed strategies for discipline	"student deals best if you handle them ..."
developed working and social relationships	colleagues participating as equals	small group "respect and friendship"
discipline training "had biggest affect on teaching"	mentor taught, modeled behaviors for discipline	
practiced workshop concepts with student	learning situated in authentic environment	tutored child, videotape, write ups, practice
authentic practice of social skills with peers	created role play to situate the learning	realized how it met their needs, changed teaching practice
<b>#12/E/16</b> connected previous theories to presented ideas	experience, tools, application in classroom	"triggered... how we can help kids"
recognition of prior learning and practice ties	staff development supported/affirmed	"it only impacted it that it supported"

**Matrix 3: Novices - How do teaching professionals connect day to day experiences with professional development?**

<b>Practice context/connection</b>	<b>Facilitated by or inhibited by/Social connection/ Legitimate peripheral participation</b>	<b>Evidence/Research Comments</b>
<b>#14/N/3</b> felt support from department, mentor	colleagues gave assistance, guidance, direction	"department did a good job of protecting"
went to teacher next door for help	colleague in close proximity and several others	"sat down ... integrate...took several times"
feel issues voiced not really heard	communication not understood	"attendance, tardiness"
change in practice	experience and colleagues	"not staff development"
getting training on technology use	department offering it	"going to those and seeing other things"
<b>#13/N/2.5</b> opposed to the theory	upset, not interested, mandatory attendance	"trying to get as much as I could out of it"
we did not need the message	program didn't address more pressing issues inhibited by way presented, jargon, political	"all day cynical comments, people upset" "program kicked down from the top"
plus delta, pro con chart	used with students in class	"student input"
county requires ILT to attend meetings	resistant to attend, difficult to find value in process	"principals do not retain people that don't"
staff development waste of time, money, resources, could be whole lot better	commiserated with others of same feeling	need "some choices, some options"
<b>#11/N/6 mon.</b> activity did not go over well with students	tried idea from staff development session	"they were like, this is stupid"
administration acknowledged shouldn't have had to go through what she did her first year	staying to see if next year is going to be different	"waiting to see...going to happen or not"
ideas come from teachers in department	goes to colleagues for support, suggestions	"always get a ton of ideas from them"

**Matrix 3: Novices - How do teaching professionals connect day to day experiences with professional development?**

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**Matrix 3: Novices - How do teaching professionals connect day to day experiences with professional development?**

<b>Practice context/connection</b>	<b>Facilitated by or inhibited by/Social connection/ Legitimate peripheral participation</b>	<b>Evidence/Research Comments</b>
feels observing teacher would help her	not had the opportunity to observe teacher with good rapport	"I've often told him I want to observe"
specific problem, what works, ideas, opinions	goes to mentor, other teachers, department chair for help	"where I get the most, pull from the most..."
<b>#10/N/3</b> need ideas or help go to colleagues	older teachers look out for the younger teachers	
specific situations in content area or help with discipline issues	go to the teacher next door with 25 years experience	"even just to talk to ...she's really good"
colleagues and students most influential	colleague support, students through experience	"I've had to get a lot stricter, meaner"
staff development sessions not as helpful	could use time better to plan, in classroom, get ready for class newer teachers feel the same	"should be done before school starts"
information on discipline needed staff development topic not what I needed	another teacher shared information from workshop	"I need more discipline strategies"
<b>#9/N/2</b> used idea in class to save time and her energy	simple idea she had not thought of before to save her time	"when you first start you think you have to do everything"
floated to difficult classes to help teachers	felt very lucky, was a blessing, was accepted	"created a spot for me"
attendance, tardy, student issues	administration does not address	"right positions ...not thought...to make our jobs easier"
get "exciting, cool ideas" from colleagues	support from peers	"wish I could get last year's kids back"
<b>#8/N/2 lat.</b> hands on, manipulative, visual, graphic methods	juggling act every day inhibits trying a lot of things	"...the best way to approach (teaching) it"

**Matrix 3: Novices - How do teaching professionals connect day to day experiences with professional development?**

Practice context/connection	Facilitated by or inhibited by/Social connection/ Legitimate peripheral participation	Evidence/Research Comments
needs to observe other teachers for specific ways to handle discipline, classroom management, good teacher methods	repeatedly expressed need to observe other teachers	"130 teachers to observe...time...goal this year to get into some other classrooms and watch"
help on things other than curriculum	mentor assigned by county to new teachers	"I've been really lucky with my mentor"
developed curriculum	fellow teacher who worked with last year legitimate peripheral participation	"who took me under her wing"
doing it on my own	once the door is closed, ready or not	"bell rings...you are swimming"
worked in isolation for 6 months	felt they thought she wouldn't last, left her alone	"avoided me...could have been teaching communism down there ... no idea what I was doing"
doesn't rely on administration	hands off, if they don't get complaints...don't come in	"if you need them...almost have to make an appointment"
obstacles to observing other teachers	administration could make it happen	"administration could do more to help new teachers"
taught methods as a participating student, hands on, inquiry learning	knowing you were going to teach it later	"really a very powerful way to learn"
listened to co-teachers share using ideas	stories of how methods worked for them	""well, OK, maybe I could apply it here"
planned units with colleague	facilitated learning	understood from experience where to modify
asked for science workshops on computer use	have not participated in much staff development	"a lot of it that I've been to hasn't been real easily applicable for Science"

**Matrix 3: Novices - How do teaching professionals connect day to day experiences with professional development?**

<b>Practice context/connection</b>	<b>Facilitated by or inhibited by/Social connection/ Legitimate peripheral participation</b>	<b>Evidence/Research Comments</b>
#3/N/1 floated the first week, read, helped	did not get opportunity to know staff ahead of starting	"that was very stressful for me...baptized by fire"
communication style abrasive	inhibits comfort in interaction, feeling supported	"tell people not to take it personally... wonder if it is part of turnover problem"
communication with others to integrate lessons	have to give each other feedback, bounce ideas off other people	"communication is so important with the integrated curriculum"

## Appendix O

### **KNOWLEDGE BASES FOR DEVELOPING TEACHING EXPERTISE** (Turner-Bisset, 1999)

*Pedagogical content knowledge* is an amalgam of content knowledge and general pedagogical knowledge. In this model the concept of an overarching knowledge base comprises all of the following components.

- *Content or subject matter knowledge* includes:

*Substantive knowledge* that is the facts, concepts, and the respective organizing frameworks of a discipline that are used to connect the various parts.

*Syntactical knowledge* is the ways and means by which the propositional knowledge has been generated and established (e.g. in history - ordered inquiry, systematic analysis, evaluation, argument, logical rigor, and the search for the truth).

*Beliefs about the subject* includes the teachers' orientations toward the subject and their beliefs about what is important to know.

- *Curriculum knowledge* is referred to as 'tools of the trade' by Shulman (1986). Curriculum materials from a variety of sources creatively combined with knowledge to teach.
- *General pedagogical knowledge* is knowledge about teaching, usually gained from practice.
- *Knowledge and models of teaching or the teachers' thought, knowledge, and beliefs* about teaching usually from their own school experience shapes the teachers' perceptions of teaching and their own developing practice.

- *Knowledge of learners* includes:

*Empirical or social knowledge* of what children in a particular age range are like; how they behave in classrooms and school; their interests and preoccupations; social nature; how contextual factors influence their behavior; and the nature of the child-teacher relationship.

- *Cognitive knowledge* consists of these elements:

*Knowledge of child development* to inform practice (e.g. structuring an activity in such a way that the child moves toward acquiring a skill unaided).

*Knowledge of adaptability from contact* with a specific group and the ability to adapt to the needs of particular learners.

- *Knowledge of self* is an important requisite and enables teachers to reflect upon and deliberate on or self-evaluate their own practice—an activity that has an impact upon development.
- *Knowledge of educational contexts* incorporates a range of factors that affect development and classroom performance. It is the knowledge of the educational organization and structure, of schools, classrooms, and all settings where learning takes place.
- *Knowledge of educational ends, purposes, and values* both in the short and long term; a continuum of system-wide and classroom-wide understanding.

## BIBLIOGRAPHY

- Anzai, Y. (1991). Learning and use of representations for physics expertise. In K. A. Ericsson and J. Smith (Eds.), *Toward a general theory of expertise: Prospects and limits.* (pp. 64-92). Cambridge: Cambridge University Press.
- Anderson, R. D., B. L. Anderson, M. A. Varanka-Martin, L. Romagnano, J. Bielenberg, M. Flory, B. Mieras, and J. Whitworth. (1994). Issues of curriculum reform in science, mathematics, and higher order thinking across the disciplines. Washington, DC: U. S. Government Printing Office.
- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. Psychological Review, 84, 191-215.
- Benner, P. (1982). From novice to expert. American Journal of Nursing, 82, 402-407.
- Benner, P. (1984). From novice to expert: Excellence and power in clinical nursing practice. Menlo Park, CA: Addison-Wesley Publishing Company.
- Benner, P. and Tanner, C. (1987). Clinical judgment: How expert nurses use intuition. American Journal of Nursing, 87, 23-31.
- Berliner, D. C. (1986). In pursuit of the expert pedagogue. Educational Researcher, August/September, 5-13.
- Berliner, D. C. (1988). The development of expertise in pedagogy. Charles W. Hunt Memorial Lecture presented at the Annual Meeting of the American Association of Colleges for Teacher Education, New Orleans, LA, February 17-20.
- Berliner, D. (1988). Implications of studies of expertise in pedagogy for teacher education and evaluation. Educational Testing Service (Ed.). New Directions for Teacher Assessment. Proceedings of the 1988 ETS Invitational Conference. Princeton, NJ: Educational Testing Service.
- Bloom, B. (1986, February). Automaticity. Educational Leadership, 70-77.
- Brooks, D. M., & Hawke, G. (1985, April). Effective and ineffective session-opening teacher activity and task structures. Paper presented at the annual meeting of the American Educational Research Association. Chicago.

- Brown, J. S., Collins, A., & Duguid, P. (1989). Situated cognition and the culture of learning. Educational Researcher, 18, 32-42.
- Charness, N. (1991). Expertise in chess: The balance between knowledge and search. In K. A. Ericsson and J. Smith (Eds.), Toward a general theory of expertise: Prospects and limits. (pp. 39-63). Cambridge: Cambridge University Press.
- Daley, B. J. (1993). The interrelationships of knowledge, context and clinical nursing practice (Doctoral dissertation, Cornell University, 1993). UMI Dissertation Services, 9406166.
- Daley, B. J., (1999). Novice to expert: An exploration of how professionals learn. Adult Education Quarterly, 49(4), pp. 133-147.
- Daley, B. J., and Carlsson, M. (2000). Constructing knowledge in continuing professional education. In K Peter Kuchinke (Ed.), Academy of Human Resource Development: Vol. 2. pp. 976-983. AHRD: Baton Rouge.
- Darling-Hammond, L. (2000). How teacher education matters. Journal of Teacher Education, May/June, 51(3), pp. 166-173.
- Dewey, J. (1916). Democracy and education. New York: Macmillan.
- Dreyfus, H. L., and Dreyfus, S. E. (1986). Mind over machine. New York: The Free Press.
- Duda, R. O., and Shortliffe, E. H. (1983). Expert systems research. Science, 220, 261-268.
- Dunne, R. and Harvard, G. (1990). Teaching Practice Criteria, mimeo (Exeter, University of Exeter).
- Eisenhart, M., and Behm, L. (1991). Learning to teach: Developing expertise or rite of passage? Journal of Education for Teaching, 17(1).
- Elbaz, F. (1983). Teacher thinking: A study of practical knowledge. New York: Nicholls.
- Ericsson, K. A., and Smith, J. (Eds.) (1991), Toward a general theory of expertise: Prospects and limits. Cambridge: Cambridge University Press.
- Ferguson, R. (1991). Paying for public education: New evidence on how and why money matters. Harvard Journal on Legislation, 28(2), p. 490.

- Fish, D. (1989). Learning through practice in initial teacher education: A challenge for the partner. London: Kogan Page.
- Gagne, E. D. (1985). The cognitive psychology of school learning. Boston: Little Brown.
- Ginsburg, M. B. (1988). Contradictions in teacher education and society: A critical analysis. New York: Falmer.
- Glasser, W. (1984). Control theory: A new explanation of how we control our lives. New York: Harper and Row.
- Glasser, W. (1993). A diagram of the brain as a control system. CA: Canoga Park..
- Glasser, W. (1998). Choice theory: A new psychology of personal freedom. New York: Harper Collins.
- Gipps, C. (1992). What we know about effective primary teaching. The London File: Papers from the Institute of Education. London: Tufnell Press.
- Haertel, E. (1991). New forms of teacher assessment. In G. Grant (Ed.), Review of research in education, 17, pp. 3-29. Washington, DC: American Educational Research Association.
- Hickman, L. A. (1990). John Dewey's pragmatic technology. Indianapolis: Indiana University Press.
- Ingersoll, R. M. (1999). The problem of underqualified teachers in American Secondary schools. Educational Researcher, 28(2), pp. 26-37.
- Kagan, D. M. (1992). Professional growth among pre-service and beginning teachers. Review of Educational Research, 62, 129-169.
- Kohn, A. (1996). What to look for in a classroom. Educational Leadership, 54(1): 54-55.
- Lampert, M. (1981). How teachers manage to teach: Perspectives on the unsolvable dilemmas on teaching practice. Dissertation Abstracts International, 42, 31222A University Microfilms NO. 81-26, 203.
- Lanzilotti, S. S. (1986). The practice integrated learning sequence: Linking education with the practice of medicine. Adult Education Quarterly, 37, 38-47.

- Lave, J. (1988). Cognition in practice: Mind, mathematics, and culture in everyday life. Cambridge, UK: Cambridge University Press.
- Lave, J. & Wenger, E. (1991). Situated learning: Legitimate peripheral participation. Cambridge, UK: Cambridge University Press.
- Lincoln, Y. and Guba, E. (1985). Naturalistic inquiry. Newbury Park: Sage Publications.
- LeCompte, M. and Preissle, J. (1993). Ethnography and qualitative design in educational research. San Diego: Academic Press.
- Leindhart, G., and Greeno, J. G. (1986). The cognitive skill of teaching. Journal of Educational Psychology, 78, 75-95.
- Lu, A. (2002). In the schools: Faculty retention. Raleigh, NC: News and Observer.
- McLaughlin, M., and Talbert, J. E. (1993). Contexts that matter for teaching and learning: Strategic opportunities for meeting the nation's educational goals.
- Merriam, S. (1998). Qualitative research and case study applications in education. San Francisco: Jossey-Bass, Inc.
- Mezirow, J. (1981). A critical theory of adult learning and education. Adult Education, 32(1) 3-24.
- Mezirow, J. (1997). Transformative learning: Theory to practice. New Directions for Adult and Continuing Education, 74, Summer. San Francisco: Jossey-Bass.
- Miles, M., and Huberman, A. M. (1984). Qualitative data analysis: A source book of new methods. Newbury Park: Sage Publications.
- Muhr, T. (1997). Atlas.ti: The knowledge workbench. Berlin: Scientific Software Development.
- Neisler, O. J. (2000). How does teacher education need to change to meet the needs of America's schools at the start of the 21<sup>st</sup> century? Journal of Teacher Education, 51(3) 248-256.
- North Carolina Public Schools. Retrieved May 7, 2001 from the World Wide Web: [http://www.ncpublicschools.org/mentoring\\_novice\\_teachers/downloads/module1.pdf2/01](http://www.ncpublicschools.org/mentoring_novice_teachers/downloads/module1.pdf2/01).

- Novak, J. (1998). Learning, creating, and using knowledge: Concept maps as facilitative tools in schools and corporations. Mahwah: Lawrence Erlbaum Associates, Publishers.
- Novak, J., and Gowin, D. B. (1984). Learning how to learn. New York: Cambridge University Press.
- National Center for Research in Vocational Education (1993). Classrooms that work: Teaching generic skills in academic and vocational settings. University of California – Berkeley: Author.
- Patel, V. L. and Groen, G. J. (1991). The general and specific nature of medical expertise: A critical look. In K. A. Ericsson and J. Smith (Eds.), Toward a general theory of expertise: Prospects and limits. (pp. 93-125). Cambridge: Cambridge University Press.
- Phillips, D. (1990). Subjectivity and objectivity: An objective inquiry. In E. W. Eisner and A. Peshkin (Eds.), Qualitative inquiry in education: The continuing debate. (p. 22). New York, NY: Teachers College Press.
- Pratt, D. and Associates (1998). Five perspectives on teaching in adult and higher education. Malabar, FL: Krieger Publishing Company.
- Putnam, R. T., and Borko, H. (2000). What do new views of knowledge and thinking have to say about research on teacher learning? Educational Researcher, 29(1), 4-15.
- Robinson, J. B., S. K. Enger, G. F. Varella, and R. E. Yager. (1997). Iowa Scope, Sequence and Coordination Project final report. Iowa City, IA: University of Iowa Science Education Center.
- Roehler, L. R., and Duffy, G. G. (1986). What makes one teacher a better explainer than another. Journal of Education for Teaching, 12, 273-284.
- Roschelle, J. (1995). What should collaborative technology be? A perspective from Dewey and situated learning. (Online). Available: [http://www.csc195.indiana.edu/csc195/outlook/39\\_roschelle.html](http://www.csc195.indiana.edu/csc195/outlook/39_roschelle.html) 3/3/00.
- Schon, D. A. (1987). Educating the reflective practitioner: Toward a new design for teaching and learning in the professions. San Francisco: Jossey-Bass, Inc.

- Shulman, L. S. (1986a). Paradigms and research programmes in the study of teaching: A contemporary perspective. In M. C. Wittrock (Ed.) Handbook of Research on Teaching, (pp. 505-526). New York: McMillan.
- Shulman, L. S. (1986b). Those who understand: Knowledge growth in teaching. Educational Researcher, 15(2), 4-14.
- Shulman, L. S. (1987b). Sounding an alarm: A reply to Sockett. Harvard Educational Review, 57, 1-22
- Sloboda, J. (1991). Musical expertise. In K. A. Ericsson and J. Smith (Eds.), Toward a general theory of expertise: Prospects and limits. (pp. 153-171). Cambridge: Cambridge University Press.
- Stasz, K., Ramsey, K., Eden, R., DaVanzo, J., Farris, H., and Lewis, M. (1993). Classrooms that work: Teaching generic skills in academic and vocational settings. Berkeley, California: National Center for Research in Vocational Education: U. S. Department of Vocational and Adult Education, U. S. Department of Education, University of California.
- Talbert, J. E., M. W. McLaughlin, and B. Rowan (1993). Understanding context effects on secondary school teaching. Teachers College Record, 95(1), 45-68.
- Thrust for Educational Leadership. (1998). Teacher expertise key to increased student learning. Phi Delta Kappan, 27(4), 7.
- Turner-Bisset, R. A. (1997). Subject matter knowledge and teaching competence. Unpublished doctoral thesis. University of Exeter.
- Turner-Bisset, R. (1999). The knowledge bases of the expert teacher. British Educational Research Journal, 25(1), 39-56.
- U. S. National Commission on Teaching and America's Future. (1997). What matters most: Teaching for America's future. Reading Today, 14(4), 3.
- United Federation of Teachers. Retrieved April 7, 2000 from the World Wide Web: [http:// www.uft.org/nyteacher/vps/98-99](http://www.uft.org/nyteacher/vps/98-99)
- van Halen-Faber, C. (1997). Encouraging critical reflection in preservice teacher education: A narrative of a personal learning journey. New Directions for Adult and Continuing Education, 74(Summer), 51-60.
- Varrella, G. F. (2000). Science teachers at the top of their game: What is teacher expertise? Clearing House, Sept./Oct. 2000, 74 (1), 43.

- Wenger, E. (1998). Communities of practice: Learning as a social system. Systems Thinker.
- Wenger, E. (1998). Communities of practice: Learning, meaning, and identity. Cambridge: Cambridge University Press.
- Williams, D. D. (1992). "Preparing teachers as naturalistic enquirers: Responding to the Face of the other." Paper presented at the annual meeting of the American Educational Research Association, San Francisco.
- Wilson, A. L. (1993). The promise of situated cognition. An Update on Adult Learning Theory, 7, 71-80. San Francisco: Jossey-Bass.
- Yates, G. C. R., & Yates, S. M. (1990). Teacher effectiveness research. Educational Psychology, 10(3), 225-239.
- Yost, D. S., and Senter, S. M. (2000). An examination of the construct of critical reflection: Implications for teacher education. Journal of Teacher Education, 51(1), 6.