

## Chapter 1

### INTRODUCTION

How many teachers can remember this scene? I am a newly certified teacher, fresh from college with my Bachelor's degree in Elementary Education and I am ready to conquer the world. I arrive as "teacher" in my first elementary classroom and am greeted by eager and enthusiastic fifth-graders. It is not long, however, before I begin to wonder who is actually going to do the conquering.

This scene is typical for many first-year teachers. I was so enamored with a deep desire to be a truly good teacher. I wanted my students to enjoy school much more than I had enjoyed my own elementary school experience. I had visions of sweet, smiling children looking up at me ready and eager to learn the wisdoms I was about to bestow upon them fresh in mind. I began my first year of teaching wanting to inspire learning and to create a joy and love for education in my students. It was not long into that first year before these lofty goals had transformed into much simpler aspirations of putting together lesson plans that met all the state standards and of keeping some semblance of order in my class of twenty-six eager ten-year-olds. Why didn't the tactics listed in the book on classroom discipline from our three-week seminar on the same topic work for me? My students did not seem to respond to the same gentle disciplinary tactics as easily and as predictably as the students in the classroom discipline book had. What was I supposed to do when only ten of these fifth-graders could read on a fifth grade level, two were reading high school texts, and 14 of them were in special education programs with reading ranges from first to third grade? Nobody told me how complicated this was going to be!

Despite my struggles and feelings of inadequacy, I received glowing evaluations from my principal about my work and about my potential. I felt like a fraud. The reality was that I was miserably unhappy, totally dissatisfied with the education I was providing for my students, and physically and mentally exhausted for most of the time. I used teacher's editions and taught page-by-page in my struggle to stay afloat.

I am happy to say that I regained my desire of wanting to inspire learning and to create a joy and love for education in my students. I did learn to juggle the variety of learning needs my students brought to me and I did learn to become a creative teacher,

integrating subject matter, teaching thematically, meeting individual needs, building community, and teaching in developmentally appropriate ways for my students. But, all that came two or three years into my career and at the cost of many tears, much frustration, and a level of teaching that I feel was less than what my students the first couple of years deserved.

It is this history that has brought me to my research, in wanting to make a difference for future new teachers so that their first teaching experiences and the instruction of their students may be more successful. I want new teachers to enter their first classroom as aware as new teachers can possibly be of the complexities they will encounter and to be as prepared as they possibly can be to work within those complexities.

This investigation looked at a university course that introduced pre-service teachers to some of those complexities by focusing on the integration of theory and practice related to learning and learners. Communication among pre-service teachers, practicing teachers, and university professors was fostered by the development of a computer-mediated community of learners. This communication helped pre-service teachers create connections between their studies at the university and the demands of the public school classroom.

#### *Overview of Study*

This study evolved from a collaborative effort between several faculty members of the Educational Psychology program and myself over a two-year period. Computer technology was used to create a community of learners in a teacher education setting focused on helping pre-service teachers connect theoretical frameworks to classroom practice. This study took place in a foundation course of Educational Psychology for pre-service teachers at a large research university in the southeastern United States. This course is required for teacher certification and is offered by the Educational Psychology program. Psychological Foundations of Education for Pre-service Teachers is currently offered every semester, including summers. Enrollment is usually at full capacity with at least 35 students in each of the eight sections offered across the calendar year. Close to 250 pre-service teachers are enrolled in this course each year. Many of these students are at the beginning of a teacher preparation program, so these numbers are largely in addition to the numbers of students who are seeking positions in local schools for student aiding experiences as well as student teaching assignments. This large number of prospective teachers entering local schools makes it nearly impossible to locate schools and teachers with enough time and human

resources available to provide these pre-service teachers with supervised field experiences.

The professor of this educational psychology course, along with another professor in whose class the pilot work was conducted, worked with me to develop my ideas for an electronic field experience and for the online activities that were utilized in this course. Both generously and supportively allowed me to field-test my ideas for these technological components in their classes. Both instructors used video-based CD-ROM case studies to provide a form of electronic field experience for the pre-service teachers. The pre-service teachers also communicated with practicing teachers and university professors electronically via chats and threaded discussion lists about the practical applications of the theories and concepts studied in the courses. Although this study draws upon lessons learned in the pilot work, this document examines in-depth only the research activities that occurred after the pilot work was conducted. The communication that occurred between the participants is examined to determine the nature of what was learned and the extent to which the participants affirmed the online environment as a viable way to connect theory and practice is shared.

#### *Rationale for Study*

The rationale for this study is based on research that has shown teachers have great difficulty learning theories and skills in isolated university classrooms and then applying them in future teaching situations (Corley, 1998; Nagel & Driscoll, 1992; Olson & Osborne, 1991; Wideen, Mayer-Smith, & Moon, 1998). If this is so, then teacher education programs need to consider what experiences or scaffolds they might provide that would be most effective in preparing future teachers to build a mental bridge from their university coursework to the classroom's practical applications of this coursework. This study looks at one such experience and is framed theoretically by the theory of situated cognition (Brown, Collins, & Duguid, 1989) and the concept of legitimate peripheral participation in a community of practice (Lave & Wenger, 1991).

Borko and Putnam (1996) argued that learning is social, is situated in particular contexts, and is distributed across the individual, other persons, and tools of the community. This research examined an electronic learning community that honored the situated notion of learning by immersing pre-service teachers in the practice of teaching through communication with more experienced others. This learning community also honored the

notion of legitimate peripheral participation proposed by Lave and Wenger (1991). In legitimate peripheral participation, a newcomer to a community of practice is guided to fuller participation in the community through scaffolding experiences.

Furthermore, it is important for programs of teacher certification to support and enhance the professional nature of teaching and teacher learning such as the standards set forth by the National Council for the Accreditation of Teacher Education (NCATE) and the Interstate New Teacher Assessment and Support Consortium (INTASC) mandate. These standards are rigorous and hold high expectations for our new teachers and the programs that prepare them. It is therefore important to not only be aware of pre-service teacher learning needs, but to also be cognizant of the research findings on best practices for programs to offer so that pre-service teachers will not only be prepared to meet these standards, but will also be prepared well for their new career. This study looks at the ways in which electronic learning communities may enhance pre-service teachers' learning experiences while also addressing standards for teacher education programs suggested by NCATE. The specific standards this study addresses are as follows:

?? Standard 3: Field Experiences and Clinical Practice - The unit and its school partners design, implement, and evaluate field experiences and clinical practice so that candidates develop and demonstrate the knowledge, skills, and dispositions necessary to help all students learn.

?? Standard 4: Diversity - The unit designs, implements, and evaluates curriculum and experiences for candidates to acquire the knowledge, skills, and dispositions necessary to help all students learn. These experiences include working with diverse higher education and school faculty, diverse peers, and diverse and exceptional students in P-12 schools

Finally, the turnover rate in education is considerable. The National Commission on Teaching and America's Future (NCTAF) reported that nearly one-third of new teachers leave the classroom after three years and almost 50% leave after five years (NCTAF, 2003). High attrition rates during these early years of the teaching career may remove some potentially very good teachers from the classroom. Many times, these teachers are replaced with new teachers who have much less experience, and may even, worse yet, be replaced with people who have no teaching experience and perhaps even no teaching degree. This inability to retain half of our teachers obviously has a huge impact on the quality of teachers

in our public schools. It has been suggested that much of this attrition rate may be due to teachers who are under-prepared to face the complexities of daily life in a classroom (Goodlad, 1994), and who have difficulty applying the theoretical concepts learned in their teacher education programs to actual practice (Zeichner, 1992).

This study addressed these concerns by offering pre-service teachers the opportunity to interact and communicate electronically with practicing teachers in today's classrooms along with university professors specializing in the preparation of teachers. The development of such an electronic learning community allowed the pre-service teachers to situate their learning squarely within the practice of teaching and to be guided by more experienced professionals in their field, thus honoring the notion of legitimate peripheral participation in a new community of practice (Lave & Wenger, 1991). This study explores the computer-mediated communications in which the participants engaged throughout the process. Through sustained and supported dialogue, these soon-to-be teachers participated in a professional community in which they discussed the practical applications of the theories and concepts they were studying in class, as well as many of their concerns and questions about their beginning years of teaching. They learned about educational theories and concepts through traditional means of textbooks, lectures, and class activities, but also through newer techniques that technological advances have made possible. The students viewed CD-ROM based video case studies of teaching, and talked with teachers and professors from diverse backgrounds via chat rooms and threaded discussion lists. The pre-service teachers were immersed in the context of teaching, situated in the practice, with more experienced others guiding them to fuller participation in their community.

This use of technologies in the pre-service teacher education classroom brings technology into the curriculum with a purpose. Computer-mediated communication allowed these pre-service teachers early access into their community of practice. The technology was used as a strategy to promote thinking about complex issues in teaching and to promote the development of thinking about the problems and contextually situated demands involved in teaching. It provided access to knowledge that was social and distributed in nature, helping to bridge the two worlds of university and school. In this way, technology was not used for the sake of technology itself, but was used as a means to an end. The end, in this case, was to provide a field experience and clinical component to the course and to encourage the

awareness and appreciation of diverse settings and the complexities inherent in teaching. The study of the processes engaged in during this project, as well as the experiences of the participants, provides valuable information to teacher education programs on the importance of such experiences in the pre-service classroom.

### *Purpose of the Study*

According to the literature, many novice teachers enter the field feeling that their teacher preparation programs did not fully prepare them for the role they must fulfill as a teacher (Corley, 1998; Nagel & Driscoll, 1992; Olson & Osborne, 1991). They commonly voice the concern that their methods courses and/or their program prior to student teaching did little to prepare them for the realities and complexities of the classroom.

One culprit may be a disconnect between theory and practice that some traditional teacher education courses appear to have inherent in the structure of the course when they focus on theory in isolation. This disconnect may lead to many new teachers' lack of ability to practically apply what they learned in their pre-service programs. The purpose of this study was to investigate an educational psychology course for pre-service teachers that was implemented without that traditional disconnect.

This research explored the experiences of the participants involved in a computer-mediated community of learners (CMCL) as they studied, learned, and talked about teaching through the use of CD-ROM based video case studies and computer-mediated communication. Below and on the following page are graphics depicting teacher education courses both with and without the traditional disconnect between theory and practice.

Figure 1.1

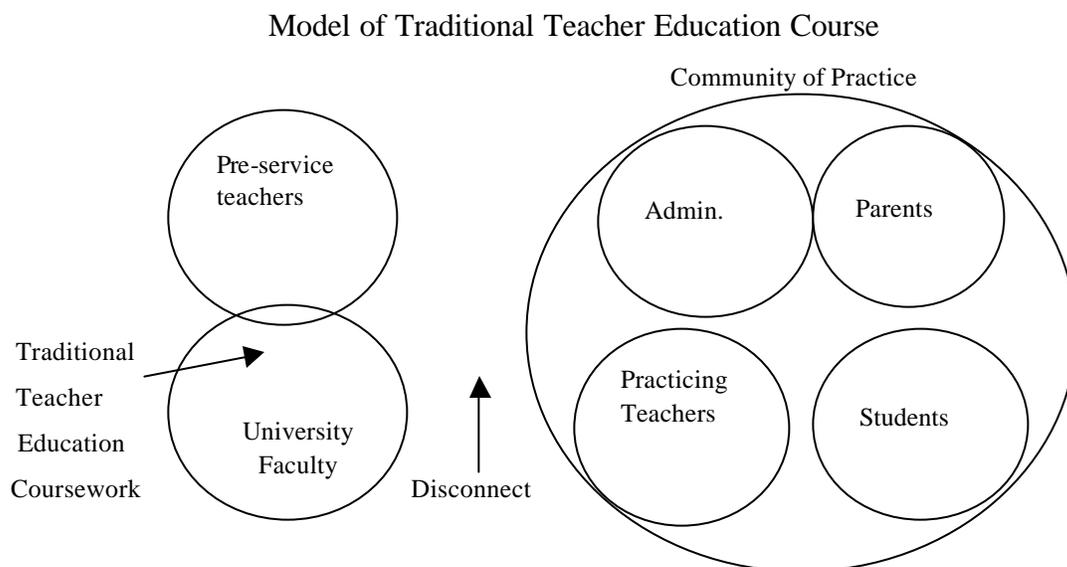
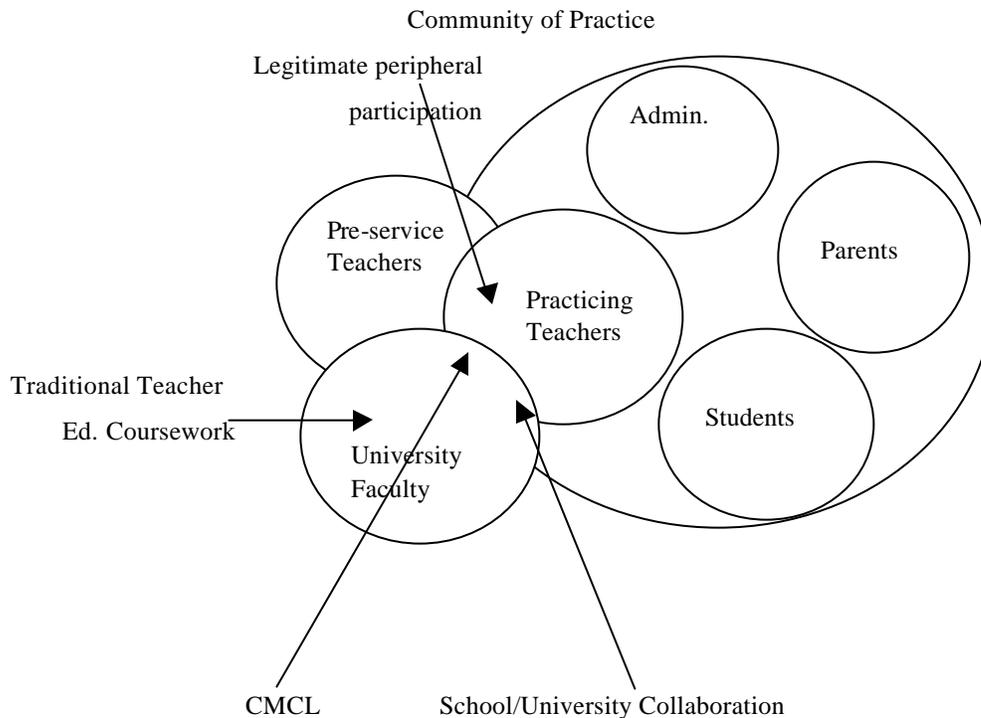


Figure 1.2

Model of Teacher Education Course Using CMCL:



*Research Questions*

This study specifically looked at the communication that occurred in this CMCL context as well as the learning outcomes of the student, teacher, and professor participants. The following research questions guided the study:

*Focusing on the CMCL conversations:*

- a) What is the nature of the on-line conversations and how do they unfold over time within a session and across a semester?
- b) What does each participant group (i.e., pre-service teachers, practicing teachers, university professors) learn from communicating with the other participant groups?
- c) How is reflection supported and/or constrained in a computer-mediated learning environment?

*Focusing on the implementation of the technology:*

- d) What do participants report as the benefits and challenges of CMC as related to

the study of educational psychology? Learning to teach?

e) What are the benefits and difficulties of creating and maintaining a CMCL?

#### *Limitations*

Limitations of this study include the fact that this research looked only at one class and its implementations of these technological components. In addition to this, the class is relatively small in comparison with class sizes typical of foundations courses. The higher the enrollment in the course, the more difficult it would be to find enough teachers and professors to participate and the harder the logistics of scheduling chats and other activities would become. Consequently, this research is looking at a rather ideal situation in terms of class size and number of teacher participants.

Finally, the technological components of the course being studied and the ideas for their implementation evolved from my work during my doctoral program and were implemented in the educational psychology course as my dissertation research. Therefore, I was responsible for the organization and management of these components of the course. This involved large amounts of time just devoted to the scheduling, organization, and management of the online activities, as well as to the preparation of, and guidance for, the teacher and professor participants. This workload was possible for a doctoral student conducting dissertation research. It would be incredibly more difficult for a professor who is involved with teaching other classes and with doing research and writing to implement these activities to the scale that they were implemented in this study.

#### *Summary*

Preparing pre-service teachers to be ready to meet the complexities they will face in today's classrooms is a challenge faced by teacher educators across the country. The purpose of the study was outlined and questions that were addressed in the research were presented along with the limitations of the study. This section gave a brief overview of the study along with a rationale for the research.

## Chapter Two

### REVIEW OF THE LITERATURE

#### *Introduction*

While the process of learning to teach is a very complex enterprise, it can be equally as complex for those of us in the professional community who seek to understand how the process develops and how to best foster that development. Much research has been done on learning to teach as well as on teacher education practices at all levels of the teaching continuum, from pre-service teacher education programs throughout the career span of the practicing teacher. Though much has been learned about this challenging process, there is still even more to learn about the development of learning to teach and what implications that may have in providing the most appropriate learning experiences in pre-service programs and professional development opportunities.

To that end, this document summarizes what is known about the continuum of learning to teach and specifically looks at the theory of situated cognition and its possible application to the development of an electronic learning community such as the one indicated in this study. Finally, this review looks at research conducted in computer-mediated communication in the field of teacher education.

#### *Search Procedure and Rationale*

In order to conduct this review, the following sources were searched for articles on learning to teach, as well as for articles on the Theory of Situated Cognition, and computer-mediated communication: the PsycInfo database, the ERIC database, Educational Full Text, relevant chapters of the Handbook of Research on Teacher Education (Houston, 1990) and Sikula (1996), the Handbook of Educational Psychology (Berliner & Calfee, 1996), the Handbook of Research on Teaching (Richardson, 2001), the Handbook of Research for Educational Communications and Technology (Jonassen, 1996), book chapters, and the reference lists of each relevant book chapter and research article found during the searches.

This review examines the developmental process of learning to teach by reviewing and summarizing the major conceptual themes and ideas from the literature from 1980 to present. Then, the theory of situated cognition is reviewed and explained in relation to its usefulness in the study of learning to teach. Finally, studies of computer-mediated

communication in teacher education are reviewed and analyzed.

### *Learning to Teach*

In light of the most recent focus on teacher accountability measures and teacher preparation programs, it is timely to review what is known about teacher learning and to examine current practices. This is important for several reasons. First, learning to teach is a complex and difficult process. As such, the turnover rate in education is considerable. The National Commission on Teaching and America's Future (NCTAF) reported that nearly one-third of new teachers leave the classroom after three years and almost 50% leave after five years (NCTAF, 2003). This inability to retain half of our teachers obviously has a huge impact on the quality of teachers in our public schools. Goodlad (1994) suggests that much of this attrition rate may be due to teachers who are under prepared to face the complexities of daily life in a classroom. If this is so, then what experiences can teacher education programs provide that would be most effective in preparing our future teachers for these complexities?

Second, it is important for programs of teacher certification to consider the research on learning to teach due to the standards set forth by the National Council for the Accreditation of Teacher Education (NCATE) and by the Interstate New Teacher Assessment and Support Consortium (INTASC). These standards are rigorous and hold high expectations for our new teachers and the programs that prepare them. It is therefore important not only to be aware of pre-service teacher learning needs, but also to be cognizant of the research findings on best practices for programs to offer so that pre-service teachers will not only be prepared to meet these standards, but will also be prepared well for their new career and for the students who await them.

Third, even if novice teachers have had the best undergraduate preparation available, it is impossible to completely prepare them for every situation or student they may encounter. The demands of teaching in a real-life classroom are diverse and contextually situated and may even be overwhelming for a novice teacher if he or she is left unsupported. Therefore, it is important to examine what is known about the needs of novice teachers and what kind of support and professional development opportunities would be most beneficial in helping them bridge their teacher preparation with real life school situations. It is important to help them be not only the most effective teachers they can be for their students, but also to help

them feel competent and successful so that they will remain in their teaching career.

Finally, it is important to consider the learning needs of experienced teachers. It may be easy to fall into routine and to become so automatized that teaching becomes a dull daily routine. This may, in turn, create a dull daily routine for students as well, thus decreasing learning opportunities and teaching effectiveness. It is important to consider that the wealth of experiences that lead to expertise may also lead to stagnation without opportunities for professional renewal. Additionally, literature on teacher burnout has pointed to the notion of boredom and apathy as factors contributing to teacher burnout and attrition in mid-career teachers (Huberman, 1993). Professional development opportunities for experienced teachers that are supported, sustained, and within the context of the teachers' professional needs and experiences and that draw on their expertise and professional abilities may do much to enhance practicing teachers' satisfaction with professional experiences as well as increase teaching effectiveness (Wildman, Niles, Magliaro, & McLaughlin, 1989).

The reasons stated above briefly outline the importance of understanding the continuum of teaching and the fact that learning to teach is not completed at the end of a pre-service program or at the end of the first two or three years of practice. Teaching is a reciprocal process, situated in practice, interacting with the context of the learning, the community, the culture, the students, and all the surrounding environs. The remaining sections of this review develop these notions of teaching with a specific focus on aspects of the literature that support the development and implementation of an electronic community of learners as a way of immersing pre-service teachers in their new community of practice.

#### *Learning to Teach as a Developmental Process*

Carter (1990) stated that, "how one frames the learning-to-teach question depends a great deal on how one conceives of what is to be learned and how that learning might take place" (p. 307). Does learning to teach mean finding and developing a personal teaching persona, or learning the content of methods and foundations courses, or does it mean merely completing the teacher certification program? There seems to be considerable variation across the literature on what learning to teach means, as well as on what is considered important in learning to teach. Additionally, disparity exists in the ways in which teacher development across the career span is characterized. This variation, according to Wideen, Mayer-Smith, and Moon (1998), highlights the fact that all research is conducted through a

particular lens, which ultimately bears upon what is recognized as important and on what is reported.

The process of learning to teach has been defined in a variety of ways by researchers. Rose and Church (1998) talked about learning to teach as simply the acquisition and maintenance of practical teaching skills while other researchers have addressed the complexity of issues involved in learning to teach (Borko & Putnam, 1996; Labaree, 2000; National Center for Research on Teacher Learning, 1991; Putnam & Borko, 2000; Wideen, Mayer-Smith, & Moon, 1998; Wood & Bennett, 2000).

Some researchers have addressed the process of learning to teach through the concept of the development of expertise (Berliner, 1986; Borko & Putnam, 1996; Dreyfus & Dreyfus, 1986; Sternberg & Horvath, 1995). However, Eraut (1994) cautioned this discussion of expertise with his assertion that expertise is fallible. He maintained that teachers move backward and forward in their display of expertise as they are involved in new situations from new courses to new grade levels.

Most recently, constructivist views of teacher learning are being posited. From a constructivist stance, teacher learning is seen as an interpretive process through which teachers make sense of their experiences by creating unique frameworks of knowledge (Resnick, 1991; Richardson, 1999). Black and Ammon (1992) added their perspective of their view of learning to teach as the constructive progressive development of levels of pedagogical thinking. Labaree (2000) spoke of teacher learning as being both natural and constructed. His stance is supported by Lieberman and Miller's (2000) notion of teacher learning occurring from a combination of outside knowledge such as research, conferences, and workshops with inside knowledge such as self-examination of practice.

Additionally, researchers have proposed various models of teacher development throughout the career span, which assumedly correlate with the amount and kinds of teacher learning gained. The National Center for Research on Teacher Learning (1991) proposed three stages of teacher development including pre-teaching, early teaching, and experienced teaching, while Burke (1987) proposed the eight cyclical stages of pre-service, induction, competency building, enthusiastic and growing, career frustration, stable and stagnant, career wind-down, and career exit. Davis and Zaret (1984) offered four phases called pre-service, student teaching, provisional, and practical; Bolam (1990) identified the five stages of

preparatory, appointment, induction, in-service, and transitional; and Kremer-Hayon and Fesler, as cited in Day (1999) offered nine stages to include pre-service, induction, competency, building, enthusiasm and growth, career frustration, stability and stagnant, career wind-down, and career exit. Kremer-Hayon and Fesler's model is notably similar to Burke's model mentioned above. According to Day (1999), however, the most influential of all the studies of teachers' career development were those of Fessler and Christenson (1992), Huberman (1993), and Sikes, Measor, and Woods (1985). Their work suggested broad phases rather than specific stages. Those phases included launching the career, stabilization, new challenges and concerns, reaching a professional plateau, and a final phase that consisted of disenchantment, increased pursuit of outside interests, or contraction of professional activities.

So, what have all these varying research lenses and conceptions of learning to teach contributed to what is known about teacher learning? In general, the literature reveals that teacher learning is an on-going process, one that is built upon throughout the years, and one that changes and evolves. Learning to teach is cumulative in nature in that teachers learn from past successes as well as from past failures. Throughout all of these diverse views, stages, and conceptions of learning to teach, two themes seem to remain constant - - the notion of learning to teach as continuing throughout the career span and the development of that learning as progressively becoming more complex. These themes provide the impetus for this review to consider the combined research on teacher learning and teacher career stages as a foundation for a developmental view of learning to teach.

Learning to teach must be considered a developmental process due to the two consistencies from the research literature just mentioned. Literature from the field of human development has established several conceptions of the developmental process that have become widely accepted (Lerner, 1998; Overton, 1994; Vasta, Haith, & Miller, 1999), and that are very similar to what the educational research literature has reported about teacher development. The conceptions include that development: (a) occurs at different rates and at different times for each individual, (b) is orderly yet discontinuous, (c) is affected by the environment and personal experiences of the individual and, (d) progresses from simple to more complex.

Feiman-Nemser (1983) has addressed the developmental nature of learning to teach

by offering her version of the stages through which one progresses. But most notably, she identified a pre-training phase, which occurs before prospective teachers even realize they are learning about teaching. Her second phase considers the pre-service experiences when formal education is undertaken. This is followed by the induction or new teacher phase and then finally, the inservice phase which spans the rest of the teacher's career span.

Additionally, Feiman-Nemser and Buchman (1989) asserted that conceptions of learning to teach should focus on individual capacities and concerns by addressing the prior beliefs and experiences of teachers. The importance of addressing prior beliefs and experiences in teacher preparation programs has been purported by a number of researchers (Borko & Putnam, 1996; Feiman-Nemser, 1983; Feiman-Nemser & Buchman, 1989; Richardson, 1996,1999; Zeichner, 1987) and is only one method teacher education programs can use to support the individual developmental process of learning to teach.

As just mentioned, learning to teach can be considered a developmental process due to the fact it is a unique individual enterprise to which people bring varying beliefs, attitudes, abilities, values, and experiences (Putnam & Borko, 1997; Richardson, 1996). But the process of learning to teach can also be likened to other aspects of a developmental process. The development of learning to teach occurs at different rates and different times for each teacher and continues to be affected by the unique environment, situation, and context of each teacher (Borko & Putnam, 1996, Feiman-Nemser, 1983; Putnam & Borko, 2000). Additionally, research in novice-expert paradigms has shown that teachers' learning becomes more complex with time and experience (Berliner, 1986; Sternberg & Horvath, 1995), and that while the development of expertise is orderly in that it becomes progressively more refined, it is also discontinuous in the face of new teaching and learning challenges (Eraut, 1994).

Due to this developmental nature of learning to teach, considerable variance is seen across individuals in both the degree and depth of teacher learning. The question then becomes, what experiences or opportunities can teacher education programs provide in order to most effectively nurture that development? And furthermore, what professional development opportunities support the continued growth and development of teacher learning for practicing teachers? The next section of this review looks specifically at the stages of teachers' career spans from pre-service to novice to experienced with a focus on

practices that could nurture their continued development.

### *Practices for Professional Development*

Although teacher education programs may be able to support this developmental process of learning to teach during the college years, learning to teach is not necessarily synonymous with teacher education. This learning process begins long before pre-service teachers enter college (Feiman-Nemser & Remillard, 1996). From a very early age, we are surrounded by teaching experiences. These earliest experiences filter the more formal academic learning that is later expected in teacher education programs (Feiman-Nemser & Remillard, 1996; Putnam & Borko, 1997). Lortie (1975) first referred to these early experiences as the “apprenticeship of observation” that students experience during the ten thousand hours of exposure they have with teachers and life in the classroom. These unique experiences provide prospective teachers with personal, individual characteristics that they will bring with them into teacher preparation. So strong, in fact, are these early experiences that Zeichner (1986, 1987) argued for the need for conceptualizations of how these individual characteristics interact with teacher education programs.

Furthermore, these individual beliefs and characteristics tend to persist into the career of the practicing teacher. As Calderhead (1988) noted, becoming and staying a teacher involves complex changes and development not only in teaching behavior but also in cognition and emotion and these changes occur within powerful contexts. If research from human development and cognition is applied to teacher education practices, it follows that educational and professional development practices must be appropriate for the individual, must allow for individual differences in rate and acquisition of learning, and must be experienced in a meaningful context.

In this age of reform efforts and change, it is important to remember that teachers are the primary change agents for our schools. In the end, teachers will change schools by first understanding themselves and their contexts (Diamond, 1991). This is the challenge for teacher education throughout all stages of this developmental continuum.

*Pre-service teachers.* As mentioned earlier, the knowledge and beliefs that prospective and experienced teachers hold serve as filters through which their learning takes place. For pre-service teachers, this filtering first occurs during their teacher education programs and determines how their university experiences will be interpreted (Ross,

Johnson, & Smith, 1991). According to Pajares (1992), beliefs about teaching are well established by the time the student enrolls in a teacher education program. Richardson (1996) stated that these prior beliefs about teaching come from personal experiences, schooling and instruction, and formal knowledge. They typically enter pre-service education programs as idealistic, liberal, and humanistic, and they tend to see teaching as a mechanical transfer of information (Richardson). In spite of most university programs' attempts to help prospective teachers learn to teach in ways that are fundamentally different from how they were themselves taught, most pre-service teachers leave the program with the same enduring beliefs with which they entered the program (Cochran-Smith, 1991), and many student teachers report feeling ill-prepared by their university programs for the experiences and challenges they face in the classroom (Wideen, Mayer-Smith, & Moon, 1998). Due to these findings, Calderhead and Robson (1991) suggested that the alternative to changing beliefs is to build on the beliefs that already exist.

Pre-service teachers can be guided in building on their beliefs through the use of reflective practices. Reflection is undertaken not so much to revisit the past or to become aware of the metacognitive process one is experiencing, but rather to guide future action (Brubacher, Case, & Reagan, 1994). Kagan (1992) has told us that teaching remains “. . . rooted in personality and experience and that learning to teach requires a journey into the deepest recesses of one's self-awareness, where failures, fears, and hopes are hidden” (p. 137). This journey requires reflection into what is considered of value and importance in our teaching. Learning how to teach is a deeply personal activity in which the teacher must consider his or her prior beliefs and reconcile them with the expectations of the university, the public school, the students, the parents, and ultimately him or herself. According to Grossman (1989), in an analysis of teacher education program studies, in programs where deliberative exploration and reflection were encouraged, empowered teachers blossomed.

Furthermore, helping pre-service teachers identify, build on, and challenge their prior experiences and beliefs may be one way to help candidates with different backgrounds begin to understand and appreciate the complexities that exist in daily classroom life. When they can begin to see beyond their own world and into others, they will begin to see that the methods, management, and content will vary given particular schools and students (Hollingsworth, 1989). They will confront the fact that there is no one right answer to many

classroom dilemmas. In this way, teachers become students of teaching. They confront the complexity and question the situations. They learn to become problem solvers rather than managers.

As Dewey (1904) stated, programs that promote inquisitive teachers who are inclined to be students of their teaching are likely to be at a disadvantage initially because they will have fewer ‘things’ to do. But over the long run, the ability to problem solve within a situation, to study it and to develop appropriate courses of action that are grounded in solid pedagogical decisions, will lead to a stronger teacher.

*Novice teachers.* Under the best of circumstances, pre-service teacher education programs can only be a beginning. It is when the sole responsibility of a classroom full of children is handed to the beginning teacher that the essentials of learning to teach begin (Kohl, as cited in Feiman-Nemser, 1983). These beginning teachers often start their first job with idealistic expectations and soon become disillusioned, feeling ill-prepared for their work by the university that granted their certification (Wideen, Mayer-Smith, & Moon, 1998).

Learning to teach is a complex process that perhaps peaks during the new teacher’s first year. New teachers must conform to the same standards and meet the same expectations as teachers that have been practicing for twenty years. As Wildman et al (1989) noted, new teachers are functioning in a dual role. They are both teaching and learning to teach. This can be a cognitive capacity problem for novice teachers and the complexity of these combined tasks can be quite overwhelming.

This first year of teaching is widely considered a critical time in learning to teach, but most beginning teachers have to flounder on their own (Feiman-Nemser, 1983). This only serves to increase their use of practices that will merely help them survive and reinforces the belief that university preparation did nothing to prepare them for the realities of the classroom. In this way, novice teachers learn to rely only on themselves and to develop individualistic teaching approaches (Wildman et al., 1989). This situation makes it almost inevitable that novice teachers will revert back to their prior personal experiences and can also perhaps explain why it is so difficult for American education to break the cycle of teaching as we were taught.

One method that has been proposed to break the cycle of isolationism and individualism is to assign beginning teachers a mentor. This practice is based on the

assumption that on-the-job support by mentors can accelerate success and effectiveness among beginning teachers as well as help reduce the attrition rate. Thomsen and Gustafson (1997) point out that an effective mentoring experience leads to beginning teachers' increased satisfaction and competence in teaching, consequently, professional growth of mentored teachers outpaces non-mentored ones. This, in turn, increases the retention rate of new teachers.

A successful mentoring relationship, an early form of collaboration, for new teachers can provide the guidance, support, and opportunities for inquiry and reflective practices necessary to ensure professional growth in the new teacher. However, this mentoring relationship typically ends at the completion of the first year and the novice teacher finds him or herself in the isolated activity of teaching that has become standard practice in American schools.

This isolationist atmosphere does not have to be the case, nor should it be, as collaborative engagements have been found to be beneficial to teachers at all stages of teaching. According to Merseth (1992), surveys report that both first-year and experienced teachers rank direct and immediate access to advice and assistance as most helpful in becoming a more effective teacher. Additionally, the literature suggests that for the most part, mentoring is a positive experience for the mentor as well as for the novice (Howey, 1988; Wildman et al., 1989). Furthermore, as teachers engage in reflection and consider their practice, they become able to engage in inquiry that may lead to improvement of their practice (Zimpher, 1988). In this way, collaborative experiences, specifically mentoring for novice teachers, encompass the three conceptions on which this review is focusing on as foundational for teacher education practices; reflection, inquiry, and collaboration. It is through such avenues that in these early critical years of the teaching career, teachers may be guided from being concerned about learning to teach to instead considering how to learn from teaching.

*Experienced teachers.* On the road from novice to expert teaching, teachers develop well-constructed and carefully managed classroom routines that aid the productivity and efficiency of their classrooms. They typically have particular classroom rules, procedures, and expectations that endure throughout years of teaching various students. These routines lead to the efficiency of the expert teacher (Berliner, 1986), but these same routines can

become so entrenched in the daily lives of teachers that they become habits that are hard to break even in the face of conflict, when the routines no longer are efficient for a particular student or students.

Again, prior knowledge and beliefs serve as filters through which teachers view new experiences and learning. As teachers accumulate years of experience in teaching, they likewise accumulate years of experiences to store away and use as filters to make sense of new experiences (Zeichner, 1986). These filters may become so expected and so automatically assumed, that new experiences may be viewed in a distorted or misguided manner, or maybe not even be truly seen at all. Teachers can become almost blinded to new approaches or to changes in their pedagogy by becoming so governed by what they expect to happen in the classroom and by the routines they have established to handle what they have come to expect.

Reflection is an important tool in understanding our actions and in guiding our future actions. Little (1982) concluded that two critical features of schools that are conducive to continued learning by teachers are norms of collegiality and experimentation. Teachers expect to work collaboratively on the planning, implementation, and evaluation of various teaching activities and they view improvement in their knowledge, beliefs, and practices as never-ending.

It is possible for these norms to be established in all schools. Practicing teachers may not have the extra time that would be required to reflect in the written form of a journal or other such endeavor, but providing teachers some time for professional associations and collaborations with colleagues provides optimal opportunities to discuss pedagogical practices, reflect on their own practices, and gain new insights. It is common that teachers work in isolation, in solitary classroom confines, without the professional interactions available in other fields (Labaree, 2000). This environment lends itself to creating teachers who are isolated, routinized, automatic, and stagnant. Teachers must have the opportunity to learn and reflect about new instructional strategies and ideas in the context of their own classroom by situating knowledge and learning in the contexts in which they will be used (Borko & Putnam, 1996).

### *Summary*

In light of such research findings, it is imperative to consider ways in which teacher

education may provide an integration of formal and experiential learning experiences, especially at the pre-service level. The research suggests it is important to find ways to help beginning teachers reflect on their experiences and to engage in inquiry by analyzing those experiences. Furthermore, collaboration has been shown to be an effective way of combining the resources of teachers and of supporting and enhancing teacher learning all along the career continuum.

### *Theory of Situated Cognition*

The theory of Situated Cognition encompasses three conceptual themes (Brown, Collins, & Duguid, 1989). Those themes are: (a) learning is situated in particular contexts, (b) learning is social in nature, and; (c) learning is distributed across the individual, other persons, and tools. It is important to understand the conceptions behind these themes in order to apply them effectively through the use of technology, more specifically, in web-based learning communities, which is the focus of this study. Each theme is briefly discussed below and is followed by a discussion of the use of the situative perspective in teacher education (Borko & Putnam, 1996; Putnam & Borko, 2000), which is based on the Theory of Situated Cognition.

### *Learning as Situated*

Programs of teacher education have traditionally been based on the belief that learning to teach is a process of acquiring knowledge about teaching (Carter, 1990). More recent shifts in practice honor the individual involved in the process of learning to teach. This shift has focused upon prior beliefs and experiences of beginning teachers by focusing on cognitions, beliefs, and the making of meaning as the desired outcomes of teacher education (Richardson, 1999). Teaching that honors this stance is less a matter of presenting factual information and ready-made knowledge, but rather consists of creating environments that support learners in their efforts to construct knowledge in a way that is meaningful for them (Borko & Putnam, 1996). This focus on the individual in the center of the context of learning to teach also supports the idea that knowledge cannot be thought of as independent from the contexts and situations in which individuals acquire and use it (Borko & Putnam, 1996; Putnam & Borko, 2000).

### *Learning as Social*

The sociocentric view of knowledge and learning holds that what we learn and how

we think are the results of our interactions with groups of people in our culture over time (Soltis, 1981). This notion also has profound implications on understanding the powerful influence prior experiences and beliefs hold for beginning teachers. They have, after all, had at least 16 to 17 years of experience in classrooms with teachers during their own educational careers and have learned throughout those interactions. Novice teachers often will revert to teaching as they were themselves taught in spite of the teacher education programs' philosophies they most recently experienced. This may be due in large part to the isolation teachers often experience in the confines of their classroom and their daily routine as they struggle to meet new challenges; they revert to what is most comfortable, to what they know best. It is important to consider the profound impact social situations have on learning and to continue that process throughout the pre-service preparation program and into the teaching career in order to avoid that isolation.

In a survey conducted by Smylie (1989), teachers reported “consultation with other teachers” as the most effective source of learning to teach second only to “direct experience as a teacher.” (p. 546) Similarly, Lave and Wenger (1991) propose the concept of legitimate peripheral participation. This offers the notion of a gradual involvement into a community of practice that starts out peripheral and then increases in engagement and complexity (Leach, 1996). The implications of this for teacher education would suggest that pre-service and/or novice teacher learning be supported by a social network of more experienced others guiding them to become full participants in their community of practice.

### *Learning as Distributed*

The idea of learning as distributed builds upon and expands the social nature of learning. Theorists assert that knowledge, rather than existing solely in the individual, is distributed across all the members of a learning community, as well as across the social, cultural, and physical tools and symbols of the community (Lave, 1988). Thus, for situative theorists, the whole is literally greater than the sum of its parts. The distributive approach to learning assumes and strives for interdependence among supportive subsystems within a socio-cultural system (Converso, Schaffer, & Guerra, 1999).

### *Implications for Teacher Education*

The situative perspective of learning suggests that the learner be at the center of the instructional design by honoring prior knowledge, beliefs, and the making of meaning. This

perspective also assumes the importance of learning environments that allow the student to problem solve and construct meaning for themselves within a social network of supportive others. These notions can be supported in teacher education through the use of such practices as case methods, reflection, and collaboration and mentoring, all of which may be embedded within, and supported by, a community of learners. Each practice is briefly discussed.

*Case method.* The notion of situated learning for teachers implies situating their learning within the context of the classroom. For pre-service teachers though, situating learning would imply providing real world experiences within the realm of the profession in which they hope to enter. Student teaching and field experiences in teacher education programs are examples of situating learning within the realm of professional experience. However, for a variety of reasons, it is often difficult to find placements for teacher candidates in local schools for field experiences. Many programs have looked for alternatives to field experiences and the case method has been an alternative often chosen (Shulman, 1992; Sudzina, 1999).

The case method of instruction has been used in law, business, and medical schools for quite some time and is rapidly gaining ground in teacher education as well. Cases are authentic slices of life that may illustrate any myriad of dilemmas from ethical issues to working with students with special needs. Research indicates that teaching with cases can offer a variety of opportunities to expand and extend teaching skills, problem solving abilities, and grasp of contemporary issues in today's classrooms (Sudzina, 1999).

Recent study of case methods has shown that case methods can contribute to constructed knowing as in the work of Shulman (1992). Shulman argues for the need to use cases to teach theory. He asserts that teachers see the practical through the lens of the theoretical and that cases can give students the opportunity to apply principles to particular situations. He argues that this brings the theory studied throughout teacher education programs to life by situating the learning in a practical and meaningful context and by allowing theory to enter practice through teachers' judgments. Presenting dilemmas without clear-cut, right-wrong answers allows the students to problem solve and actively apply theory they have studied to real world problems. Furthermore, the case method allows them to begin to see the nuances involved in the complexity of teaching.

*Reflection.* A second implication that may be drawn for teacher education programs

from the situative perspective is that, in order to center the learner in the context of the instruction, opportunities for the student to reflect should be amply provided. Time for reflection and thinking through these dilemmas affords the opportunity for the student to articulate their reasonings and helps them develop consciously informed actions (Valli, 1992). Teachers who talk about what they do and why are able to know what they do and why. They are able to question themselves and their practice and, therefore, learn from it. According to Belenky, Clinchy, Goldberger, and Tarule (1986), in order for reflection to occur:

the oral and written forms of language must pass back and forth between persons who both speak and listen, or read and write - sharing, expanding, and reflecting on each other's experiences. Such interchanges lead to ways of knowing that enable individuals to enter into the social and intellectual life of their community. Without them, individuals remain isolated from others; and without the tools for representing their experiences, people also remain isolated from the self. (p. 26)

*Collaboration and mentoring.* Finally, collaboration and mentoring are opportunities the situative perspective would support in a teacher education program. These practices support the idea of learning as social and as distributed across a network of others. Typically, applying mentoring practices in a pre-service teacher education program has consisted of the support provided by a university supervisor and the cooperating teacher during the student teaching practicum only. Little to no opportunity for mentoring experiences prior to student teaching have traditionally been available for pre-service teachers.

Without such mentoring experiences, it is difficult to provide the scaffolding that is necessary to move these pre-service teachers more fully into their new community of practice. The goal of the student teaching experience has been to help student teachers apply the concepts and theories they learned in the teacher education program to the practical setting of the public school classroom (Reiman & Sprinthall, 1998), but it may be that earlier and more integrated mentoring experiences could provide the pre-service teacher with a stronger grasp of theoretical and practical connections.

### *Summary*

Learning to teach is a process that begins long before formal training in a teacher

education program begins (Feiman-Nemser & Remillard, 1996; Lortie, 1975; Putnam & Borko, 1997), and one that continues throughout teachers' careers. However, the learning curve is perhaps greatest at the level of pre-service teachers when they are being introduced to the complexities of the field. These future teachers could benefit greatly from a focus on the integration of theory and practice in the context of a learning community where they may reflect, interact, and communicate with more experienced others in their field. This review highlighted a variety of ways in which teacher education programs could accomplish this.

The theory of Situated Cognition was reviewed and the notions of learning as social, situated in context, and distributed across a community were presented in the context of methods that honor that stance. The remainder of this literature review will look at ways the situative perspective could be honored as practices occurring within an electronic distributed learning community. To that end, the next section of this review focuses on previous studies that have used computer-mediated communication in teacher education.

### *Computer Mediated Communication*

#### *Introduction*

This section examines research in computer-mediated communication that has been conducted in teacher education settings and includes studies from 1990 to present. The studies either look at computer-mediated communication as one course component within a course or they focus on the implementation of an electronic learning community. First, this review defines computer-mediated communication and its possible roles and uses and then looks at the notion of how computer-mediated communication may support electronic learning communities as a new possibility for teacher education. Next, a critical review and an analysis of the research conducted in this field are offered, followed by possible implications for teacher education programs.

*Computer-mediated communication defined.* Computer-mediated communication (CMC) is defined by Romiszowski and Mason (1996) as a process of, "communication between different parties separated in space and/or time, mediated by interconnected computers" (p 438). Santoro (1995) defined it more concretely as computer applications that are designed for direct human-to-human communication, including electronic mail, conferencing systems, and chat rooms. Santoro also offers three categories of CMC functions including informatics, computer-assisted instruction (CAI), and conferencing.

Computer-mediated instruction that could be defined as informatic includes data archive sites, remote databases, and public access sites. CAI involves a computer that has been programmed to serve as a tutor or a guide to a student user. The third category of CMC, conferencing, is the category on which this review focuses. This category includes uses of the computer that enable human beings to have direct communication with other human beings. The computer does not serve as a processor of information in any way, as it does in the first two categories of CMC just discussed. Rather, the computer serves as a mediation tool allowing human beings from distant locations to communicate with each other. These functions include electronic mail, interactive messaging systems, and group conference systems (Santoro, 1995).

The possibilities for communication these relatively new technological capabilities offer are varied. The next section looks at the category of CMC known as conferencing with a more focused approach by considering the use of conferencing capabilities to support an electronic learning community. The notion of an electronic learning community is discussed here as a function of a role it could play in a pre-service teacher education program. This notion of community is further discussed as it is supported by the literature for teacher education.

*Electronic learning communities.* Electronic learning communities have the potential of supporting what research has identified as important in pre-service teacher education programs in new and exciting ways. They support the concept of the situative perspective and, as mentioned earlier, although case methods, reflection, collaboration and mentoring have all been used in teacher education programs in varying ways, technological advances allow us to take each of these strategies a step further.

An electronic learning community honors the stance of situating the learner in the context of the practice by creating an environment for learning in which community members talk, reflect, and interact in order to learn about teaching rather than only focusing on presentation of material. In this way, it acknowledges the perspective that knowledge cannot be thought of as independent from the contexts and situations in which it is acquired and used (Borko & Putnam, 1996; Putnam & Borko, 2000). It offers pre-service teachers the ability to collaborate with colleagues while also providing opportunities for reflective practice, in this way providing access to distributed learning while also allowing the

individual learner to construct knowledge in meaningful ways.

Additionally, it provides a new forum for the presentation and discussion of case methods based in real world dilemmas encouraging the use of problem solving abilities. Through technology and the use of video-based case studies, pre-service teachers may have 'field' experiences that are much closer to reality than paper-based case studies can offer. A video of a classroom with real children behaving and learning in real ways offers many more opportunities for learning in the context of a real classroom situation than a paper-based case study ever could.

And finally, an electronic learning community offers the very unique advantage of providing pre-service teachers a learning community with the highest of potential for distributed learning with access to experienced teachers, administrators, university faculty, and a wide array of possibilities for participants in such a program. It honors the notion of legitimate peripheral practice noted by Lave and Wenger (1991) by providing the social network of more experienced teachers guiding them in their journey of becoming a teacher. This type of distributed learning has never before been possible and the potential for programs of teacher education is, as yet, largely untapped.

#### *A Review of Research on Computer-Mediated Communication*

This section looks at some of the ways in which CMC has been used in teacher education settings from 1990 to present. It looks at text-based forms of computer-mediated communication that are both synchronous, time dependent, and asynchronous or time-independent. Synchronous communication requires all participants to be online at the same time, such as the communication that occurs within a chat room. Asynchronous communication does not require that those communicating with each other be online at the same time, such as in electronic mail correspondence and threaded discussion lists. All the studies included in this review do share the common feature of having been conducted in teacher education settings using text-based CMC as one component in an otherwise traditional course. One study included in the review did not use text-based CMC, but instead used video-conferencing. This study was included for review due to the fact it studied the collaboration of pre-service and practicing teachers, as well as studied the role of teaching cases in the communication. Studies that looked at the use of CMC in entirely distance education courses were not included in this review.

Three types of uses for CMC in educational settings have been employed. They include utilization of CMC as the principal mode of instruction such as occurs in distance education classes, programs that offer a few courses by means of CMC, and the use of CMC as an enrichment component in otherwise traditional courses (Romiszowski & Mason, 1996). For the purposes of this review, it is the latter of the three uses of CMC that will be the focus, as this is the implementation of CMC on which this research is based.

The vast majority of articles to date that have been written about CMC are descriptive or anecdotal in nature or are opinion papers discussing the potentials and possible benefits of such forms of communication (Hatfield, 1996; Haugen, Ask, Bratseth, Engelsen, Lysne, & Tvedte, 2000; Hudson, 1999; Jacobson & Jacobson, 1998; Javid, 2000; Johanyak, 1997; Justice & Espinoza, 1999; Katriel, 1999; Laffey, Musser, & Tupper, 1998). Most studies that do exist on CMC have been conducted on distance learning courses where the whole course was online, rather than the CMC being an enrichment component in an otherwise conventional course (Chou, 2001; Egbert, Chao, & Ngeow, 2000; Irvine, 2000; Lally & Barrett, 1999; Lapadat, 2000).

More recent studies have begun to shift from those foci into actual studies of implementation procedures; however, most of these newer studies focus on the use of CMC between only the students enrolled in the same course, most typically using asynchronous forms of communication, or with student teachers communicating, again asynchronously only, with each other and/or with a university supervisor or teacher (Angeli et al, 1998; Bennett & Pye, 1998; Bodzin & Park, 2000; Hallenbeck, Bockorny, & Schnabel, 2000; Mason, 2000). Very few research studies exist on the use of CMC in teacher education as creating a learning community that extends beyond the members of the course.

There have been no studies done to date, such as the one presented in this document, that focus on the development and implementation of a learning community between pre-service teachers, practicing teachers, and university faculty communicating online about teaching via text-based forms of both synchronous and asynchronous computer-mediated communication.

Beginning on page 28, a table summarizes the research studies included for review in this analysis. The criteria used to select these studies included that: a) the research was conducted in a teacher education setting; b) the educational setting was not entirely a distance

education class, but the CMC was being used as one component of a course; c) text-based forms of CMC were used; d) development of a learning community was one of the goals of the study, and; e) research analysis discussed teachers' learning and/or students' learning during the process.

TABLE 2.1

STUDIES INCLUDED FOR REVIEW: THE USE OF COMPUTER-MEDIATED COMMUNICATION IN TEACHER EDUCATION			
Author/Year/ Focus	Purpose of Study	Sample/ Methodology	Results
Bliss, T. & Mazur, J. (1996)  Synchronous desktop video conferencing	Exploratory study to examine the potential of combining teaching cases with telecommunications technology to stimulate learning communities comprised of new and experienced teachers	6 experienced history teachers and 6 student teachers  Interviews	5 of the 6 experienced teachers reported changes in their thinking or in actual classroom practice in response to the cases  Both groups described benefits for informal mentoring  Students described benefits of open discussions in a nonevaluative environment  Teachers felt the experience was an opportunity to renew or refine aspects of their own teaching
Angeli, C., Supplee, L., Bonk, C., & Malikowski, S. (1998)  Asynchronous web-based conferencing	To discover whether pre-service teacher electronic conferencing on the web about early field experiences can have an impact on their learning of educational psychology and general apprenticeship within the teacher education program	146 undergraduate students  Experimental design – students randomly assigned to 1 of 2 groups. One group received heavy scaffolding from instructor and cooperating teachers (the HS group), the other group received help only from peers and from the instructor if they requested it (the WS group). Case discussion threads were analyzed for number of people who accessed system and contributed, number of messages and length of message, number and length of responses, and average length of a case thread. Surveys about attitude toward activities were completed at end of experiment.  Quantitative analysis	Electronic writing was a way for students to clarify their thinking about field observations and text material  Cooperating teachers seldom responded to student teachers' request for help with direct instruction – they electronically scaffolded or apprenticed learning.  There was a 20% reduction in the number of postings during weeks 4-6 of the 12 weeks Weeks 9-12 postings were longer, more thoughtful, and elaborative  Students in the HS group created more cases to discuss online with their mentors, but the WS group offered fewer cases of higher quality  Few student responses to the cases were grounded or justified in course material

<p>Brehm, B.(2000)</p> <p>Asynchronous web-based conferencing</p>	<p>To evaluate the effectiveness of pairing preservice and inservice teachers in an idea exchange and curriculum materials development project</p>	<p>23 preservice teachers in a language arts methods class/13 inservice teachers</p> <p>Surveys with a Likert scale, email exchanges, and threaded interactions</p> <p>Quantitative analysis</p>	<p>The closer the content from a discussion area is tied to class work, the more beneficial it is for students</p>
<p>Hacker, R., &amp; Sova, B. (1998)</p> <p>Asynchronous web-based conferencing</p>	<p>To determine the efficacy of computer-mediated delivery of courseware as compared to traditional university delivery methods and to determine the efficacy of learning in partnership with schools as compared to solely university-based learning (the courseware package was designed to help students learn lesson planning skills)</p>	<p>43 student teachers</p> <p>True experimental research design – participants were randomly assigned to four treatment groups – 1) taught at university, traditional lecture; 2) taught in partnership context, traditional lecture at university supplemented with a courseware package completed with the students’ supervising teachers; 3 &amp; 4) contexts were the same as for groups 1 and 2, but courseware delivery was via internet with email support provided by university instructor</p> <p>Students were pre- and post-tested</p> <p>Analysis – 2 way ANOVA with the delivery strategy and context as factors and pre-test scores as a co-variate</p>	<p>Students’ achievement gains were higher when computer-mediated delivery strategies were employed when compared with traditional university-based environment</p> <p>Students’ achievement gains were higher when students worked in partnership contexts than in a traditional university-based environment</p>
<p>Irvine, S. (2000)</p> <p>Synchronous and asynchronous web-based conferencing</p>	<p>To determine how online discussion can affect the learning outcomes for students involved in distance learning activities</p>	<p>42 undergraduate and graduate students</p> <p>Content analysis of 279 statements posted on email, threads, and chats</p> <p>Analysis conducted in 2 areas:</p> <p>1) Type of statements made (Procedural questions related to course – due dates, etc.; Statements related to course content, and; Statements not related to course content)</p> <p>2) Number of statements made in each type of CMC</p>	<p>Threads and email discussions seem to generate more thought and deeper consideration than either chat or face-to-face discussion</p> <p>During the early phase of a chat, a lot of time is used up on procedure</p> <p>In chats, students did not give much consideration to the views of others. They used other students’ statements as cues to offer their own statements.</p>

<p>Lally, V., &amp; Barrett, E. (1999)</p> <p>Asynchronous web-based conferencing</p>	<p>To identify and explore the ways in which CMC may reduce transactional distance by mediating academic and social dialogue between students and their mentors</p>	<p>16 postgraduate students and 8 tutor/mentors</p> <p>Transcripts were retrieved from the web and analyzed using coding categories developed by Henri (1992). Contributions were broken down into units of meaning and the units of meaning were placed in the appropriate category. Categories included: participative, social, interactive, cognitive, and metacognitive</p>	<p>An effective online learning community may operate best with a cooperative learning framework</p> <p>Enabling full and active student participation may depend upon critical characteristics of structure and process such as group size, the balance between social and academic discourse, and the nature and timing of online events.</p>
<p>Schlagal, B., Trathen, W., &amp; Blanton, W. (1996)</p> <p>Asynchronous (email) communication</p>	<p>To determine the efficacy of asynchronous communication in the development of reflection for students teachers</p>	<p>16 student teachers and 5 professors</p> <p>Students had one hour reflection periods as part of their day and were required to send two messages a week on email</p> <p>Email transcripts were analyzed according to content analysis. Four categories were used: responses to class assignments, socioemotional exchanges, housekeeping queries and bulletins, and spontaneous, sustained exchanges of ideas. A descriptive analysis of the final category is offered.</p>	<p>The email exchanges revealed joint construction of meaning as students and professors engage in discussion</p> <p>A significant strand of professional conversations occurred spontaneously on important themes</p> <p>The time investments in this email correspondence transformed a three-hour course into something like a 4 or 5 hour course for the professors involved</p>

*Summary of research.* Based on the studies reviewed, research on CMC in teacher education suggests that students be guided in connecting their coursework with their online conversations. Scaffolding is necessary to help the students make connections between their course work and the goals of their online work (Angeli, Supplee, Bonk, & Malikowski, 1998; Brehm, 2000). The literature also suggests students need time to develop thoughtful and well-composed reflections, a task which may be supported by threaded communication and email exchanges (Angeli et al; Irvine, 2000).

Four difficulties that may exist for the development of electronic learning communities with schools are (a) making sure technological innovations are based in the needs of the learner rather than the possibilities of the computer, (b) facilitating productive online communications, (c) helping teachers accept change and, (d) assuring the practical use of innovations to address teachers' professional concerns.

A basic concern in the development of technology as a tool for teacher education would be that the efforts to use technology should be based in the needs of learning rather than on the powers of the computer (Talley & Martinez, 1998). Sarason (1984) notes that, “. . . everything possible is not desirable. And desirability is not justified by technological possibilities; it requires independent, non-technological bases to provide good reasons” (p. 112). It is very important that technology serve education rather than the other way around.

Additionally, although technological communications can help teachers, researchers, and students engage in conversation, research in the field of telecommunications has shown that conversations may not be particularly substantive (Roup, Gal, Drayton, & Pfister, 1992). According to Peterson, McCarthy, & Elmore (1996), electronic conversations should be structured around a framework and focus on issues of practice. The implication of this is that it is important to guide the participants in productive conversations, perhaps centered on a topic for discussion, and both facilitate and scaffold the conversations (Roup et al).

Another issue is that while teachers, both practicing and pre-service, may initially be motivated by the desire to improve both their own learning and that of their students, they may become hesitant about change (Marx, Blumenfeld, Krajcik, & Soloway, 1998). Albraugh (1997) noted that historically, teachers have been resistant to using media while Marx et al. found that it takes time for teachers to deal with the issues underlying innovation. Teachers seek to find what will be useful to them for their professional concerns. As

practical professionals, teachers are often skeptical about new claims from researchers and they tend to adopt a new technology only when they view it as something that will help them do what they already do better (Cuban, 1989).

In this way, it is critical that an essential feature of new technologies and technology developments is that they must be useful in order to engage teachers and sustain that engagement (Marx et al., 1998). Although it is important to acknowledge this need for 'usefulness' by acknowledging the professional practical concerns of the teacher, it is also important to encourage risk-taking (Albaugh, 1997) so as to not merely enforce the status quo.

*Critical analysis of research.* As stated previously, and as can be seen from this summary of available studies, little research is available on the use of CMC in teacher education classrooms, as this research avenue is just getting started. Additionally, the majority of studies concerning the use of CMC have come from a quantitative/positivist perspective. Very few studies have been conducted using qualitative methodologies such as observation or interviewing, but even fewer studies have been reported that conducted analysis on the content of CMC transcripts. Qualitative studies such as these are necessary in order to develop and enhance the literature in this field (Romiszowski & Mason, 1996). The studies included in this review include three studies using a purely quantitative perspective, one qualitative study involving analysis of interviews only, and three studies using a content analysis approach to data analysis.

Content analysis has historically been very quantitative in nature (Merriam, 1998) and has come from a post-positivistic approach by creating very specific pre-determined categories and applying them to the data. The analysis then focuses on those pre-determined categories only, not allowing any further categories or patterns to emerge from the data. When adapted for use in qualitative studies, the communication of meaning is the focus (Merriam, 1998). The analysis then becomes inductive due to the fact that, "although categories may initially guide the study, others are allowed and expected to emerge throughout the study" (Altheide, 1987, p. 68). Of the three studies using content analysis in this review, all three began with pre-specified specific categories in which to include data and ended with the same categories, indicating a more quantitative approach to the use of content analysis. The one qualitative study in this review collected only interviews and did

not include observations and documents in the data collection and analysis, the complete triad of which is necessary for a well-developed qualitative study (Cresswell, 1998; Merriam, 1998; Stake, 1995). The research findings presented in this document build on existing literature and offer new perspectives from the use of qualitative methodologies.

### *Conclusion*

The development of an electronic learning community in which pre-service teachers interact with experienced professionals from the field is using technology in a way that does indeed serve educational purposes and it may offer one path to accomplishing our goals as teacher educators. Such a learning community encompasses the three dimensions of the conceptual framework upon which this research is based. Learning about teaching in an electronic learning community allows the learning to be contextual and social, as well as distributed. Learning is individual and yet, supported. With the technologies available to us as we enter the new millennium, the potentials and capabilities of learning communities are virtually endless as electronic learning communities offer such unique opportunities to teacher education.

Teacher education is not a process that ends upon completion of the university experience and the granting of certification. Learning to teach is a very complex process that continues throughout the career span. Practicing teachers can learn much from involvement with the mentoring and supervision of pre-service and novice teachers. Likewise, teachers and professors have much to learn from each other as well. All are interested in the most basic fundamental desire of our profession - the education of our nation's children. Within this common mission and shared purpose that Myers (1996) spoke of as necessary for a learning community, exists the foundations for a learning community that technological advances have made possible.

The challenge is not so much in the probable difficulties of using technology, but rather the challenge is to begin breaking down barriers that have existed between schools and universities, teachers and researchers, and theory and practice, for many years. The challenge is to work collaboratively with the schools to investigate the opportunities that technology provides us. Electronic learning communities may be one step toward that union.

## Chapter 3

### METHODOLOGY

#### *Introduction and Overview*

This study examines the experiences of pre-service teachers as they learned about teaching during an educational psychology foundations course, as well as the experiences of the practicing teachers and university professors as they worked and communicated with the pre-service teachers through the use of computer-mediated communication. The experiences of the participants were studied using a mixed method approach; that is, both qualitative and quantitative methods were employed. Specifically, this study was guided by the following research questions.

#### *Focusing on the CMCL conversations:*

- a) What is the nature of the on-line conversations and how do they unfold over time within a session and across a semester?
- b) What does each participant group (i.e., pre-service teachers, practicing teachers, university professors) learn from communicating with the other participant groups?
- c) How is reflection supported and/or constrained in a computer-mediated learning environment?

#### *Focusing on the implementation of the technology:*

- d) What do participants report as the benefits and challenges of CMC as related to the study of educational psychology? Learning to teach?
- e) What are the benefits and difficulties of creating and maintaining a CMCL?

In this chapter, a summary of the pilot project conducted for this study is shared. Also, the research design chosen for the study is discussed followed by the details of the study itself including the setting, participants, data sources and collection procedures, data analysis, the role of the researcher and researcher biases, and issues of trustworthiness and credibility. The analysis of case study research consists of offering a very detailed description of the case, its setting, events, and participants (Creswell, 1998); therefore, this chapter also includes a context for situating the research, which describes the preparation, planning, operation, and maintenance involved in creating this community of learners.

### *Summary of Pilot Project*

This research is informed by an earlier pilot study; therefore, a summary of that work is presented here to offer the reader a context of the work and a rationale for final project design choices. The pilot project, A Computer-Mediated Community of Learners, hereinafter referred to as CMCL, was conducted in the Fall semester of 2001. It was designed to create a field experience component to EDCI 4124 – Psychological Foundations of Education for Pre-Service Teachers through the development of an online learning community that included pre-service teachers and practicing teachers communicating electronically and using problem-based learning via CD-ROM based case analysis to study and learn about teaching.

The primary purpose of this pilot work was to test the methodology as well as the implementation possibilities of the case studies and forms of electronic communication. Specifically, in-class tasks and assignments related to the case studies were piloted and refined for use in this research according to feedback received from the students. Feedback from both students and teachers attained during the interview process was used to design the participation procedures in communication, such as the number of case studies and chats, the length of chat times, the role of the threaded communication, and the use of email. Also, the necessity of observations was revealed during the data analysis of the pilot work. Observations were not conducted as part of the pilot project, but became an important component of the current research design. Data sources from the pilot work included transcripts of all chat room and threaded communication, email correspondence, field notes, and student tasks and reflections, as well as exit interviews with the teachers and a student focus group.

Results indicated that the case studies did help the students make sense of the concepts and theories being studied in class, while the communication with the teachers helped the students see the practical applications of the information they were learning. Thus, it was the complete triad of class lecture, case studies, and communication with the teachers that brought the learning cycle full circle. A more detailed description of the findings from this research can be found in Appendix A, which is the written report of the CMCL research project.

### *Research Design*

The research design chosen for this study is the case study approach. Researchers have offered varying definitions of the case study. Yin (1994) defines case study as a process. Wolcott (1992) views case study as an end-product of the research process. Stake (1995) bases his definition of case study on the unit of analysis, what is being studied. For the purpose of this research, Stake's depiction of a case study will frame this design.

According to Stake (1995), a case is an integrated system and a case study is the study of that system. It is "the study of the particularity and complexity of a single case, coming to understand its activity within important circumstances" (Stake, p. xi). Further, a case study design is used when the goal is to understand the meaning of the situation for those involved. According to Merriam (1998), the interest involved in the case study is in the discovery of the process and the context. In this instance, this is a case of teachers learning from, and with, other teachers in a computer-mediated learning community. In this research, the unit of analysis is the course and all participants involved – the pre-service teachers, practicing teachers, and university professors.

Specifically, the case study method is appropriate for several reasons. First, this study focused on a bounded system (Smith, 1978) and one that is integrated (Stake, 1995). The participants, the course, the time frame, all aspects of the phenomena under study are what Merriam (1998) calls "intrinsically bounded" (p 27) due to the fact that there is a limit to both the time period of the course, as well as a limit to possible observations of the participants within that course.

Furthermore, case study design is particularly useful for this research due to its focus on understanding the process involved in this case. Merriam (1998) offers three characteristics of qualitative case studies that help to uncover the process. Those characteristics are that case studies are: 1) particularistic – they focus on a particular situation or phenomenon, in this case, the particular is the course and all of its participants; 2) descriptive – the product of case study research is a rich description of the phenomenon under study; 3) heuristic – the case study provides an exemplar that attempts to illuminate the reader's understanding of the phenomenon under study.

### *Setting*

This study was conducted in a Foundations of Educational Psychology for Pre-

Service Teachers course in a large research-intensive university in the Southeastern United States. The class met twice a week for an hour and fifteen minutes each session from late August to mid-December, 2002.

Foundations of Educational Psychology for Pre-service Teachers is a required course in this university's teacher certification programs and is offered through the Educational Psychology Program every semester, including summers. Enrollment is usually at full capacity with at least 35 students in each of the eight sections offered across the calendar year, meaning that approximately 250 pre-service teachers are enrolled in this course each year. Most of these students are just beginning their main coursework in their teacher preparation programs.

Traditionally, this course had been centered on the teaching of psychological theories for education, but had little opportunity for the pre-service teachers to observe and participate in the practical classroom applications of the theories studied. Professors of this course had wanted for some time to be able to provide a connected field experience for their students. However, with such high enrollment in the course along with the number of student teachers already in the schools and with the already established field experiences in place, there were few placements available for a field experience related to this course. An alternative to a traditional field experience seemed not only an approach worthy of testing, but also seemed to be a way to possibly enhance the content and curriculum of the course itself. This research project sought to provide one such experience.

#### *Participants*

Eight classroom teachers communicated electronically with 27 pre-service teachers from the educational psychology course, as well as with eight faculty members from this university. Each teacher and professor was offered a \$150 honorarium for his or her participation in this research. All teachers and seven of the eight professors accepted the honorarium. An additional, but very important, participant was the technical support person. She was also paid for her work with this research.

#### *Pre-service Teachers*

The sample of pre-service teachers was based solely on those students who enrolled in the educational psychology course. A faculty member in the Educational Psychology program implemented the CD-ROM case studies and electronic communications in his

section of the course in order for this research to be conducted. The course was taught in the Fall semester, 2002, on Tuesdays and Thursdays from 12:30-1:45. Thus, the students enrolling in that section of the course were asked to become participants in this research. Twenty-seven students were enrolled in the course and all agreed to participate in the study. However, one of these students stopped attending class in early October and did not participate in the activities with the teachers and professors or with the activities in the class, so any datum pertaining to that student is not included in this chapter or in the findings. He did not officially drop the class; rather, he merely ceased participating.

Eleven of the students were from the Early Childhood Education option of the Human Development program and the remaining sixteen students were enrolled in programs leading to licensure at the secondary level. Their content areas spanned a variety of fields including English, Agricultural Education, Math, Social Studies, Spanish, and Vocational and Industrial Education. There were 19 juniors, three seniors, two graduate students just beginning work toward their master's degree, and two sophomores taking the class with special permission.

Most of the students had no prior teaching experience. However, thirteen of the students mentioned having some various types of experiences in working with children. Four students had worked in a daycare setting, two had taught swimming lessons, two had taught Sunday School, one had worked as an instructional aide, and four had worked in summer day camps. Two of the students had multiple experiences that included actual teaching in a public school environment. One of them had worked as a substitute teacher, had tutored in an after-school program, and had taught summer school for ninth graders. The other student had worked as a long-term substitute in two different schools. The remaining 11 students said they had no experience in teaching or in working with children or youth.

Only one of the students had taken a prior educational psychology course. She had taken another educational psychology course that is for students who are not enrolled in a teacher certification program. The only psychology background most of the students mentioned having was the Introduction to Psychology course that is part of their general course requirements. However, one student had taken four psychology courses in addition to the introductory course.

### *Practicing Teachers*

The sample of practicing teachers was purposeful. Two of the teachers were former colleagues with whom I used to teach. Both of these teachers participated in the pilot project and continued their participation into this phase of the research. One of the members of my dissertation committee is the coordinator of the mentoring program for a local school system and was able to provide me with the names of three teachers she felt would be good candidates for participation. Two of them agreed to participate. Both of them are currently in practice, were participants in the pilot project, and both continued with this research study.

The remaining four teachers were new to this project. One of the teachers is currently a doctoral student who just recently left the classroom to pursue her graduate degree, another was not a practicing teacher during the duration of this research, as she is working with other teachers toward helping them achieve National Board Certification, and finally, the remaining two teachers are currently in practice and just received National Board Certification.

The teachers who participated in this project were from various areas within the state and one was from a neighboring state. This purposeful inclusion of practicing teachers from across two states was to provide the pre-service teachers access to teachers and classrooms from diverse areas with diverse perspectives. These teachers' teaching experiences span a range from kindergarten through twelfth grade, as well as include experience in specialty areas such as art, gifted instruction, technology, arts integration, and school leadership. Four of the teachers are Nationally Board Certified and one is in the process of earning that certification. Several have earned a variety of teaching awards and others are working toward advanced degrees. They teach in rural settings, inner cities, and in small towns. Years of teaching experience range from five years to more than 25 years. Table 3.1 on the following page provides an individual look at each of the teacher participants. One of the teachers participated in chats only and was not able to participate in the debrief, the interview, or survey so this teacher will be represented only in the data pertaining to the chat sessions.

TABLE 3.1

Teachers

Name	Number of Years Experience	Teaching Experiences	Teaching Locations	Honors/Awards	Miscellaneous
Natalie Gerringer	11	Middle school English and Math; High school English; fourth grade	Virginia and Washington state; experience in suburban areas	Nationally Board Certified	Strengths are working with special education students, specifically emotionally disturbed students; Co-developer of a National Board Certification Candidate Support Program for her state; Currently serving as the National Board Certified Teacher in Residence at a State University
Rhonda Hannah	27	Elementary and Middle school Art	Virginia; experience in small town	Nationally Board Certified; Teacher of the Year	Currently is mentoring three teachers through National Board Certification
Janice King	14	Fifth and Sixth grades; Technology consultant	North Carolina and Virginia; experience in rural and inner-city	Teacher of the Year; working towards Master's degree	Strengths include working with special education students and using technology in the classroom
Mary Beth Olson	23	Second, third, fourth, and sixth grades; Seventh grade Science and Social Studies; Coordinator of the Gifted/Talented program	Virginia; experience in small town	Nationally Board Certified	Experience in teaching multi-grade classrooms
Nancy Smith	21	First and Fifth grade	Virginia; experience in small town	Excellence in Education Award; Who's Who Among American Teachers	
Shawna Thomas	27	Second and Third grade	North Carolina; experience in a rural area	Nationally Board Certified	Certified teacher of the gifted; Currently mentoring other teachers online as they work toward national certification
Gail Walters	23	Fourth and Fifth grade	Virginia; experience in a small town	Working toward National Board Certification	Worked one year as an assistant principal
Gloria Williams	5	Middle school English, Social Studies, Life Science, and Physical Science	Virginia; experience in an urban area	Working toward PhD	Currently is supervising student teachers

### *University Professors*

The sample of university professors was also purposeful. I chose to ask eight professors from the Department of Teaching and Learning and/or from the Department of Educational Leadership and Policy Studies who were both experienced in the use of technology and had expertise in the area of teaching. University professors were not a part of the pilot project so they were new participants in this project. However, five of the eight professors participated in chat sessions with pre-service teachers in the Spring 2002 semester in the educational psychology course I taught, so they had experience in the expected uses of electronic communication in the course by the time this study was implemented. One professor, Dr. Dawson, held a dual role as a participant in the chats and as professor of the educational psychology course.

I attempted to locate professors whom I felt would not only serve as additional excellent role models for the students, but who also had backgrounds and experiences that would augment and support the expertise of the practicing teachers. The university professors have a range of teaching experiences from a range of locations within the United States, England, Israel, Germany, and Mexico. Their years of experience at the university level range from three years to 18 years. Their areas of expertise include secondary math, secondary social studies, elementary education, English as a Second Language, special education, higher education, and adolescent development. The university professors brought very unique perspectives and a wealth of diversity and background experiences to share in this project. The role they played in this learning community was crucial. They served as the bridge between the two worlds of school and university. They bridged the communication between the students and the teachers to help the students make connections from theory to practice and from university to school. Table 3.2 on the following page provides an individual look at each of the professor participants.

TABLE 3.2

Professors

Name	Years Experience Teaching in K-12	Prior K-12 Teaching Experiences	K-12 Teaching Locations	Years Experience Teaching in University	University Teaching Experiences	Area of Expertise
Christine Allen	7	Vocational Home Economics	Florida	21	Vocational and Technical Education; Special Education Teacher Preparation	Special Education; Adaptive Instruction; Transition Programming; Diversity in Education and Work
Sally Brothers	1	Eighth and ninth grade long-term substitute	Florida	15	Educational Psychology	Developmental Psychology; Adolescent Development; Dynamical Systems Theory
Victoria Ceron	2	Fifth grade for two years and one year as a curriculum specialist	Arizona, Mexico	4	Educational Research; Methods courses for pre-service teachers	Qualitative Research; Bilingual Education; Immigrant Studies
Tony Dawson	6	Computer Science to 4 <sup>th</sup> – 12 <sup>th</sup> graders; Seventh, eighth, and ninth grade Math	Maryland	8	Educational Psychology	Cognitive Learning Theory; Information Processing; and Applications of technology to instruction
Donald Newbern	4	High school and middle school Social Studies; GED Prep Course	New York City Upstate NY	4	Social Studies Education	History and Social Sciences
Angela Porter	12	Elementary; ESL; multi-age classes	England Germany Israel Florida	8	Elementary Education courses and supervises student teachers	Literacy
Miriam Quidley	7	Elementary	South Carolina Virginia	17	Elementary Education courses; Reading and Literacy courses	Literacy Instruction and Elementary Education
Jerry Wilson	3	9 <sup>th</sup> -12 <sup>th</sup> grade Math	North Carolina	9	Mathematics Education	Math Methods

### *Technical Support Person*

A technical support person was hired with the grant money that funded this research. The person asked to fill this role is a graduate student in Instructional Technology. She has worked as a computer support technician both professionally and in her current role as graduate assistant in the House Calls <sup>1</sup> program. She was available to handle any of the logistical needs pertinent to the technical component of this study and remained available throughout the duration of the semester to handle any technical difficulties the students, teachers, or professors may have had that I could not address. Additionally, she served as a critical component in helping me uncover the benefits and challenges of operating and maintaining a computer-mediated community of learners.

A diversity of experiences and interests were represented in this community. My goal was to be able to link a student with an expert in his or her subject and/or grade level of interest. This was attainable in all but two of the content areas in which students were majoring. We did not have a teacher or professor who had taught in the area of Agricultural Education or in Industrial and Vocational Education. Although these students did not have the opportunity to talk with an expert in their particular content area, they did have access to teachers and professors who had taught at the secondary level.

### *Informed Consent Procedures*

Request for expedited review was made to the university Internal Review Board for this study. Upon acknowledgment from the university that this research may be conducted, the informed consent process began. All participants, pre-service teachers, practicing teachers, university professors, and the technology support person, were asked to sign an informed consent form indicating their willingness to participate in the study. The informed consent forms were different for each participant group, specifically outlining anonymity and confidentiality guidelines, as well as any potential risks involved for that particular group. See Appendix B for the Institutional Review Board Protocol and Informed Consent Forms. Once permission from the participants had been granted, data collection and analysis began.

### *Providing the Context for the Research*

The next sections in this chapter offer a detailed description of the procedures

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<sup>1</sup> House Calls is a program at Virginia Tech in which graduate students in Instructional Technology provide technology support for faculty and staff in the Department of Teaching and Learning.

involved in creating and maintaining the online community throughout the semester and of the activities in which the participants engaged. They offer a context for the research by describing the planning, preparation, and maintenance that were involved in building this community. These descriptive contexts are needed in order to provide the reader a setting with which to understand this research and its findings. According to Stake (1995), case study research attempts to develop “vicarious experiences” for the reader to give them a sense of “being there” (p. 63). Stake also suggests that there must be a balance between the uniqueness and the ordinariness of the place. With these suggestions and cautions in mind, an introduction to the community and its context is offered for the reader.

### *Creating an Online Learning Community*

With a need existing for an alternate field experience within the Educational Psychology course, the opportunity had made itself available to try out approaches that technological advances of the last few decades have made possible. As advances in electronic communications have been made, the use of online communities of learning has become more and more popular. My early research into the literature of this burgeoning field revealed very limited use of this form of communication within teacher education programs. I began considering this as a possibility for my dissertation research as I read the literature during a Research in Teacher Education course in the summer of 2000.

With this seed of an idea implanted in my thoughts that summer, I continued to develop it over the course of the next year, doing literature reviews and proposal ideas for some of my graduate courses. When I attended a professional conference in 2001, the annual meeting of the American Educational Research Association, I met another doctoral student who was conducting research in a similar area. His work involved the use of CD-ROM based video case studies. These videos were a good fit with the content of the educational psychology course, so we connected with the developer of the CDs and began field-testing them in the educational psychology course in the 2001-2002 academic year.

I completed my preliminary exams in early August 2001, and immediately engaged in the pilot work that same semester. After the pilot work was complete in the fall of 2001, the form of the final project was beginning to take shape. Lessons learned from the pilot and suggestions from the participants were incorporated into the plans for the research. I chose to wait until the fall of 2002 to conduct the research instead of jumping right into it in the spring

of 2002, immediately following the pilot. This was due to one of the biggest lessons learned – do not underestimate the need for a well thought out plan for your study and the necessity of carefully organized preparations for its implementation.

With this lesson foremost in my thoughts, I began the preparation for building the community in Spring 2002. During discussions with my advisor concerning the preparation of my prospectus during the Spring of 2002, it was decided to add professors to the community in order to bring the two worlds of school and university together. It was also decided to pair a professor with a teacher to lead the chats, meaning that an equal number of teachers and professors would need to be willing to participate. Much to my happiness, I found willingness to participate at a premium.

During that spring semester, I contacted teachers and professors inviting them to participate in the study. I had located one additional teacher to add to the original four who were continuing on from the pilot study when three more teachers contacted my advisor stating they had heard about the pilot work and would love to participate, making a total of eight teachers in the study. I then asked eight professors from the Department of Teaching and Learning. Seven of them agreed on the spot to participate and one had to decline due to the workload she faced in preparing to go up for tenure. I then asked one professor from the Department of Educational Leadership and Policy Studies to participate. She also readily agreed so the groups of eight teachers and eight professors were formed.

I continued to teach with the CDs and to research the literature throughout that academic year. In June of 2002, I was ready to present the proposal for my dissertation, and it was approved for the research to be conducted that Fall, 2002. It was from these beginnings that the Computer-Mediated Community of Learners evolved.

#### *Setting up the Computer-Mediated Community of Learners*

As mentioned earlier, the pilot work informed the procedures and design of this research. One of the suggestions from the teachers in the pilot study was to have the teachers be more involved in the design, as well as the implementation, of the project. To this end, a meeting between my committee chair, the teachers, and myself took place prior to the beginning of the fall semester in order to plan this portion of the course collaboratively. All teachers and professors had agreed to participate in the study, so further contact, beyond this planning meeting, was through e-mail correspondence in order to finalize or clarify any

plans. A common meeting time could not be established with the professors so I met with each of them individually throughout the summer to discuss preparations for the project, to solicit ideas and feedback, and to train them in the use of the website component if they felt they needed that.

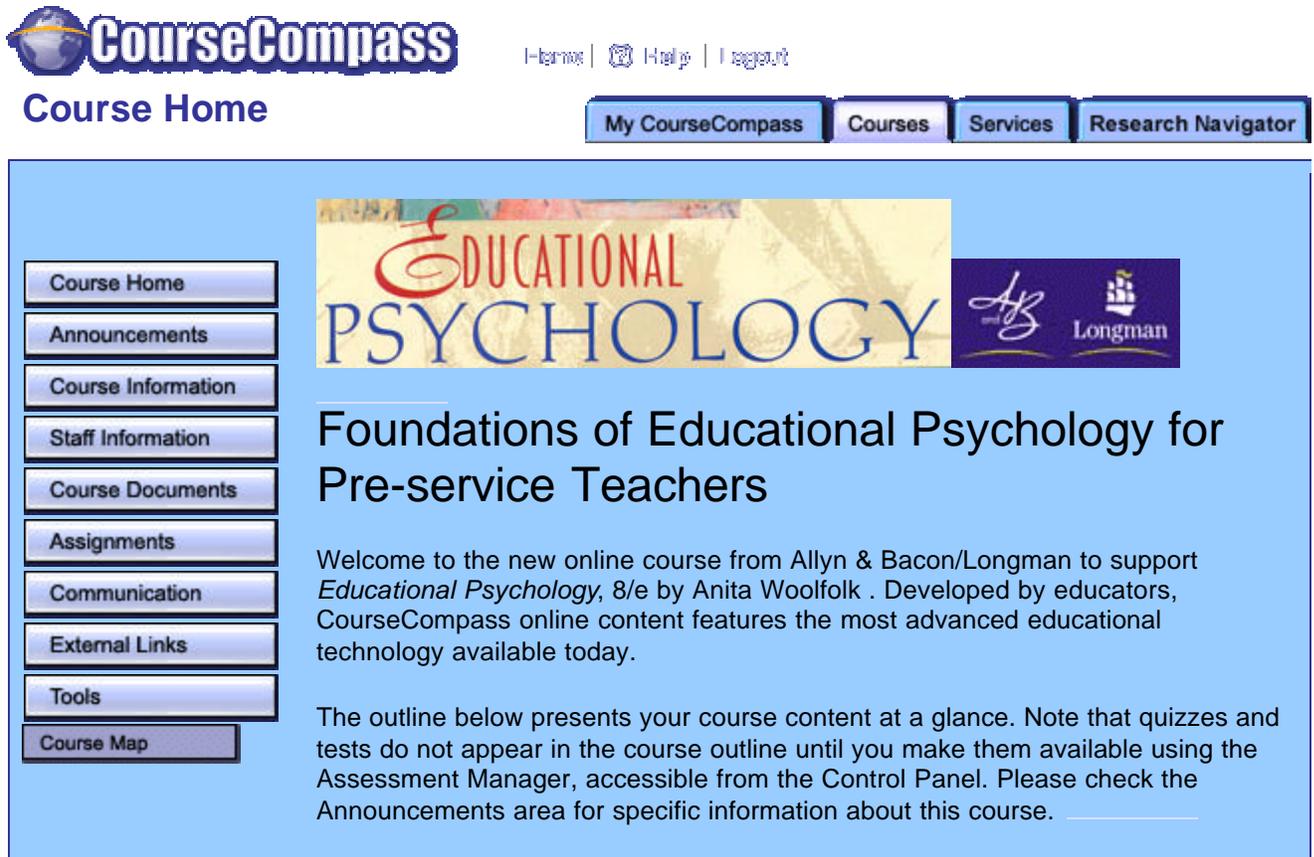
Four handouts were given to the teachers and professors at these meetings. These handouts can be found in Appendix C. One handout was directly from a chapter of my prospectus, which was still under construction, describing the setting, the participants, the documents that would be collected, IRB procedures, and expectations of participation from the participants. All of this information was discussed at the meetings, but the handout was given to them to read later for clarification, if needed.

I had met with the professor of the course before any of these meetings and determined the weeks in which the case study, chat, and threaded activities would take place so I could give a skeletal class schedule to the teachers and professors. A finalized syllabus would be given to them at a later date, but I wanted to get the dates of the activities in which they would be participating to them as soon as possible to help them with their own planning and scheduling.

Two other handouts were given to the teachers and professors at these meetings. Both were about the technical components of participation. One was a handout with specific directions for how to use the Course Compass website that we would be using in the fall for the communication activities. On the next page is a copy of the homepage of the Course Compass site that was used in this course. It is very similar in looks and function to the Black Board site available at most universities; however, this site accompanies the textbook used in the course and allows students access to particular resources for their course. Figure 3.1 on the following page is a graphic depiction of the website's homepage.

Figure 3.1

Course Compass Homepage



The other was a handout on chat room etiquette that would also be distributed later to the students enrolled in the course. It was given to the teachers so they would be aware of the participation patterns expected from the students, as well as to discuss some ideas that would make chatting as beneficial as possible and that would minimize the potential for disarray in the chat discussions. The idea for this explicit discussion about behavior expectations in a chat evolved directly from the pilot work. Simple things like asking the chatters to type “.....” at the end of a thought to let the other chatters know they are continuing with their statement and to therefore, hold off on new posts for a moment, helped to minimize the overlapping of conversations.

This initial contact with the teachers and professors was the last of the communication with them about this research until it was time to begin setting up the

community in the fall. I spent most of the summer planning and making preparations for the fall activities. This planning included meeting with the professor of the course on several occasions to begin building the assignments for each task, ordering access codes, setting up the site, and communicating with the teachers and professors before the start of the semester.

Another task during the summer involved ordering copies of the four CD case studies that had been chosen for use in the fall for the teachers and professors, as well as a set to be used in the classroom. They were ordered from Harris Video Cases ? based at Brigham Young University in Salt Lake City, Utah. These CD-ROM based video case studies are produced with the idea of promoting integration of theory and research. They are video ethnographies of teachers teaching their own classrooms. Underneath the video are tabs that provide literature-based comments, the teacher's reflections or thoughts about the lesson, and usually a principal or an educational researcher's thoughts. Clicking on the tabs provides the text to read the comments and clicking on a "speaker" button will open an audio recording of the comments. The CDs span teaching situations from elementary, to middle, to high school and feature teachers using a variety of teaching models. The CDs chosen for use in this research included *The Larry Beaudin Case* (Harris, 2000) focusing on instructional design and classroom management, *The Brenda Beyal Case* (Harris, 2000) focusing on information processing, *The Derek Rentz Case* (Harris, 2000) focusing on motivation and information processing, and *The Assessment Literacy Case* focusing on assessment (Pinnegar, 2002). These CDs were mailed to the teachers who were not local with return postage included, and I hand delivered CDs to the schools of those teachers who were in town and to the professors at the university.

The pre-service teachers were informed of the course requirements, as well as of the research being conducted in their course, on the first day of class. The pre-service teachers were required to participate in these activities as required components of their course. However, they were not required to allow their work or comments to be used for research purposes. In this way, they had the option of whether to participate in this course or in the research itself.

During the second week of classes, once enrollment had been ensured, students in the course were registered for access to the Course Compass website. As stated previously, a technical support person was hired to take care of the technical issues of getting this learning

community operational. Students were registered for the site and student home pages were created with their picture and a brief introduction of themselves posted there. Although this site was very user friendly, a few of them needed the support of the technical support person to accomplish this. The technical support person made her services available throughout the duration of the semester, although the bulk of the work occurred on the front end in getting everyone registered and operational.

All work related to having the website itself operational and to having the teachers and professors ready to participate was completed by mid-August before Fall classes began. The work related to preparing the students for participation, including registering them for the website and providing them with the expectations for participation and directions for how to navigate the site, occurred the first week of classes in August and into the first week of September. On the following page, Table 3.3 below presents a timeline of preparatory activities in which I engaged in preparing and setting up the community.

**TABLE 3.3**  
**Preparing and Setting Up the Computer-Mediated Community of Learners**

July 2002	August 2002	September 2002
<p>IRB forms submitted</p> <p>Ordered access codes for website, CDs, and appropriate version of book with website accessibility</p> <p>Established website for course</p> <p>Registered teachers and professors to use site</p> <p>Access information, including log on and password information, as well as directions for how to access the site and its components were sent to the teachers and professors</p> <p>Met with professor of course on a regular and continuing basis to make plans for the fall</p> <p>Requested information from teachers and professors about their teaching experiences and also requested a picture of them. This information would be used in creating their</p>	<p>Made decisions on the teacher and professor "pairs" to lead the chats.</p> <p>Sent a cyber "introduction" to each teacher and professor introducing them to their partners. These introductions were sent via email. Appendix F includes an example of one of these introductions.</p> <p>Sent emails to teachers and professors sharing with them the finalized plans for the Fall. This email can be found in Appendix G.</p> <p>Continued meeting regularly with the professor of the course; Syllabus and Case Assignment handout can be found in Appendix H.</p> <p>Prepared the in-class tasks, KWLs and Reflection sheets to be used in the course</p> <p>Met with my advisor to inform her of progress made in the preparations</p>	<p>Technical support person registered pre-service teachers for website</p> <p>Technical support person came to class to introduce students to the site and to help them build their homepages</p>

<p>homepages</p> <p>Created teachers' and professors' homepages. A sample homepage can be found in Appendix D.</p> <p>Sent information to each teacher and professor about their homepage – how to access it and edit it and how to access other's homepages. These directions can be found in Appendix E.</p> <p>Met with technical support person about her responsibilities for the Fall</p>	<p>Finalized paperwork for teachers and professors to receive an honorarium.</p> <p>IRB approval arrived; Teacher and professor consent forms signed</p> <p>CDs arrived; delivered to teachers and professors</p> <p>First class session; introduction to class activities; consent forms signed; pictures taken for homepage</p>	
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With these preparations and months of organization and planning completed, the physical and logistical components of the online learning community had been established. The site was operational, members were registered and had been introduced to one another, homepages were established, and directions for participation had been given. The foundation had been set for the research to begin. Though these early preparations were the bulk of the work, maintaining the functionality of the community and its members' participation was an on-going activity.

*Operating and Maintaining an Online Learning Community*

Four cycles of 'Case Study – Chats – Threaded Discussions' occurred across the semester of the project. Each cycle occurred once a month from September through December. There were no threaded discussions during the last cycle. Preparation for the first cycle required the most planning and organization. After the first cycle, the participants were familiar with the procedures and were comfortable in their roles. First, the technicalities of scheduling chats across the semester are discussed. Then an explanation of how procedures for participation in the activities were explained and established during the first cycle of activities is offered. Once these procedures for participation had been explained and practiced in cycle one, they were used to guide the remainder of the cycles throughout the semester and very little further guidance from me was necessary.

*Scheduling the Chats*

Before the first chat sessions could be scheduled with the students, the pairs of teachers and professors had to get together with one another and determine a common time that would be convenient for both of them to lead a chat together. They did find some

common times and I put together a schedule of chats for the chat weeks based on the times chosen by the teachers and professors. All that had to be done for the remaining three schedules was to change a scheduled chat time if a conflict arose rather than scheduling each session from scratch each time. Only twice during the semester did a chat time have to be moved to another time during the week. There were times when one partner of a pair could not participate in a chat due to things like illness, being away at a conference, or unexpected circumstances that arose. In these instances, the other partner would lead the chat independently. This happened one time for each pair except one. There was one pair that could not find a common time to lead a chat together. In their circumstance, one partner led the first two chats and the other partner led the last two. This was not ideal given the purpose of wanting to pair a teacher and professor together, but it was all that was possible given their individual situations.

These chat schedules were always finalized with the teachers and professors the week before the students viewed a case study in class. This was due to the fact that the final chat schedule was taken into class when the students watched the case and was sent around the room for the students to sign up for their chosen chat. Since chats began on Mondays of chat weeks, the students had to sign up the week before. Four students were allowed to sign up in each chat. This small number of chatters kept the pace of the chat room comfortable. The chat schedule was then emailed back to the teachers and professors at the end of the case week, just before the chats were to begin the following week, with the names of the students who would be in their chats. This gave the teachers some time before the chats to look up their students' homepages if they desired. An example of one of these chat schedules can be found in Appendix I.

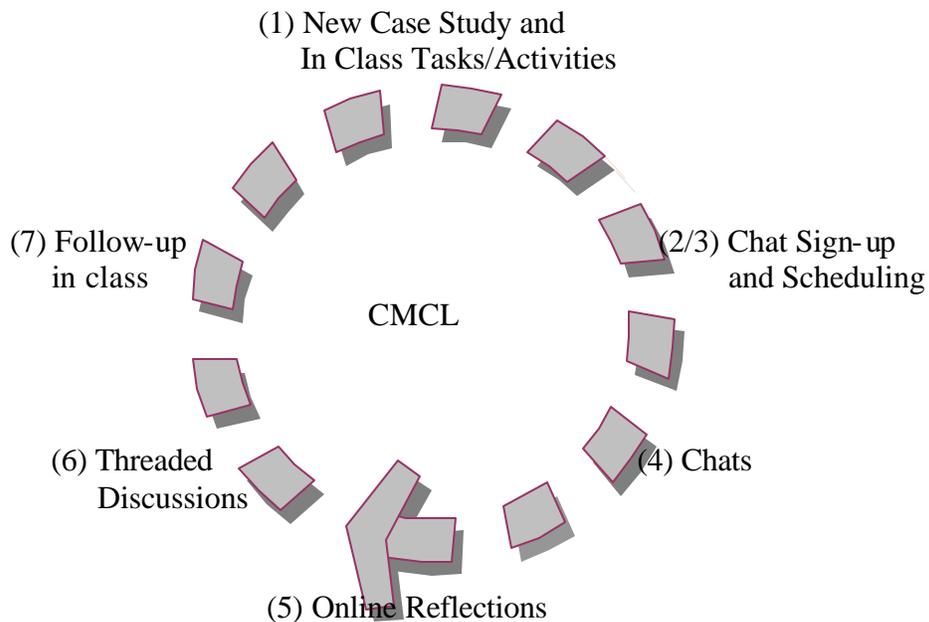
Scheduling of the chats was the only part of this stage of the research that really required any coordination efforts on my part. Once it was determined that the first chat times scheduled would work across the semester, my role fell to merely bringing a clean schedule in for the students to sign and emailing that back to the teachers and professors. However, the first cycle of activities did require a little preparation and explanation to get them under way. Again, once procedures for participation had been established and everyone had participated in the activities once, my guidance was much less necessary. Following is a description of events related to the cycle of activities that occurred four times across the semester.

### *The Cycle - Cases, Chats, and Threads*

The ongoing cycle of case study, chats, and threads across the semester occurred once in each of the four months of the fall semester (i.e., September through December), with no threaded discussion in the fourth cycle. Each cycle followed a similar pattern: 1) The pre-service teachers first viewed a video case study in class and did some in-class tasks related to the case. Teachers and professors also viewed these same CDs on their own time. The four different CDs used in this research were chosen to highlight instructional design, information processing, problem-based learning, and assessment techniques. 2) Also during this case study week, they signed up for their chat session. 3) After the students had signed up for a chat, I sent the schedule with the students' names on it back to the teachers and professors along with some general information about the context of the discussion the pre-service teachers had in class and the specific clips of the CD they had viewed. I sent this type of contextual information to the teachers and professors each time I sent them the chat sign-up sheet for each cycle in order to help them be prepared for their discussion with the students. Appendix J includes the email that was sent to the teachers and professors prior to the first chat. The only thing that was different about this first email back to the teachers and professors from the later ones is the information reminding them about the procedures involved in leading the chat. 4) The following week, the pre-service teachers met online in the chat rooms with the teachers and professors with whom they had chosen to chat with for that week. 5) The pre-service teachers completed an online reflection task about their chat session. 6) The pre-service teachers, teachers, and professors participated in a threaded discussion the week following the chat sessions. The forum for discussion in the threaded discussions always arose from either the conversations in the chat rooms or from the discussions in the classroom, providing continuity in the chain of events. 7) Activities concluded with an in-class follow-up discussion. Figure 3.2 on the following page depicts this cycle of activities.

Once the first cycle of these events had been completed, any coordination efforts required of me were minimal. The remainder of the semester was spent in attending class, writing field notes, sending reminders to the teachers and professors about upcoming activities, and in beginning some early analysis.

Figure 3.2  
*Cycle of CMCL Activities*



#### *Data Sources and Collection Procedures*

Data were collected throughout the course of the Fall, 2002 semester from August to December. Much of the data, mainly comprised of documents and observations, were collected as the course proceeded throughout the semester; however, some of the data, such as the interviews, were collected at the end of the semester. The procedure used for collecting the documents is described first since it was the most complex.

#### *Documents*

Documents collected include assignments the students completed for class, online reflections, and transcripts of chats and threaded discussions. Implementation of procedures used to generate the specific documents and the methods of collection of those documents were as follows.

*In-class assignments.* The students in the course viewed four CD-ROM case studies throughout the course of the semester, one a month from September to December, that aligned with the concepts and theories being discussed in class. During each case study session, the students completed a brief in-class assignment pertaining to the particular case

they were viewing. They were asked to complete a task asking them for their thoughts on what they viewed and asking them to pose questions they would like to ask about the particular case or any aspect of teaching that case may have high-lighted. This was done in the form of a KWL task, specifically asking the pre-service teachers: what do I *Know*, what do I *Want* to know, and what did I *Learn*.

*Online reflections.* After each chat session in which the students participated, they were asked to go to the course website and complete a reflection task about the chat. This task asked the students what they learned from talking with the teacher, as well as what questions or concerns they may be left with after the conversation. A sample of each reflection task is included in Appendix K.

*Transcripts of chat sessions and threaded discussion lists.* The electronic communication took two main forms – chats and threaded discussion lists. The Course Compass website that was used in this course supported both of these communication features. The site automatically saves and archives all communication. These archived communications generated documents to be analyzed.

Chat sessions occurred four times throughout the course of the semester. These chat sessions lasted approximately 45 minutes and occurred during the week after the case had been viewed and outside of class time. Each chat was led by one teacher and one professor. Teachers and professors chose a time that they are available to lead a chat. A sign-up sheet was generated with the teachers' chat times listed. These signup sheets were taken to the classroom so the students could sign up for the teacher/professor pair with whom they would like to chat during that week's chat sessions.

These weekly chat sessions occurred the week after the students had viewed the case studies in class. The teachers and professors had viewed these case studies as well, on their own, so they were aware of what the students had been exposed to and were thus able to communicate more effectively with the students. Topics for each chat were given to all the participants so there was a frame with which to begin the conversation. Again, those topics aligned with what the students were studying in class as well as with the case study they had just viewed.

Threaded discussion lists occurred throughout the semester as well. They were less structured than the chat sessions, but they were still a required component of the course.

These threaded discussions occurred the week following the first three chat sessions and focused on various educational topics the students, teachers, and professors were discussing. There were three topics for threaded discussions posted during the semester, one in each month of September, October, and November. The topics for discussions evolved naturally from the context of the course and from the most recent case study and chat. The professor of the course posted the forum for discussion based on the intersection of those contexts. Additionally, the threads were available to the participants to extend a chat discussion upon completion of that chat if the participants would like to continue the conversation that was begun, or if the participants had questions or comments related to the chat.

A second use of the threaded discussion list was for practicing teachers and university professors only. The pre-service teachers had access to this forum of the threads to read, but they were requested not to post to it. This forum was a networking and resource opportunity for the teachers. This component of the project stemmed from a suggestion from one of the teacher participants in the pilot project. It was suggested by a teacher in the pilot study that this might be a good opportunity for teachers with diverse backgrounds and experiences to share ideas and communicate with each other. This part of the threaded communication was entirely voluntary on the part of the teachers and was there for them if they chose to use it. As part of the planning procedures for this project, I had spoken with several of the teacher participants about this component and a fairly high level of interest appeared to exist, so it seemed that it might be a well-used resource for them and provide an excellent opportunity for the pre-service teachers to witness conversation among practicing teachers.

Finally, the teachers and professors had a copy of the syllabus and course requirements so they were aware of what the students were studying in class. This allowed the professors and teachers to share ideas, resources, and/or materials with the students, while also allowing the students access to others outside the realm of the university classroom with whom they may discuss classroom topics.

As stated previously, the collection of the documents as data in this course was the most involved. The final two data sources were just as critical to this research process, but involve less explanation. These are the observations and interviews.

#### *Observations*

I acted as participant-observer (Wolcott, 2001) in this course and took field notes on

my observations of the interactions and communications that occurred in the classroom. I attended each class and created field notes about each session. I sat in the back of the classroom, in the middle, where I would try to be as unobtrusive as possible, yet where I could easily see all of the students and the professor. I typed my field notes directly to my laptop computer, audio-tape recorded each session for later verification or clarification of the field notes, and took pictures of interesting activities and all case study sessions.

My field notes were written about the activities occurring in the classroom with an emphasis on the questions posed by the students. I focused on the pre-service teachers' questions as a partial component of studying the changing nature of the conversations across the semester, as well as to serve as a source of triangulation in what the pre-service teachers were learning. This was important to the research, as I believe it is not possible to accurately and completely describe classroom dynamics solely by interviewing the population within the classroom. First-hand observations were necessary to provide a rich description of the classroom activities and discourse.

### *Interviews*

Forty-two semi-structured interviews (Seidman, 1998) lasting approximately 45 minutes to an hour were conducted with each teacher, professor, and student, as well as with the technical support person at the end of the semester in order to learn what the experiences had been like for them during the semester, what they learned, what was valuable or less valuable, and any suggestions for improvement they might have wanted to share. These interviews were conducted with each participant except for one teacher and the one student who had ceased attending classes. Appendix L includes the interview guides that were used with the teachers, professors, students, and the technical support person.

Throughout the semester, an additional fifteen shorter semi-structured interviews were conducted with each teacher and professor immediately after they had led a chat, or as soon thereafter as possible. These interviews, or debriefs, were conducted in order to understand the processes the teachers and professors were using to talk with the pre-service teachers and to help them learn about teaching. The debriefs were staggered across the four chat sessions so that I talked with two teachers and two professors after each chat session so that after four sessions, I had spoken with all eight teachers and all eight professors. However, I was unable to conduct a debrief with one of the teachers, but did debrief the other

seven teachers and all eight professors. I always debriefed teachers and professors that were paired with each other during the same week, though they were conducted individually, so as to get both of their perspectives on the same chat. Most of these debriefs were conducted by telephone and all were recorded.

### *Surveys*

In addition, teachers and professors were asked to complete a very brief online questionnaire at midterm in order to ask them for any feedback, suggestions, or concerns they may have had. These questionnaires were collected from all but one of the teacher participants, the same teacher who I was unable to debrief or interview, and all of the professor participants. Since students provided feedback throughout the course of the semester in class and in response to direct communication from the instructor, they were not asked to complete a midterm questionnaire; however, they did complete a brief survey during the interview process in which they shared their views about the course, the activities involved, and what they found helpful or constraining. Appendix M includes the survey completed by the teachers and professors, as well as the survey that was completed by the students.

### *Data Analysis and Management*

Analysis was focused on five areas of the data that aligned with the research questions: a) the nature of the on-line conversations and how they unfolded over time within a session and across a semester, b) what each participant group learned from communicating with the other participant groups, c) how reflection was supported and/or constrained in a computer-mediated learning environment, d) what the participants reported as the benefits and challenges of computer-mediated communication in this environment, and; e) what the benefits and difficulties were in creating and maintaining a computer-mediated community of learners. Several layers of analyses were used on the data to provide another form of triangulation and to help ensure accurate interpretation of the results.

### *Methods of Analysis*

As was noted in the review of the literature, analysis on the content of chat room discussions has been largely absent. Therefore, this study examined the content of the chat room discussions, as well as the processes in which the participants engaged as they chatted about teaching. This was done in order to examine not only what was learned within this

community, but also to understand the social nature of the learning that occurred. The following methods of analyses were used to accomplish this.

*Content analysis.* According to Silverman, “Content analysis involves establishing categories and then counting the number of instances when those categories are used”(p. 122). This approach was used on the chat transcripts as well as the interviews. Early categories were based on answering the five research questions involved in this research. While development of these categories can be a helpful organizational tool in conducting the analysis, it is important to allow unexpected patterns in the data to be represented by developing new categories as they appear in the data. This was accomplished by further levels of analysis, such as the constant-comparative method.

*Constant-comparative method.* First, a combination of the template organizing approach (Crabtree & Miller, 1999; Miles & Huberman, 1994) with the constant comparative method (Glaser & Strauss, 1967; Merriam, 1998) was used to analyze all interviews and to locate themes in the overall data patterns. The template approach “immerses the researcher in the often massive and confusing jungle of text, with the set purpose of identifying ‘chunks’ of text so as to facilitate future data retrieval and analysis” (p 166). The template is constructed by determining categories to search for in the data that align with the purpose of answering the research questions. After the template is constructed, the constant comparative method is used to determine patterns in the data. According to Merriam, the “constant comparative method involves comparing one segment of data with another to determine similarities and differences. Data are grouped together on a similar dimension” (p. 18). These dimensions are grouped together and are given a name so that they become a category. The objective then becomes to locate patterns in the data and arrange them in relationship to each other.

*Quantitative analysis.* The threaded discussions were analyzed using a quantitative component in this aspect of the study. The students’ comments in the threads became increasingly more reflective in nature throughout the semester. Therefore, the three threaded discussions were analyzed according to the Developmental Model of Reflection as a Cognitive Outcome Scale (Crotty, 2001). This scale was designed for measuring the level of reflective comments made by teachers from pre-service through expert. It is based in the work of Bloom (1956) and uses a taxonomy scale to measure reflective comments. This

scale can be found in Appendix N.

Two raters were identified who were willing to rate the threaded discussion posts according to this scale. Both of these raters are experienced teachers. One is currently a practicing teacher and the other is a professor of Educational Psychology. They have a combined 30 years of teaching experience. These raters were asked to rate the threads according to the reflection scale by assigning each post to the threaded discussion a number from one to six, which represented that student's reflection score. They were given the scale and an example of sample comments from the threads that would indicate each level. After training in the use of the scale, the raters rated each threaded comment posted by the students during the three threaded discussion sessions. They rated these threads with an established inter-rater reliability of .908. These reflection scores were entered into SPSS and an Analysis of Variance of Within-Subjects Effects was used to assess for significance along with the Bonferroni test to ensure accurate interpretation of the significance of the results.

These varying layers of analysis allowed for confidence in the triangulation of the data. For example, in the student interviews, the students discussed the threads as providing them an opportunity to think about and synthesize all they had just learned from class, from the case, and from the teachers. These statements are then corroborated by the findings of the analysis on the reflective levels of the threaded comments. Furthermore, chat room transcripts analyzed with content analysis provided support for the students' assertions on what they learned, as well as evidence of the process the teachers and professors stated they were engaged in as they chatted with the students. Further description of the trustworthiness and credibility of this research are discussed later in this chapter.

#### *Data Management Strategies*

This research generated a very large volume of data. By the end of the semester, I had accumulated nearly 2,000 pages of data including 42 interviews, 15 debriefs, transcripts from 29 chat sessions, 158 posts across the three threaded discussions, 15 teacher/professor surveys, 26 students surveys, 89 KWL tasks, 80 chat reflection sheets, field notes from each class session, researcher's journal, and email communications. This section discusses the methods I used to manage this data during collection and analysis procedures.

At the beginning of the semester, each data source I knew I would be collecting was assigned a color. Interview and debrief transcripts were assigned to be kept in blue folders,

reflection sheets were to be kept in purple folders, threaded discussion transcripts and chat transcripts were assigned to yellow folders, and in-class tasks were to be kept in maroon folders. The surveys that would be collected were to be kept in a standard beige folder.

Each data source that was collected throughout the semester was printed and a hard copy was filed into a folder according to the developed color-coded scheme. Electronic files were also created and each transcript was stored electronically as well, using the same coding conventions as the hard copy, with the exception of the color-coding.

Further management was required for each specific data source. Next, each data source is discussed with regard to the particular management strategies used with the data.

*Debrief and interview transcripts.* Debriefs were collected periodically throughout the semester while interviews were all done within the last two weeks of the semester. Immediately after I conducted each interview and debrief, I recorded any thoughts, ideas, or concerns that arose during the discussion in my researcher's journal.

All debriefs and interviews were recorded and transcribed verbatim as soon after they had occurred as possible. I did all of my own transcription, which allowed me to be totally immersed in the data and aided the analytic process. I kept a notepad by my computer as I transcribed so I could jot down analytic memos during the transcription. Dates and times of the debrief interviews were noted at the top of the transcript, page and line numbering was used for each transcript, and a large right margin was left available for later coding and analysis.

In order to file each transcript in an orderly fashion and to aid later retrieval of the data, each teacher and professor pair was assigned a number from one through eight. Teacher debrief and interview transcripts were indicated by including the letter "a" with the number, while professor transcripts were indicated by including the letter "b." A letter of D or I in front of the number indicated whether the transcript was a debrief or an interview. So, for example, a transcript from a teacher interview would be coded as I-2-a, while an interview of a professor would be indicated as I-4-b. D-2-a would indicate a debrief of the teacher from the teacher/professor pair number 2.

*Chat and threaded discussion transcripts.* All chat sessions and threaded discussions were automatically archived on the website for later retrieval, but I also printed out the transcript from each session immediately after its conclusion before I exited the site in case

some technical difficulty might cause loss of the data. Chat transcripts were printed immediately following a chat session, while threaded discussion sessions were printed out at the end of the week in which they occurred.

Additionally, each chat and threaded discussion transcript from the website was converted into a Microsoft Word document and filed electronically. This allowed me to edit each transcript by removing the participants' real names and converting them to their pseudonyms. Further, these chat documents were coded at the top of the transcript with the number of the teacher/professor pair leading the chat and the date and time of the chat session. Each page was numbered, line numbering was used, and a large right-hand margin was left available for later coding and analysis.

Threaded discussion transcripts were also converted to Word documents. Real names were replaced with pseudonyms, a session number of one through three that was assigned to each discussion to indicate the first, second, and third threaded discussions as well as the dates of the threaded discussion were placed at the top of the first page of the transcript. For example, the first threaded discussion was coded as 1-9/23-27. The website assigned the date and time to each post as it was made so further coding of date and time was not needed beyond this. Each page was numbered and a large right-hand margin was left available for later coding and analysis. Line numbering was not used on the thread transcripts because the breakdown into separate posts from each student allowed easy retrieval.

*Reflection sheets and in-class tasks.* Each student was assigned a number from one through 27. Each assignment or reflection task I collected was labeled with the student number and a letter of R indicating a reflection task or a T indicating an in-class task. In-class tasks and reflection sheets were kept in separate folders. The reflection tasks were completed online so an electronic copy was available of them as well. The in-class tasks, as well as the student surveys to be discussed next, were the only data sources that were not available to me electronically.

*Surveys.* Teacher and professor surveys were conducted via email, which allowed these surveys to be filed both electronically and as hard copies. The participants' names were removed and replaced with their pseudonyms. These surveys were very brief so page and line numbering was not needed. Student surveys were conducted at the end of the semester at the interview so no electronic file of these surveys was created. Student names

were replaced with their student number. These surveys were filed as a hard copy into the appropriate folders.

*Field notes, researcher's journal and e-mail communications.* Field notes were generated during my observations in the classroom. These field notes were transcribed directly into my laptop. As soon after the observation as possible, I sat back down at my laptop and wrote my thoughts, reflections, and/or concerns into the field notes and indicated them as such by placing them in italics. The field notes were given page and line numbers and a wide right margin for later use during analysis. Photos that were taken at these observations were filed electronically and were printed as well.

I tried to write in my researcher's journal every day, but this was not always possible. I did write in it at least once each week and always after a major component of the research had occurred, such as a case study or chat session, etc. I have also continued to use it during the analysis phase of this research as a way to organize my thoughts and work through some of the more confusing or difficult parts of the analysis.

I have kept an electronic file and a hard copy of all my communication with the teachers and professors during this research. Although e-mail communication is not a part of the formal analysis of the research, keeping this communication, looking through it and reflecting on it has enabled me to see better ways of communicating with the teachers and professors in future iterations of this research. This has helped me to create a draft booklet of information for teachers and professors to provide to them at the onset rather than to have to continue to send single e-mails with individual pieces of information. See Appendix O. Having all of the necessary information in one source would be much more convenient for them and would alleviate the continual onslaught of information into their e-mail's in boxes.

*Data management during analysis.* Data management during the analysis phase of this research continued by using another invented color-coding scheme. Categories of information to retrieve had been created to specifically answer the research questions. Each of these categories was given a color. I went through each data source and highlighted statements that addressed each of these categories with the appropriate colored highlighter pen. Once each of the categories had been coded across all data sources, aggregated documents were created for each category. This was done by labeling the top of the document with the particular category of information this aggregated document addressed.

Then, because I had almost every data source available to me electronically, I was able to go to the original document and copy and paste the appropriate statement from each data source into the aggregated document. If an electronic copy of the data source was not available, I typed the statement into the aggregated document. Each of the statements placed into the aggregated document was coded with the letter of the data source from which it came, the number assigned to the participant, the page number it was located on and the line numbers where it could be found. For example, a statement from a teacher's interview concerning teachers' learning placed into the aggregated data of that category would be coded as I-2a-12(57-63).

After all of the data sources had been worked through and aggregated into categories of information, management procedures gave way to the deeper analyses of the data. The constant-comparative method was used on the aggregated data to determine similarities and/or differences among the data. The making of comparisons is fundamental to the constant-comparative method and this occurred throughout the data management procedures as well as the analysis. "This involves comparing categories (abstract concepts) to similar or different concepts to bring out possible properties or dimensions when these are not evident to the analyst" (Strauss & Corbin, 1998, p. 134). Data are broken down into units and are compared to each other for similarities or differences. This begins with a line-by-line analysis of the data. Concepts were drawn from the data that represented each of the categories that had been developed in order to answer the research questions. Additionally, as this analysis continued, new categories of information were determined in the data to add to the already existing categories. Units of data that were deemed to be similar to other units of data were grouped into the same category. I then saw that some of these categories were conceptually very similar to other categories. In this way, three domains were determined within the data and the previous categories of information became sub-categories within those three larger domains.

Beyond the constant-comparative method, further analyses were conducted, such as content analysis of the chats and the measurement of the reflectivity of the students' threaded discussions. These layering levels of analysis allowed me to confirm or disconfirm the findings from other levels of analyses, thereby providing an analytic form of triangulation.

### *Trustworthiness and Credibility*

The purpose of this research was to investigate the learning experiences of the participants, as well as the design and implementation issues of computer-mediated communication, and to share those findings in an honest and ethical manner. The notions of trustworthiness and credibility in qualitative research replace the notions of reliability and validity from quantitative methodologies (Kincheloe & McLaren, 1998). Several methods were used to ensure that this research is both trustworthy and credible.

First, triangulation was used in order to ensure accurate interpretation. To this end, multiple methods of data collection were used including student assignments, reflections, transcripts of chats and threaded discussions, surveys, observations and field notes, and transcriptions from teacher, professor, and student interviews. Additionally, these data were analyzed using multiple layers of analyses to ensure accurate interpretation.

Second, member checking was used throughout the course of this study. Interview transcriptions were sent via e-mail to the participants. Each participant was asked to read his or her transcription in order to verify the accuracy of the transcript and to offer any corrections or clarifications. Only one professor requested a clarification. In-class assignments were turned in immediately following a case session, the results were analyzed during the course of the week, and the instructor of the course returned to class the following week and held a brief follow-up discussion/review about the case from the previous week to ensure accurate interpretation of the results.

Additionally, this research continued over the complete cycle of the course and thus, I had access to the full range of activities from beginning to end. Peer review of data was also used as this research was conducted with support of a grant and other members of the research team reviewed my interpretation of the data.

Finally, in qualitative research, the notions of credibility, transferability, and dependability replace the notions of internal validity, external validity, and reliability from quantitative research. To this end, specific strategies were employed to address each of these research concerns and to provide confidence in this study's credibility, transferability, and dependability. Table 3.4 on the following page addresses the issues involved, and the strategies employed, in ensuring trustworthiness in this research.

TABLE 3.4

Building Trustworthiness

Quantitative Term	Qualitative Term	Strategies Employed
Internal Validity	Credibility	<p>Prolonged engagement in the field; Long-term Observation</p> <p>Use of peer review and debriefing</p> <p>Triangulation of field notes, journal, theoretical memos, transcribed interviews, transcribed debriefs, surveys, chat and thread transcripts, reflections, tasks</p> <p>Multiple layers of analyses used to confirm and/or disconfirm interpretation of the data</p> <p>Reporting researcher's biases and assumptions</p>
External Validity	Transferability	<p>Thick description</p> <p>Purposive sampling (diversification of teacher and professor samples)</p> <p>Triangulation of field notes, journal, theoretical memos, transcribed interviews, transcribed debriefs, surveys, chat and thread transcripts, reflections, tasks</p>
Reliability	Dependability	<p>Reporting researcher's biases</p> <p>Triangulation of field notes, journal, theoretical memos, transcribed interviews, transcribed debriefs, surveys, chat and thread transcripts, reflections, tasks</p> <p>Audit trail using contextual, methodological, theoretical, personal responses and reactions, and analytic documentation in field notes, theoretical memos and journal.</p>

*Role of the Researcher*

*Role*

My role included that of coordinator and participant-observer. I coordinated and planned all phases and aspects of this project and attended the classes as a participant-observer. I did not serve in the capacity of technology support this time, as I did in the pilot project, for two reasons. The first reason was due to the fact I wanted to be free during course time to conduct observations and to take field notes. Secondly, I wanted to blend in with the course participants as much as possible. I did not want to be viewed as another instructor of the course or as the technician because I believe that might have influenced the conversations and actions that occurred around me in the class. This required the addition of a technology support person to the research team, which the budget provided for in the grant

that supported this research.

### *Biases*

The most obvious bias I had in conducting this research was that it is my doctoral dissertation so I had a vested interest in nurturing this project. I, of course, wanted this project and research to be successful and something of which I can be proud.

Additionally, the Educational Psychology Program is a small program and the impact my ideas for this project and the ensuing research had or will have on the students of this program is an always-present responsibility. I, therefore, felt a strong ethical responsibility to the pre-service teachers as well as to the professors in the Educational Psychology Program to conduct this project and research in an outstanding manner.

I also felt an equally strong ethical responsibility to the teachers and professors participating in this project. They were sharing their time in helping me help the pre-service teachers and to conduct my dissertation research. It is obvious that time is a finite resource, especially for teachers and professors. I felt I had an obligation to make sure their time was well spent and was certainly not wasted. However, my bias in this research goes beyond that of simply the role I played in this project for my dissertation. I hold two additional biases.

First, I am a former elementary school teacher from the public school system. I taught for nine years, and like many novice teachers, felt unprepared to teach my first couple of years in practice. I felt as if I were “practicing” on the children and this led to a lot of feelings of guilt and inadequacy on my part. It was not until my third year of teaching that I began to feel at all adequate or prepared to do my job. As I have read the literature about this during my years of graduate study, I realized I was not alone in this phenomenon and I decided I wanted to contribute to an improvement in this area.

I believe theory must be linked to practice for novice teachers to be able to make connections in their teaching. I do believe that learning to teach is a developmental process so I also believe that early experiences may need to be concrete in nature and that scaffolding experiences are necessary to move new teachers to more abstract ways of thinking and learning about teaching and to help them connect theory with practice.

My concern is not only for the newest teachers and in making sure they are as prepared for the realities of the classroom as they can be, but my concern is primarily for the children these new teachers will teach. They deserve a competent, well-prepared teacher that

comes to them ready to teach and to provide them with the education they are there to receive.

Secondly, it is also my belief that teachers' expertise is vastly under-used in the development of new teachers. I firmly believe that pre-service teacher education improves as collaboration with practicing teachers increases. I believe strongly in the potential of school/university collaborations as I believe teachers have much to offer in the education of new teachers. I believe they should have a role in who enters their field. I wanted this research to be an area in which teachers may participate actively and have a voice.

## Chapter 4

### FINDINGS

This research investigated the use of computer-mediated communication as a viable means of supporting a learning community engaged in the study of educational psychology and learning to teach. This chapter presents the findings of the research. Several methods of analysis were used to interpret the data including a deductive content analysis (Patton, 2002), an inductive analysis using the constant-comparative method (Strauss & Corbin 1998), and a small quantitative piece using an Analysis of Variance of Within-Subjects Effects to analyze the reflective nature of the threaded discussions.

Three major domains cut across the data analysis and frame the presentation of the findings. Within those domains, eight categories of data were compiled, aggregated, and analyzed to address the research questions. The three major domains represented in the data include: 1) Communication, 2) Learning, and; 3) Technology. The communication domain addresses research questions numbers one and three by analyzing data related to: a) the nature of the online conversations, b) how the conversations unfolded over time, and; c) how reflection is supported and/or constrained in a computer-mediated environment. The learning domain addresses research question number two by analyzing data related to: d) pre-service teachers' learning, e) teachers' learning and professional development, and; f) professors' learning and professional development. Finally, the technology domain addresses research questions numbers four and five by analyzing data related to: g) the benefits and challenges of using CMC to study educational psychology and teaching, and; h) the benefits and difficulties of creating and maintaining a computer-mediated community of learners. In this chapter, each domain and its categories are described and discussed in detail in order to answer the research questions. First, a brief overview of participation in the communication activities is offered in order to provide a context with which to frame the findings.

#### *Overview: Participation Patterns in Communication Activities*

Frequency of participation in the communication activities varied according to the type of communication and the time of the semester in which it occurred. Students' participation in the chat sessions was at 96%. Sixteen of the 26 students attended all chat sessions and no student ever missed more than one chat. Teacher and professor participation

in the chats was nearly 100% and fell short only due to circumstances that arose that made it impossible for them to participate, such as illness or family and professional responsibilities.

Student participation in the threaded discussions was not as great as it was in the chats. Students' participation in the threaded discussions was at 81% with two students not participating at all. Four more students only participated in one threaded discussion and six students participated in two discussions missing only one threaded discussion session. The remaining 14 students participated in all three threaded discussion sessions. Student participation in both the chats and the threads declined over the course of the semester, but the decline was greater in the threads. Table 4.1 and Table 4.2 below represent student participation in the chats and threads over time.

Table 4.1

Student Participation in Chats over Time

	Chat 1	Chat 2	Chat 3	Chat 4
Number of students participating	26	23	23	22
Number of students not participating	0	3	3	4

Table 4.2

Student Participation in Threaded Discussions over Time

	Threaded Discussion 1	Threaded Discussion 2	Threaded Discussion 3
Number of students participating	22	22	10
Number of students not participating	4	4	12

When the students were asked why they missed participation in one or the other of the communication activities, the most common response was forgetting. The second and only other reason given was a conflict arose and they were unable to attend. Students did

have the option of rescheduling a missed chat; however, none of the students who said they missed a chat due to a conflict contacted me to reschedule.

Teacher and professor participation was less than expected in the threaded discussions with teacher/professor participation at only 15%. Only one teacher participated in all three threaded discussions and two other teachers participated once. Two professors each participated one time. The remaining six professors and five teachers did not participate at all. Figure 4.1 on the following page provides a graphic representation of the teachers' and professors' participation in the chats and threaded discussions over the course of the semester. Boxes shaded in gray represent sessions in which the teachers and professors were online and participating while the white boxes indicate a missed session.

Figure 4.1

Teacher and Professor Participation in Chats and Threads over Time

<i>Professors</i>	<i>CH1</i>	<i>CH 2</i>	<i>CH3</i>	<i>CH 4</i>	<b>TH1</b>	<b>TH2</b>	<b>TH3</b>
Sally Brothers							
Christy Allen							
Miriam Quidley							
Tony Dawson							
Donald Newbern							
Angela Porter							
Victoria Ceron							
Jerry Wilson							

<b>Teachers</b>	<b>CH 1</b>	<b>CH 2</b>	<b>CH 3</b>	<b>CH 4</b>	<b>TH 1</b>	<b>TH 2</b>	<b>TH 3</b>
Natalie Gerringe							
Shawna Thomas							
Janice King							
Rhonda Hannah							
Mary Beth Olson							
Nancy Smith							
Gloria Williams							
Gail Walters							

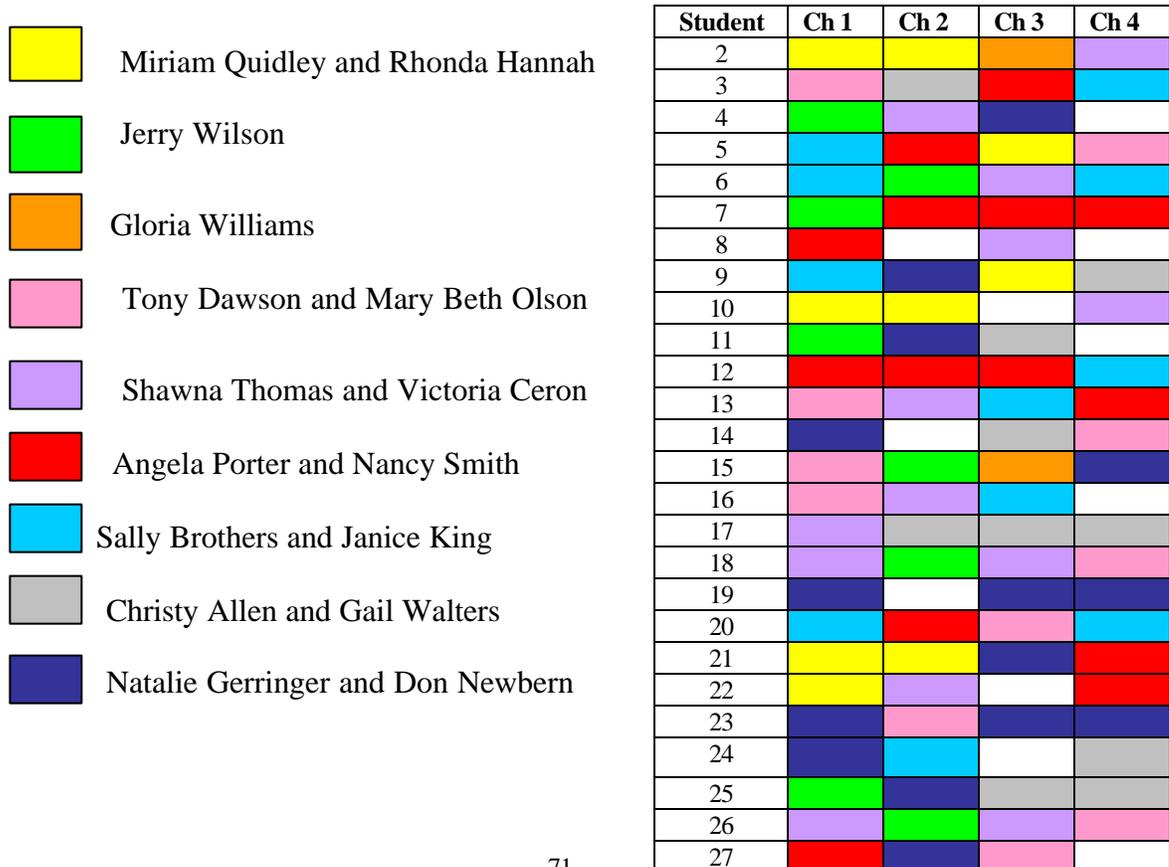
When asked about their participation in the threaded discussions, the teachers and professors offered a variety of reasons as to why they found it difficult to participate in these discussions. By far, the most common response was the overwhelming nature of opening up a discussion board with approximately 50-60 posts each time and even knowing where to

begin responding. They mentioned feeling overwhelmed at the volume of posts it would be necessary to read in order to reply. This response was closely followed by demands on their time. This response; however, was very closely linked to the first response due to the time it would take to wade through so many posts. The third reason involved simply forgetting about it. Finally, one professor did not respond to one of the threaded discussions due to feeling “disillusioned” by the students’ comments.

The final piece of participation patterns this section discusses is the students’ choices of chats. Student responses in the interviews indicated they made their choice first based on who they wanted to chat with, but this was also affected by their availability at the time that chat was offered. Nonetheless, it does appear from the data that the students did experience chatting with a range of teachers and professors in their chat sessions. Nineteen of the students chatted with three to four different teacher/professor pairs. Six students chatted with only two different pairs and one student chatted with only one pair. Figure 4.2 below provides a graphic representation of the students’ choice of chats. Each color represents a different teacher/professor pair. White boxes represent a missed session.

Figure 4.2

Students’ Choices of Chats



### *Answering the Research Questions*

The following sections frame the analysis in three domains of data: Communication, Learning, and Technology. They answer the research questions by analysis of the data within each of those domains. At least four data sets were available to answer each research question. A matrix delineating the data sources used to answer each question can be found on page 73.

#### *Domain One: Communication*

Opportunities for communication among the pre-service teachers, teachers, and professors included chat sessions and threaded discussions. Data sets used to analyze the data within this domain include chat and threaded discussion transcripts, debriefs, and teacher, professor, and pre-service teacher interviews. Data were analyzed to answer research questions numbers one and three. Research question number one is addressed first: What is the nature of the online conversations and how do they unfold over time within a session and across a semester? Research question number three is addressed next: How is reflection supported and/or constrained in a computer-mediated environment? Research question number one is answered in two parts – first the nature of the conversations is discussed and then, how they unfolded over time is described.

#### *The Nature of the Online Conversations*

The chat room conversations typically followed a general pattern of welcoming pleasantries and social remarks followed by the discussion and question/answer formats, and finally, closure. This pattern was not suggested to the participants, but rather developed on its own within the interactions of the participants. Teachers and professors would often ask the students to remind them of their majors and their interests. The teachers and professors would then begin the discussion by either asking the students if they had any questions they particularly wanted addressed or, if they did not, the teachers and professors would start the conversation by asking the students a question to get them talking.

During the first chat session, the chats were a little slower paced. One chat in particular during the first chat session was extremely slow. The teacher and professor used a number of prompts to elicit student participation, but the students would hardly even answer a yes or no question. I made a note of the students involved in this chat and observed them later during class sessions. They were all quiet students in the classroom as well. This could

Table 4.3  
Data Sources

Research Questions	Domain Represented	Teacher & Professor Interviews	Student Interviews	Ed Psych Professor Interviews	Tech Support Interview	Debriefs	Reflections	KWLs	Chats	Threads	Student Surveys	Teacher Surveys	Field Notes	Research Journal
What is the nature of the on-line conversations and how do they unfold over time within a session and across a semester?	Communication	X	X			X			X	X				
What does each participant group learn from communicating with the other participant groups?	Communication and Learning	X	X				X	X			X			
What do participants report as the benefits and challenges of CMC?	Technology	X	X	X	X	X					X	X	X	X
What are the benefits and difficulties of creating and maintaining a CMCL?	Technology			X	X								X	X
How does a computer-mediated learning community support and/or constrain reflection?	Communication and Technology	X	X				X			X	X			

have been the result of simply having quiet-natured or shy students all in one chat. I also asked these students during the interviews about their thoughts and feelings toward technology and their prior experience in chat before this project. This was the first time any of them had chatted; however, it was not the technology of which these students were wary. Rather, they were nervous about talking to teachers. They worried about “looking stupid.”

The second session of chats was more relaxed and the discussions became more focused over the semester. In the first chat sessions, the conversations and questions asked revolved more around the pre-service teachers’ individual and personal concerns about teaching. By October and the second session of activities, the pre-service teachers began noticing the importance of context and began stating concerns and framing their questions as to the needs of the students. This trend continued into the third session in November, and by the fourth cycle of activities in December, the pre-service teachers’ conversations and questions became more integrated with past topics of discussion. They were synthesizing the range of information they had learned throughout the semester. They were able to talk about one topic through multiple lenses. Table 4.4 beginning on page 75 presents the range of topics discussed in the chats.

The CD case studies were seldom a main focal point in the chat conversations. They often served as a conversation starter, but the conversations turned very quickly toward the students’ areas of interest and the questions they came with to the chat.

There was one week of chat sessions; however, when the case studies became very much the focus of the conversations. The second video case study the students viewed in class was *The Brenda Beyal Case?* (Harris, 2000) in which a teacher, Mrs. Beyal, used a guided discovery math lesson in a multi-age classroom with students in second, third, and fourth grade. This activity-driven lesson differed greatly from the first case the students viewed – a direct instruction lesson with fourth graders. The students had expressed very positive comments and evaluations about the first case study – *The Larry Beaudin Case?* (Harris, 2000) and about the teacher’s, Mr. Beaudin’s, excellent classroom management skills. His students were sitting quietly waiting for instruction, answering only when called upon. They knew the rules and procedures of the classroom very well and participated accordingly. The pre-service teachers were completely impressed. In Mrs. Beyal’s class, the students were working in small groups using tiles to identify patterns in mathematics and this

Table 4.4  
Chat Topics

Chat Leaders	Session 1: The Larry Beaudin Case Instructional Design and Classroom Management	Session 2: The Brenda Beyer Case Information Processing	Session 3: The Derek Rentz Case Information Processing	Session 4: The Assessment Literacy Case Assessment
1 Quidley and Hannah	Case  Classroom management (having materials ready, rules for student participation)  Feedback  Learning Environment	Differences between elementary and high school  Case – working with students on a variety of levels, problem solving  Pairing/Grouping students  Students learning from mistakes	Field experiences/observations  Planning – for substitutes, making it relevant to the students’ worlds, advance preparation, grouping  SOLs  Enjoying being with children – the hugs, relationships, helping them  Dealing with administration  Interviewing	
2 Wilson and Williams	Knowing your students  Dealing with difficult students  Engaging/Connecting with the students  Difference between elementary and high school  Differentiating Instruction  Value of practical experience	Case – discovery learning, grouping, differentiation  Connecting with students	First-year struggles  Parent-teacher conferences  Learning styles/instructional strategies  Preassessments – purpose of assessments  Case Study – smooth transitions, keeping students on task	

<p><b>3</b></p> <p>Dawson and Olson</p>	<p>Case</p> <p>Lesson Plan/Revising</p> <p>Student Inattention</p> <p>Classroom Management (Rules and consequences, dealing with difficult students, reward systems)</p>	<p>Case – comparing Beyer to Beaudin</p> <p>Lecture vs. Guided Discovery</p> <p>Constructivism – value of making mistakes</p> <p>SOLs – standardization vs. development, political influence, teachers’ lack of voice</p>	<p>Case – building on prior knowledge, connecting with students (using something they felt passionate about to build motivation, Writer’s Workshop)</p> <p>Disruptive students</p> <p>Working with parents</p> <p>Behavioral modification/rewards</p> <p>Parent involvement</p>	<p>Assessment – differences, purpose of assessing, part of the learning process, the value of learning from mistakes</p> <p>Gifted students</p> <p>Motivation</p>
<p><b>4</b></p> <p>Thomas and Ceron</p>	<p>Case</p> <p>Classroom Management</p> <p>First day of school</p> <p>Teaching methods – alternatives to direct instruction</p>	<p>Reengaging off-task students</p> <p>Praise/Motivation</p> <p>Case – comparing Beyer to Beaudin, goal/objective of lesson, generation of teaching ideas, confusion over what discovery learning is</p> <p>Encouraging participation</p> <p>Critical of teachers</p>	<p>Problem-based learning</p> <p>Ownership of learning</p> <p>Lesson planning – administration requirement of lesson plans, timing, thematic planning, A+, revising them as needed)</p> <p>Modifying instruction</p> <p>Examples of lesson ideas</p>	<p>Assessment – differentiation</p> <p>Running records</p> <p>Accelerated Reader</p> <p>Classroom management – grouping</p> <p>Reinforcement and Motivation</p> <p>Home and parental support</p>
<p><b>5</b></p> <p>Porter and Smith</p>	<p>Literacy/ESL</p> <p>Knowing your students</p> <p>Resources/Budgets</p> <p>Assessment</p> <p>SOLs/Standards</p> <p>Case</p> <p>Classroom Management (procedures, organization)</p>	<p>Non-disruptive, non-participative students</p> <p>Encouraging participation/ Knowing your students – making connections, being approachable/Class meetings</p> <p>Structure/Organization/Expectations</p> <p>Case – lack of control, objective of lesson</p> <p>Group work – participation, expectations, managing and monitoring groups, flexible grouping</p>	<p>Discovery learning</p> <p>Talk about their assignment to write a lesson plan for Dr. Dawson – generating ideas</p> <p>Role playing</p> <p>SOLs</p> <p>Varying teaching styles</p> <p>Knowing your students</p>	<p>Assessment – differentiation/choices, grouping, alternative assessments</p>

<p><b>6</b></p> <p>Brothers and King</p>	<p>Motivation</p> <p>Special education students (inclusion, IEPs, Educating Peter, encouraging participation, working with deaf students)</p> <p>Working with parents</p> <p>Managing students and resources</p> <p>Alternatives to college</p> <p>ESL</p> <p>Learning from your students</p>	<p>Case – comparing Beyer to Beaudin</p> <p>Motivation</p> <p>SOLs</p> <p>Flexibility</p> <p>First day of school</p> <p>Special ed students (inclusion, balancing their needs with those of other students, Educating Peter, gifted students)</p>	<p>Talking about their assignment to write a lesson plan for Peter – generating ideas</p> <p>Lesson planning – short and long range, thematic planning, teaching with a variety of methods</p> <p>Assessments - portfolios</p>	<p>Assessments – balancing traditional and alternative types, authentic assessments, rubrics, self-assessments – values of and difficulties with, special ed students and modifications</p> <p>Understanding by Design</p> <p>Special ed students – working with parents, identification, behavioral issues</p>
<p><b>7</b></p> <p>Allen and Walters</p>		<p>Case – lack of control, goal/objective of lesson, comparing Beyer to Beaudin</p> <p>Encouraging participation</p> <p>Gender</p> <p>Assessment – differentiation, relation to instruction, how a focus on “grades” can diminish learning, diversifying assessments</p>	<p>Lesson planning – first year (over-planning, underplanning), goals/objectives, modifying lesson plans according to student interests/needs</p> <p>SOLs</p> <p>Making learning relevant</p>	<p>Assessment – scoring participation, purpose of assessment, grouping, rubrics, alternative assessments, avoiding competition</p>
<p><b>8</b></p> <p>Gerringer and Newbern</p>	<p>Classroom Management</p> <p>Block scheduling</p> <p>Special education (504s, IEPs)/The education “system”/ Reflecting on teaching</p> <p>Characteristics of good teachers</p> <p>Interacting/Knowing students</p>	<p>Hands-on activities/groups</p> <p>Special ed students (assistance in the classroom, inclusion, differentiated instruction, planning and working with aides and resource teachers, IEPs, testing and accommodations, pull-out programs, parental involvement, administration, SOLs)</p> <p>Mentoring programs</p>	<p>Case – building on prior knowledge/experience, graphic organizers</p> <p>Information processing</p> <p>Differentiating Instruction/Assessment</p> <p>Accommodating differences/Special Ed.</p> <p>Building community - morning meetings</p>	<p>Assessment – grouping, alternative assessments, self-assessments, special ed students</p> <p>Case – performance assessments, gender bias</p> <p>Equity in education – fair doesn’t mean equal</p>

was much less appealing to the pre-service teachers. The classroom was noisy, the children were talking to each other, and some students were calling out answers rather than waiting to be called upon to respond.

The pre-service teachers responded very negatively toward this case study and toward Mrs. Beyal. They asserted that she had poor classroom management skills and that her classroom was completely out of control. They often mentioned that Mrs. Beyal should have stated her objectives up front, indicating that they were unsure of the purpose of a guided discovery lesson. This conversation began in class immediately following the case study, continued into the chat week, and even on into the threaded discussion.

In sharp contrast to the students, the teachers' and professors' opinions were much more positive. In fact, two of the teachers and one of the professors e-mailed me with their concerns about the students' opinions of the cases and wanted to know if and how they should address it. They were not necessarily surprised that the pre-service teachers held these opinions, though one of them was, their primary concern was stating anything that might contradict what Dr. Dawson had told the students in the classroom. They only knew of the students' responses, they did not know if this was a response that had been condoned or elicited by Dr. Dawson. I assured them they could speak their minds and once I informed Dr. Dawson of this concern, he sent an email to the teachers and professors encouraging them to speak freely and assuring them that he believed hearing different viewpoints would be a positive experience for his students. See Appendix P. For all but one person, this alleviated their concerns and they began to speak their thoughts throughout the rest of the semester.

Similar situations with pre-service teachers' concerns about classroom management are well corroborated in the research literature (Angelle, 2002; Britt, 1997; Darling-Hammond, Wise, & Klein, 1999; Gee, 2001; Gibbons & Jones, 1994; Greenlee & Ogletree, 1993; Martin & Baldwin, 1993, 1994; Nagel & Driscoll, 1992; Olson & Osborne, 1991). That is, it is not at all unusual for new teachers to voice a strong concern about the desire to get and maintain control over their students. There is a considerable amount of literature that reports classroom management issues as the primary concern of beginning teachers. As Schoonmaker (1998) noted, "The thought of being alone in the classroom and in charge is so overwhelming to most student teachers that it colors almost everything they do. Until they feel confident that they can control student behavior, they are preoccupied by issues of

discipline” (p 569). As Mrs. Smith, who has had more student teachers than she could remember, noted about the Beaudin/Beyal controversy:

They come in with the pie in the sky ideas, but they aren't willing to take the chance to try them most of the time when it comes right down to it, particularly if they're being observed because they seem to feel that quiet and calm is a sign of good learning slash teaching. And when you talk to them like I've done in other chats and like I do with my student teachers, and ask them, "How do you want to learn when you walk into a class? What makes you groan?" And they'll say, "When it's a professor that just stands up there for three hours and spouts stuff." And I'll tell them that ten-year-olds are the same way. And yet, that's the way they fall back. I think they need to get into more classrooms, getting them to actually see it, with teachers that really believe in it and know it. Because once you point out to them when the kids are actively engaged in something, you know, at first they're like, "Oh no, Mrs. Smith, look. They're just walking around and talking." Then I'll tell them to go get in the middle of them and listen to what they're talking about. Well, eight out of ten kids are talking about what it is they're supposed to be doing, but they don't see that hiding behind a desk. They need to turn and look at how they learn. What they say they value in theory is not what they say they value in practice. They definitely have a big disconnect.

The teachers and professors attempted to talk through the pre-service teachers' concerns with Mrs. Beyal's lesson. Below are two excerpts from chat sessions in which they were discussing the Beaudin and Beyal cases. This first excerpt is from Dr. Ceron's and Mrs. Thomas' chat:

Student 1 > in the case study...the teacher constantly let students speak as if she were going to respond to them but if they're comment was a little off base...she ignored them and moved on...this bothered me a little...is this ever ok to do?

Student 2 > i really didn't think this case was very good

Student 3 > i think the comment should still be acknowledged but try to redirect them back to the lesson

Student 2 > i was bored just watching it

Student 2 > i think you should always try to find something positive first, then talk about

what else might work

Student 4 > it is hard as a student to even want to engage in an activity when your teacher dismisses what you are saying

Student 4 > it is no wonder why some students were not paying attention

Student 2 > even if the comment is way off you can always ask how the student got to that point and then talk about how else to approach it

Victoria Ceron > I agree with Student 3. And then there are also those "teachable moments" that would let you go with the flow if the student was going in an interesting direction you could go with it.

Shawna Thomas > ladies, i think the point of her lesson was concrete concept development rather than entertainment. on the other hand, the more exciting and challenging the lesson, the less NEED for redirection (paying attention)

Shawna Thomas > yes, (to teachable moments!) they are very special!

Student 4 > I guess compared to the first case study that we saw this one didn't really impress me in the way she handled the different situations that were going on in her class

This discussion about Mr. Beaudin and Mrs. Beyal was the focus of all the chats during this chat week. Following is another example from Dr. Quidley's and Mrs. Hannah's chat:

Student 1 > i was not as interested or excited about this case study as the other one

Mrs. Hannah > Why

Student 1 > she was not as interesting nor did she have the same interest as the previous teacher

Student 2 > i agree with [Student 1]...this teacher lacked the interest of the children

Student 3 > I found that she wasn't able to engage the students as well as the other teacher. His humor and creativity really showed through in his lesson

Mrs. Hannah > What do you mean by interest? Interest of the students

Student 2 > the other teacher caught their attention by preparing so well before the lesson

Student 2 > yes interest of the students

Mrs. Hannah > This lesson took a lot of thought and preparation

Student 1 > she keep getting the same two students to participate but the other guy even made me want to get into the lesson

Mrs. Hannah > Because it was this model rather than the teacher telling all the info.

Student 1 > just different approaches to teaching but i enjoyed the other guy a little more

Mrs. Hannah > Do you think she was too low key?

Student 1 > yes...she did not get the children excited about the topic because she was not excited about it

Student 1 > i know that not all lessons can be off the wall with excitement but how can you get the children to stay interested even if you are doing a lesson that may not appeal to them all?

Mrs. Hannah > did you think the students learned or owned their learning by discovering it themselves?

Student 3 > I felt like she was like many of the teachers that I had in elementary school. She was just going through many of the actions rather than really getting involved and helping the students to want to be involved.

Mrs. Hannah > How would you have her change?

Student 1 > i think they learned by discovering themselves and i think that i a very good way for children to learn but i also agree with [Student 3], the teacher needs to be involved in the discover and facilitate it better

Mrs. Hannah > How could she facilitate better?

Student 1 > i would rather that she not use simple square blocks...maybe she could use a material that was even more appeal more to the students such as bigger blocks. she could also give them more real life questions

Student 1 > she could incorporate something that the children will grasp, something that they can relate to rather than just small square blocks

Mrs. Hannah > I think she was trying to relate to the students. I think she thought they would relate to the blocks rather than just showing examples on the overhead.

Student 2 > so what did you think of the lesson? would you have changed much?

Mrs. Hannah > It is very interesting to get your ideas on this lesson. Let me see more,

Student 1 > i can see that, but i still think that she lacked the students attention and could have interested them more with either questions or other materials

Student 3 > I think that her approach was in the middle of a spectrum, there are definitely better ways of helping the students learn, but she could also have done a lot worse.

Mrs. Hannah > Was the amount of noise in the classroom making you think she did not have their attention?

Student 2 > yes that's always the first impression, but you have to think of what the children may be talking about

Dr. Quidley > The level of noise was distracting to me.

Mrs. Hannah > the tiles were noisy, but conversation is not always negative.

Student 3 > I also thought that the noise was loud, but most of the children were working together to try and figure out ways of making the rectangles. Any time interactions are taking place noise is going to result.

Student 2 > yes i agree, sometimes isn't that what we want, to engage them in discussion...but i guess not while we're talking

Mrs. Hannah > I think the case reminded me not to give all the answers before letting the children discuss

Student 1 > discussion is great when they are actively involved in the task at hand but when they came together as a class to discuss, there just did not seem to see that discussion so it makes you wonder if they were discussing what she wanted

Student 1 > it was definitely a good intro to an important concept

Dr. Quidley > I think some teachers have a much greater tolerance for noise than others. I am very easily distracted by noises, as are many children. I tend to think that when the noise is productive, it is not as distracting as when it is not productive

Student 1 > i guess we were just spoiled by the first case

Mrs. Hannah > In my experience I have seen many good teachers of all personalities and styles. I guess I was not as put off by her style.

Student 1 > again, i think that we were just really impressed with the first case teacher

On the following page are two examples of conversations that occurred during the threaded discussion session in this second cycle of activities. These posts are typical of many of the student responses concerning the Beaudin/Beyal cases.

i thought that mr. beaudins class was successful in many things, but first and foremost was the introduction. when teachers introduce a new concept kids daydream in a good way. they are trying to remember if they have ever experienced anything like what the teacher is explaining. humor and enthusiasm can carry really dull material a long way. personally i think that is extremely important. to eliminate the problem of the brown-noser-know-it-all kids who like to answer every question, mr. beaudin used dice to call on students for answers. demonstrations and modeling help kids to see what they are supposed to do as well as verbal instruction. mr. beaudin left out any relic of discovery and his methods did not leave the students enough time to think critically. students may be excited about activities, but please be patient enough to make sure they are exercising their minds.

mrs. beyel's class was managed using the chaos theory(joke). she could've kept her students under a slight iron hand if the instructions were clear and concise. she could have also gone through the process of organizing tiles to form rectangles, but that would've defeated the purpose of the whole discovery method. she lacked organization and control over students' attention. the strengths to this lesson were discovery methods and tangible objects of instruction. the children were allowed to critically think for themselves with a manipulative in front of them. working in a collaborative group of two works well in this case. the materials and the assignment were saturated with simplicity. since the assignment was simple, the goals and objectives should have been more clear.

question:

Mrs. Beyal, would you have used any more instruction in that particular assignment or maybe have used multiple examples of tangible objects to relay the objective a little more clearly, or were the tiles sufficient?

---

I agree with your point on trying to eliminate the brown-noser-know-it-all kids who want to answer all the questions. It's very hard in a classroom to allow every student to talk and some don't even volunteer to speak up in a discussion. Some kids want to control group work and discussions and not allow others to participate. How can you equally distribute students in groups and throughout a classroom in order to allow all of them to participate effectively? If some kids want to talk a lot, how do you get them to be quiet and let the other kids speak?

I agree with [the student above] about Mr. Beaudin's method of calling on people to participate. It was a fair and efficient way to include the students. It does eliminate the "brown nosers," but I don't think all children participate to suck up. Some generally like to be active participants in learning and it helps them to grasp concepts more clearly. I don't feel that everyone felt included in Mrs. Beyal's lesson because there were the students who just called out the answers

I agree with [another student] that not all children who like to answer all the questions are "brown-noser-know-it-all-kids." I am very sad that a future teacher (assuming that you are going to be a teacher since you are in this class) would be under the assumption that all children who love learning and are willing to participate are just sucking up. I myself have often been made fun of for enjoying school and the learning process. I think that this teasing of children who like school and schoolwork may be one reason so many children become turned off from learning at such a young age. How can we as teachers expect children to do well in school if we look down on them for going the extra mile (always willing to participate)?

Smart people are not nerds, they have a passion for learning.

Reply

Throughout the two weeks of chats and threads, the teachers and professors tried to help the students see the value in the type of lesson Mrs. Beyal offered her students, but, to no avail. However, several of them did mention to me during the interviews at the end of the semester that they had continued to think about this difference in opinion with the teachers/professors. They felt there must be some reason why all the teachers liked it so much, but most of them still did not really understand why the teachers and professors felt so differently than the students did. As one student considered this, she said, “I can’t figure it out. They must know something we don’t know.” By this point of the semester; however, several of the students had come to realize why they were so unsettled by Mrs. Beyal’s lesson. As one student commented:

With exploration and discovery it might be hard to get that control of the classroom, whereas direct instruction, he has them on task, they were doing what he wanted, seemed to enjoy it, where you never know where exploration might go. So it’s just that comfort.

And another student commented, “I think we liked the first one because that’s how we’re hoping a classroom will be and maybe teachers are ok with the second one because they know how classrooms really are.” This assertion seems to be validated upon listening to the teachers’ and professors’ reactions to the case. Dr. Wilson who teaches mathematics education thought the lesson was “wonderful.” He said:

Mrs. Beyal’s lesson was very controlled. Those kids weren’t killing each other. They weren’t throwing pencils. They weren’t throwing stuff and they weren’t yelling out. I mean the yelling out was even controlled. To me, yelling out is when it’s inappropriate. Because to me, it’s funny, in my classes, I have to encourage students to go ahead, shout it out, shout it out. They all want to raise their hand, which is fine in a big lecture or whatever, but, you know, you got 20 in there, just let her rip.

During the debriefing, as Dr. Newbern reflected on this controversy, he commented:

It could have been the order. That could have been the order of the CDs because they were both, you know, because you’re building on prior knowledge and the only prior knowledge they have based on those CDs is that man. I think it was a gender issue as well. They had a man who was teaching a group of little kids. Right? And you very rarely see that and he had good control and so some of that mimicked what a good

classroom was and then you move to a very different style of class and they were like, 'oh, she's not got good control' and I think it was just how they, I think it was something they had to hang on to. I think too, what probably happens is eventually they know they're going to be in the classroom and so they're interested in what classroom management is and what control means and how to get kids motivated. They just thought 'I should never have my kids talking while I'm talking' and things like that and I don't think they've had the experience of being in an elementary classroom to see what really happens.

This Beyal/Beaudin debate was the only instance during the semester where there was so much focus on the case study during the chats and threads. The remainder of the discussions evolved from the case studies, rather than focusing solely on them, and addressed the particular interests of the chatters. The nature of the conversations then, evolved from an interaction among classroom events, the case study that had been viewed, and the participants. Further analysis revealed that there were three types of interactions that seemed to most influence the nature of the conversation: a) the role the teacher and professor saw themselves as fulfilling in the chats, b) the interaction between the teacher and professor, and; c) the goal(s) the teacher and professor had for the chat.

*Role played by the teacher and professor.* One factor that influenced the nature of the conversations was the role the teachers and professors saw themselves as fulfilling during the chats. This was not something that was discussed, or that I had even considered before the research began, but some teachers/professors saw themselves as a resource for the students, others thought of their role as being more of a facilitator, and some felt they were trying to achieve some combination of both. This last response was by far the most common. Eleven of the fifteen teachers/professors who were interviewed felt they should be both a resource for the students, as well as a facilitator guiding them in their learning about teaching. Two, one teacher and one professor, felt they were purely facilitators and two, again one teacher and one professor, felt their role was that of a resource for the students.

I had not discussed with them how they should lead the chats prior to beginning the semester because based on the pilot study analysis, the participation evolved from the context of the chat and from the interactions among the chatters. I had only told them that the pre-service teachers would come to the chats with questions and that they could lead the chats

however they felt most comfortable. I did not want them to feel they had to prepare for a chat like preparing to teach. I also did not want them to feel any pressure on having to “perform” in a certain way. They were all very experienced teachers and I believed their experience would guide them, which it did. As one student noticed:

At first I was afraid that we were going to be sitting there and that they would only be answering if we asked them something and I was like, man, I don't want nothing to do with this and I'm going to ask two questions and then that's going to be all my input into the discussion. But then it got to where after the first five or ten minutes of the first discussion, I was talking with Dr. Brothers and Mrs. King, but they started asking me questions and different people in the chat room different questions and it was kind of like they were used to having that teaching role and keeping things going. They could tell when the discussion was getting kind of dry and then they would change it and be like let's try and talk about the case or if that wasn't going anywhere they'd bring in something new. You could tell they were teachers. All of a sudden it was like, oh, I can answer that and the next thing I know I'm writing three or four sentences.

One person did mention feeling uncomfortable about not having more explicit instruction in what was expected in leading the chats, but others said they liked the freedom to do what felt right at the moment and that they would not like being placed into a particular role. In fact, eleven teachers/professors said they played both roles of a facilitator and a resource. They asked questions and guided the students in a direction when they felt it was a “teachable moment” as one of the professors mentioned. Likewise, when the students had a lot of questions or asked for practical advice, they would slip into more of a resource role. Mrs. Smith explained this duality very well:

The first chat session I remember, they were out to lunch. They were not focused so I started picking off a couple of topics and started asking them some questions. Once I started asking some questions and pulling it out and Dr. Porter started doing that, it got better. But you notice tonight, we had to ask very few questions or if we did ask questions, it was truly for information. But in the chats before, if I'm asking a lot of questions, it's because I'm trying to keep the ball rolling and trying to get them going.

These teachers and professors “taught” and chatted based on the needs of the students

with whom they were chatting. In these instances, the nature of the conversations was influenced more by the pre-service teachers and the questions or interests they brought with them to the chat, than it was influenced by the teacher or professor.

In the instances in which the teacher or professor played one specific role, whether it was facilitator or resource, the teacher or professor influenced the nature of the conversations more than the pre-service teachers did. The roles that the students played were by and large in response to the teacher's role. This is due to the fact that, for example, if the teacher or professor was fulfilling a purely facilitator role and was asking a lot of questions of the pre-service teachers, the pre-service teachers were then placed in a role of thinking and responding and there was less time for them to ask the questions that would take the conversation down a different path. At the time, I wondered if this made the students feel uncomfortable or "on the spot" so to speak, but in the interviews, the students said they liked it when the teachers/professors asked them questions because it made them think about things they had never thought about before.

With a resource leader, the impetus was placed on the students to ask questions and these questions were usually based in seeking advice or in asking the teachers about practical applications of educational concepts. In these instances, the conversations remained based in the practices of the teacher and/or professor placing them in a more expert role and not focusing as much on the connection between the theory and practice. During the interviews, the pre-service teachers also mentioned that they really enjoyed having an expert on hand to ask questions of and to have that "resource person," so the combination of both types of chat leaders was a definite advantage.

In all instances; however, whether the chat leaders were purely facilitators, purely resource, or a combination of both, there were nonetheless interactions from all participants that influenced the direction and nature of the conversations. One cannot be totally parsed out from another.

*Interaction between the teacher and professor.* The second factor that influenced the nature of the conversations was the interaction between the teacher and professor pair leading the chat. These interactions also differed across groups. For example, one professor, Dr. Brothers, would sometimes begin asking the teacher questions for the students. Dr. Brothers has worked with pre-service teachers for many years and is aware of some of their typical

concerns, but she is also aware of what they need to be learning or gaining an understanding of at this point in their program. When the chats would lull or the conversation slowed down a little too much, Dr. Brothers would begin asking questions she felt would be good for the pre-service teachers to hear a practicing teacher address.

Other teacher/professor pairs seemed almost to take turns in leading the chat. The teacher would guide the conversation for a while and then the professor would step into more of a leading position. This dance would continue back and forth throughout the chat with the person with the most experience with the topic or concern under discussion taking the lead. As interview documentation revealed, this was not a predetermined routine the partners had established, but rather, it evolved from their interactions with each other within the context of the chat.

For one person, interacting with a partner to lead the chats was difficult. Although having the two roles of facilitator and resource available to the students turned out to be an advantage for the pre-service teachers, it was a difficult situation for one person. There was one teacher/professor pair in which one person was playing a purely facilitative role and the other person wanted to be solely a resource. This person disliked being paired and felt that being paired with another person made it more difficult to lead the chats than it would be to lead the chats alone. In this person's words, the conflict between the facilitator and resource roles is obvious:

It was more difficult for me to be in there with someone than it was to be there alone. I didn't know when I would be overstepping my bounds. I wanted to be equal in there with her, give her equal opportunity. So there were those feelings even before I started, you know, how do I make sure I don't hog the conversation or that I participate enough and so that was a concern. There were times when we were on two separate topics and so trying to follow through with one conversation and then switching. And, she was asking questions. It seemed like she was probing more as a teacher instead of sharing what she did as a teacher so then I wasn't sure how much of sharing I should do. I thought maybe I was on the wrong track.

One other person mentioned leading the chats alone as preferable, but did not dislike being paired or feel that it made it more difficult. The remaining thirteen teachers and professors said they liked being paired and would prefer that to leading the chats alone. Most

teachers/professors had indicated that they played both roles so because they felt freer to go back and forth between roles, they did not feel the conflict that a pure resource person might feel if he or she were to be paired with a pure facilitator. The benefits of being paired seemed to these teachers and professors to outweigh any difficulties that might arise. For instance, Mrs. Smith noted that:

I just finished grading papers. I just finished talking to a parent on the phone or doing SOL lesson plans, so that's what's right up there for me. Dr. Porter just finished dealing with some student teachers, reading the latest research so that's what's salient for her. It's good that we're coming from different places.

This notion of being paired brought up a very interesting situation. The professors really enjoyed being paired with the teachers because they felt a sense of validation. This came up in nearly every professor's interview although this was not in any question that I asked. For example, Dr. Allen said, "I liked being with a practicing teacher because it's always nice to hear them say things you have said to your students in class. It's good to have validation from them." And Dr. Brothers commented that in one of her chats, Mrs. King had mentioned she has to do lesson plans and that her lesson plans sometimes get reviewed. Dr. Brothers said, "It's like, jeez, this is the real world. This is what you need to know. You know, we're not professors just BS'ing you. We're having you do this for a purpose and you're going to be doing this." And finally, this notion of validation of the professors came up in Dr. Dawson's class as well. As he mentioned during his interview:

There's a little bit of lack of credibility from the perspective of the students because I'm not out there teaching anymore. I'm doing the higher ed thing. So it provided actually credibility for me when the teachers would verify the things I've been saying so I found that useful and I always found it amusing that the students thought I might be lying to them. They were always surprised when they came back. So I found that good.

I did notice during observations in the classroom that the students would often come in and make a comment that another teacher had said the same thing Dr. Dawson had said in class so they figured he must be right. This happened four or five times and actually became a joke. One day Dr. Dawson said to them, "What did you all think I do? Make this stuff up on the way in to work in the mornings?"

Though interacting with each other and working together to chat with the pre-service teachers was more difficult for some than for others, the ways in which the teachers and professors interacted with each other did influence the nature of the conversations. In the one instance in which the pair was uncomfortable with each other due to conflicting roles, these chats always seemed to be a little more stilted. The conversation did not flow naturally from one point of discussion to another. The conversation seemed to be more contrived, that the participants felt like they had to fill the 45 minutes so they had to say something.

These interactions are entwined with the specific goals and processes the teachers and professors said they tried to engage in during the chats. In this way, the next section is a continuation of how the teachers and professors interacted with each other by focusing on what their goals or intentions for the chats were.

*Goals.* When I debriefed the teachers and professors, I asked them if they had a goal or an objective for their chats. I asked them this as a general question about all of their chats, but I also focused on the particular chat they had just finished leading. I would ask them what was happening at a particular point in the conversation or what they were trying to accomplish at that particular point.

In general, thirteen of the fifteen teachers and professors interviewed said they had goals for their chats. Nine of those 13 said the goals evolved as the chats went along and four of them said they entered the chats with a goal. Only two said they had no goal of any kind and that none ever evolved for them. Of these two, one said no goal emerged because she was acting as a resource and was just trying to share ideas. The other person said she felt that her goal was to mentor them so she needed to be dealing with their concerns, not any agenda of hers. Of the four who mentioned having preconceived goals, for two of them the goal was to enhance the pre-service teachers' learning of the topic that they were studying. Dr. Newbern stated this was his stance and that he pulled his notes on the topic under study to have next to him as he chatted to remind him of important areas to discuss. Dr. Dawson mentioned having the global goal of getting the students to think, his reasoning for asking a lot of questions during the chats. Mrs. Olson's goal was a little broader still. As she commented:

We're growing the next batch of teachers. To help the profession better itself is my underlying goal. The way that I think I can do that is to help them look ahead to

some ideas that they need to think about before entering the classroom. They're pre-service teachers so they haven't had a lot of experiences and I think with the ideas from a classroom teacher fresh from the classroom, that makes what the professors at Tech are saying a little more meaningful. So, for example, the conversation tonight about pre-assessment, that's going to be a little more meaningful to them having heard that discussion with people that are teaching, to give meaning to what they're learning in class.

In instances in which I asked questions about a specific occurrence in a chat, the teacher or professor always stated they were trying to get the students to understand some particular point. For example, in Dr. Wilson's chat, some of the students were discussing the importance of immediate feedback so that the children are "never confused." Dr. Wilson was questioning them about when immediate feedback might not be desirable. At one point, he became fairly quiet and did not post for a minute or two. When he discussed this with me, he said that his intention was to engage the students in some conversation that challenged their thinking about feedback and that also challenged their notion that students should never be uncomfortable or confused. When he had gotten them talking and had them thinking and asking the questions, he backed off temporarily allowing them to be confused and to think. His goal was to help them see the value that some cognitive dissonance can bring to the learning experience.

Overall, the conversations did tend to get more focused as the semester progressed and the questions and concerns the pre-service teachers raised during these conversations became more sophisticated with time. The next section discusses these changes.

#### *How the Conversations Changed Over Time*

Two data sets were used to examine how the conversations between the pre-service teachers, teachers, and professors changed over time – chat transcripts and teacher, professor, and pre-service teacher interviews. Content analysis was applied to the content of the chat transcripts to achieve this purpose and the constant-comparative method, as well as content analysis, was used on the interviews. The findings from the content analysis of the chats are supported by the participants' comments during the interview process related to the changes they noticed or that they felt occurred in the chats.

Participation on the part of the pre-service teachers in the first chat sessions seemed

tentative at best. This was not unexpected, as experience from the pilot project had shown that chatting with teachers is somewhat intimidating at first for pre-service teachers. Though most of these pre-service teachers had chatted prior to this course, their experiences had been online with friends in a casual venue. Participation in a professional chat was a new experience for them.

Over the course of the semester, the pre-service teachers became more comfortable chatting with the teachers and professors. The conversations flowed more naturally and the content of the conversations became more focused on specific educational issues, as Table 4.4 showed. In the earlier chats, the topics tended to shift quite dramatically and fairly frequently.

By the last chat sessions, one topic tended to be discussed more in-depth and for longer periods of time. The pre-service teachers had more questions to ask about each topic and they were beginning to see the complexities involved in teaching. This was evidenced in the pre-service teachers' ability during the third and fourth chat sessions to discuss one issue while addressing it through multiple lenses, something they were not able to do early in the semester. For example, during the third week of chat sessions, Dr. Allen and Mrs. Walters led a chat that focused on making learning relevant for students. Within this topic, they discussed creating lesson plans based on student interest and needs, meeting the SOL requirements, meeting goals and objectives, and modifying instruction. This is in stark contrast to their first chat of the semester with the pre-service teachers in which they discussed classroom management, block scheduling, 504 plans, IEPs, characteristics of good teachers, knowing your students, interacting with students, what to do when students 'don't get it,' and the importance of reflecting on your teaching – all in 45 minutes. It was quite a whirlwind conversation. This shift toward deeper and more focused conversations was typical across the range of other chats over the semester. Following are two examples of this shift. First is an excerpt from one of the first chats followed by an excerpt from a conversation more typical of the later chats. In this first example, five shifts in conversation topics occurred during a fifteen-minute span of time. The conversation moved from literacy, to connecting with students, to ESL, to limited resources, and finally, to grading. Student 1 > on my sheet it says that your area of expertise is literacy.....i was just curious as to how you define literacy

Dr. Porter > My definition is broad and beyond the usual reading and writing interpretation that is often given

Student 2 > I've got a question...

Dr. Porter > Ok

Mrs. Smith > ok

Student 2 > I just finished watching the Larry Beaudin Case and what I realized was that his ability to connect to his students was amazing. I mean, as far as connecting to them at their level

Dr. Porter > in what way

Steven Tucker > What can you do to prepare yourself, regardless of grade level, to connect with your students

Mrs. Smith > experience

Student 2 > to speak to them on their level, without going overtop of them, or below?

Mrs. Smith > each class is different

Dr. Porter > I always think that observation of your students is critical and knowing children I know this is hard for a beginning teacher

Dr. Porter > But paying attention to them and listening is important

Mrs. Smith > you learn as you go - like developing a relationship with anyone

Student 3 > I have a question for Dr. Porter. I understand that you have taught ESL and I am thinking of doing that also do you find that more...

Student 3 > difficult than teaching in a regular classroom environment?

Dr. Porter > no you are just working to develop literacy in a different way and you develop a range of strategies to help you..

Student 3 > what are some of your strategies?

Dr. Porter > a lot depends on the context and whether the children are in the classroom in an inclusion environment or they are in a pull out program

Mrs. Smith > the esl resource teacher in my room concentrates on the content that we think is essential

Dr. Porter > There are some really good texts to help you.. . Actually the video used some strategies that would be good for all learners...

Dr. Porter > for example the cut out visuals... good literature

Student 1 > Dr. Porter I see that you have taught in several countries.....

Student 1 > and i was just wondering, because i'm thinking about teaching overseas, are classrooms set up the same way in other countries

Dr. Porter > Yes each country is different

Student 1 > how so

Dr. Porter > Much depends ...as it does in the states on the political climate... funds ... resources etc

Student 2 > How much stress is created by the limited resources in our schools, at present?

Dr. Porter > Nancy this one is for you

Student 2 > and what methods are best to work around the budgets?

Mrs. Smith > the sol's create more stress than resources . . .

Mrs. Smith > there are various ways to supplement resources, pta, grants . . .

Dr. Porter > Actually if you remember in the video the teacher had very inexpensive resources

Student 2 > Thats, true... however in my mind I have all these ideas about using all accessible media and multimedia

Mrs. Smith > i use very simple resources, no "canned" ones

Student 2 > I really believe that web-based learning and interactive exploration could play a huge role in bettering education, but I just don't see us having the funds to do it

Dr. Porter > [Student 2] depending on where you teach you will see a wide variety of technologies

Mrs. Smith > each school differs in technology available, even in the same system

Dr. Porter > Yes

Dr. Porter > I think you have to be creative and ready to write grants etc as Nancy mentioned

Student 3 > this one is for both you..... do you think the current grading system and standards set hurt the students ability to learn

Dr. Porter > What do you understand about the grading system in place?

Student 3 > i'm just talking about the kids all want to get A's. when they don't some of them feel like they've failed. so i guess my question is...

Student 3 > does giving grades (the official theory of learning), hurt the kids. instead of learning and growing, they just seem to memorize and forget

Student 3 > but is memorizing learning?

Mrs. Smith > the teacher plays a large role in setting the stage for the interpretation of grades

Dr. Porter > It depends on how the classroom climate is established

Student 3 > i see

Student 1 > Yes, when it is associated with practical knowledge... or in association with facts, historical or otherwise

Mrs. Smith > some memorization is essential, some is not

As mentioned earlier, conversations became more focused and issues were discussed in more depth by the end of the semester. Following is an excerpt from a chat from the final chat session of the semester.

Student 1 > in one classroom, do you think it is fair to give, some students one assessment and other students a different more advanced assessment

Mrs. Olson > Absolutely

Student 2 > how do you grade them equally if they get a different assessment?

Mrs. Olson > Every student has the right to learn new material. They won't all come in at the same place.

Student 3 > How do you decide which assessment to give which students??

Mrs. Olson > If you have a high student that pretests already knowing your material to "mastery" level....

Mrs. Olson > then you give work that takes them to another level however, they get an A because they already have mastered that material required.

Mrs. Olson > How do you imagine you would decide on the assessment tools?

Student 2 > Based on their learning level, maybe...

Student 2 > or how advanced they are in the material.

Student 1 > or how much they accomplished out of what they tried

Student 4 > I would do on a learning level also.

Mrs. Olson > Here is a question....

Mrs. Olson > What if you required all students to complete an assessment on a topic by drawing a picture?

Student 1 > but all students can't draw well, they might have to verbally explain the drawing to you

Student 4 > I don't think that would be a good assessment because not all students would have the ability to draw well.

Student 3 > i agree, i don't think that assessment would suit every student

Dr. Dawson > Have you seen me draw? ;-)

Student 2 > It would also depend on what you're assessing them on, their creativity or their artistic ability.

Student 4 > yes, that is what we are building our input off of -haha

Mrs. Olson > so if you require all students to complete the same assessment, say essay answer, then some students wouldn't be able to show you what they learned. Are you testing essay writing or the content?

Mrs. Olson > How could you remedy this problem?

Student 1 > well if it was english maybe, but most likely not always

Student 2 > content would be the main focus

Student 4 > Maybe give them the options to draw or write about the topic.

Student 3 > good point, isn't that why there's different forms of assessments so that some students can excel on some assessments and others can excel on others

Student 1 > give a variety, like mc or t/f, and then maybe an essay

Mrs. Olson > So back to an earlier question, is it fair to use different assessments for different students.

Student 2 > I think so, because different students have different learning styles.

Student 4 > Yes, I think so.>>>>

Student 3 > i think so too as long as all assessments are fair

Student 4 > Everyone is different, so they process and convey their knowledge differently.

Mrs. Olson > And remember.... what is the point of assessment?

Student 1 > yeah, as long as they are based on the same thing and graded equally

Student 1 > to see what students learn

Mrs. Olson > and you want to know what they learned because?

Student 3 > i don't know if this is what you're looking for or not, but assessments can also tell teachers if their teaching is successful

Student 1 > because it's your job as a teacher to make sure they are learning

Student 4 > and that they are learning successfully

Student 2 > and you can't move on to new material until they learn the basics

Mrs. Olson > You guys are GOOOD!!!!

Dr. Dawson > :-)

Mrs. Olson > So you use assessment to plan your next lessons and to learn what was successful and to reflect on teaching practices. Right on!!!

This excerpt also represents a fifteen-minute span of time; however, the topic remained focused on assessment. The remainder of the chat continued to focus on assessment and various issues related to assessment. For example, the conversation in the remainder of this chat focused on motivational types of assessments such as games, assessment as part of the learning process, and the value of learning from mistakes. This is in contrast to the five major topic shifts that occurred in the first example. These examples are very typical of the changes in the nature of the conversations and of the range of conversations that occurred among the groups across the semester.

The pre-service teachers attributed these changes to three main reasons. First, they became familiar with the process and realized it was not as formal and as intimidating as it had first sounded. Second, the students felt they had gained a much broader knowledge base over the course of the semester so the conversations became a little easier to participate in, and third, the pre-service teachers had learned some of the educational “lingo” and were able to be on a more common ground when talking with the teachers.

Those attributions of the pre-service teachers corroborated what the teachers and professors said they noticed about the change in the conversations. All seven teachers interviewed said they had noticed a definite difference in the pre-service teachers’ knowledge base and had noticed that their questions had improved. Six of the eight professors said they noticed that the pre-service teachers asked more questions as time went on and participated more. Three professors said the pre-service teachers’ questions matured. One professor said she did not notice either way and only one professor said she felt the conversations and the pre-service teachers’ questions remained superficial.

The change in the pre-service teachers’ questions, as noticed by the teachers and professors, can be seen in the chat and threaded communications. There is a definite move in their questions toward understanding the complexity involved in teaching as well as a move toward focusing on the needs of their future students instead of a sole focus on their own

concerns as teachers.

In September, the questions the students posed were largely logistical “how to” questions. They were also largely centered on themselves as the teacher of the classroom and they exhibited concerns about how they themselves would function within the classroom. Most of the questions the students asked at this point in the semester centered on concerns over management of the classroom’s activities. For example, “How do I directly prepare a lesson, the most direct route?” “How do you know what rules will work?” “How do you get control of your classroom?” “How can I be fun?” “How can I be interesting?” “Should I practice my lesson plans ahead of time so I don’t have to read from them or is that ok to do?”

These early questions also indicated an unsophisticated view of teaching. That is, their questions did not indicate an awareness of the importance of context in making decisions in teaching nor did they recognize the level of complexity involved in teaching. The questions indicated they believed there is a black and white, right and wrong approach to teaching and that one “answer” would apply to all children in all situations. For example, “What is a strategy to keep all kids motivated?” “What do you do when a child breaks a rule?” “How do you get students to act appropriately?” “How do you keep all of the kids’ attention?” “What are like ten steps to making sure your students learn what you want them to?”

It is also important to note that there were 35% fewer questions during the first round of activities than there were by the third round. Many of the pre-service teachers indicated during the interviews that they could not think of anything they wanted to ask about teaching at first. They also mentioned being afraid of asking a bad question so many of the early questions they had may have gone unasked due to, as one student noted, their fear of “looking inadequate in front of the teachers.”

By December, the pre-service teachers’ questions were more focused on the children than on themselves and they were beginning to recognize the complexity of the classroom, as their questions became more situational. Some of their questions by this point in the semester included, “What do you do to help students who think they can’t do the work?” “How do you keep the kids who may be special ed or those who may be gifted focused or motivated in the classroom?” “How can I make sure my lesson plans allow the students to manipulate the information and give it their own meaning?” Some of their questions became

phrased more in terms of a concern rather than a question. This tended to be the case when they were beginning to understand the complexities in teaching. For example, “It really worries me about how to reach everyone’s needs, meet all the SOLs, and still keep everybody interested and motivated.” “I’ve gotten some really good ideas on how to help children individually, but I’m concerned about having the time to do that for everyone and what do you do with the rest of the class while you’re working with one or two kids?”

Finally, there was also a shift in the pre-service teachers’ questions toward asking questions that helped them connect theory to practice. This first became evident in the third round of activities. For example, “When going over information (distributed practice), is it better for the kids to practice things in similar manners or to practice the material in new and different manners?” “How do you evaluate how different children process information best so as to address everyone’s needs?” “I understand how important depth of processing is in learning something, but how can I make sure my students do this?”

This shift toward thinking about the connection between theory and practice was most evident in the online reflections the pre-service teachers completed after each chat session. At the first of the semester, their reflection comments were largely limited to statements about what they learned from the teachers during the chats. By the end of the semester, they were making connections between the chats, the course work, and their own developing philosophy of teaching.

#### *Reflection in a Computer-Mediated Environment*

Throughout the semester, the students were asked to reflect after each chat session about what they were learning by completing an online reflection sheet. Likewise, during the threaded discussions, their comments were also reflective in nature and were becoming more reflective over time. This was due in large part to lack of teacher and professor participation in the threads. Without that dialogue occurring, bringing with it new ideas and new challenges to consider, the students were in a position to reflect upon and synthesize all that they were experiencing and learning.

This section of the chapter describes the development of the pre-service teachers’ reflective capacities over time. In addition, a Three-Stage Developmental Model of Teacher Reflection and an Analysis of Variance of Within-Subjects Effects was used to examine the change in the levels of reflectivity found in the threaded discussions over the course of the

semester. Comments from pre-service teacher interviews were also used in this analysis.

During the first threaded discussion, the pre-service teachers stated their beliefs and opinions about teaching largely in terms of platitudes like “learning should be fun” or “we need to make learning meaningful for kids.” But these comments usually bore little in the way of actual practice. In reading through them during the first threaded discussion week, Dr. Dawson and I noticed that it seemed as if the pre-service teachers knew the politically correct phrases to use, but did not have a clear understanding of what the comments actually meant or how to apply these notions to practice. They often used a lot of catch phrases, but did not really say anything to let us know they understood what they were saying. For example, during the first threaded discussion session, many of the comments resembled this one:

I think learning is meaningful for children through motivation. The teacher can make learning meaningful by finding something that the children are interested in and somehow tie this into the lesson. Children need to internalize the material and be motivated. If learning seems like a chore to the children, then it is not meaningful. It will bore them. Learning can be made fun and exciting for children. As teachers, we want the children to go home with new knowledge every day and be excited about it. By helping the children to be intrinsically motivated to learn, we as teachers are doing are part to facilitate the learning process.

Another example from the first threaded discussion:

To make learning meaningful I think there are many factors to consider. First, as a teacher you want to have stimulating activities for your students so they are engaged to learn....activities and lessons that are used need to be adaptable therefore interesting and meaningful to all the students.....The best kind of learning happens when the student is intrinsically motivated and wants to learn for their own benefit.

Throughout the course of the semester, the students began to connect the strategies they were learning about in class, and with the teachers, to their own developing philosophies about teaching. Their comments moved from more generic platitudes like the examples above to comments that indicated they were reflecting on their own personal experiences, as well as relating those experiences and their learning to what they believed to be important in teaching. The later comments also portrayed the pre-service teachers’ dawning recognition

both of themselves as teachers and of the complexity of teaching, as well as the recognition that learning to teach is a continuing process. During the second and third sessions, comments in the threaded discussions began resembling these examples below:

When I work with children, I want to do an array of activities so I can, hopefully, reach each child's individual needs in some way or another. I also try to think of my childhood and what I liked. I often find the simplest things to adults mean the world to young children. One of the things I can remember directly from my second grade classroom is that my teacher let us do math problems in shaving cream on our desks.

Another student commented:

I've been thinking back to a lot of my good teachers and noticed or thought about the way they're teaching. They get back their first test and the average is 65%, they don't say, "You all are stupid." They say, "I'm teaching this wrong apparently," so they try to change something. I think back to my good teachers and that's what they were doing. They were always changing and learning themselves.

The guided discovery lesson that Mrs. Beyal used and that prompted the controversy about the first two cases also prompted some of the students to connect this controversy with memories from their own school days. This student recalls her experiences in school as she questions the use of invented spelling:

I had a question that I wanted to throw out to the teachers and my peers. When I was young and learning to spell a guided discovery type method was used. Except I think that my teachers did not pay attention to the guided part. As a young child when we wrote anything, we were told to spell how we (the 5 year old students) thought and were never given any guidance (such as learning about phonics) or corrections to our misspellings. We were given spelling lists, but we only had to memorize how to spell the words, we did not go into any of the phonics of the words. It was not until second grade when the teachers began marking our papers and correcting our spellings. Well, by this time I had invented my own ways to spell things and accepted them as correct, since I was never told otherwise. Is this a good way to teach spelling (as well as other topics) to students? Needless to say, I have horrible spelling skills to this day and am often ashamed of my lack in being able to spell simple words. I believe in guided discovery, but I think the guided part is just as important as the discovery part. I wish that I had been taught some phonics related to spelling and assisted by my teachers to find the correct way to spell things, instead of having my teachers let me think that my misspellings were correct and never teaching spelling through phonics. (Just a note, I talked to my mom to get all this information on how I was taught spelling, as, no, I do not remember all of the details. My mom outwardly opposed the methods they used, but the teachers did not take her concerns into consideration) One reason this concerns me so much is that I am seeing this same method that was used on me being implemented in the classroom situation I am currently observing in!

Hi [Student],

Your question about "invented" or "temporary" spelling is an excellent one, often debated and often misunderstood. After studying research on how children learn to write and spell, you will understand in more detail what I will briefly attempt to explain here.

In K-1 Classrooms and depending on the child's developmental /cognitive level, in second and possibly third, teachers are encouraging beginning writers to understand the functions of text to relay meaning. Just as you would not scold a baby for say, "Da Da", you do not discourage early writers for attempting to make meaningful text in their stories or journal letters to you by constantly correcting spelling errors. There is however a fine line between continuing to accept misspelled words if that particular word has been covered in a previous lesson. This is where students' accountability takes precedence.

In my second grade classroom, I hold most of my students accountable for spelling words easily found on our frequency word list (a list of words most often used in children's text and easy to access in their individual dictionaries) and on Word Wall words (where "sight words" that don't follow phonetic rules are discovered after organizing word tiles to create new words, giving the child "ownership" of that word.)

When writing stories, the spelling errors are addressed during the proofreading cycle, not the rough draft. I gladly encourage my students to use "humongous" over "big", even if the first word is misspelled. I want them to be risk takers in their writing to encourage more interesting stories. [Later we incorporate authentic Dictionary skills as well.]

When spelling is integrated with reading and writing, the "carry over" into future stories is enhanced. We also do weekly spelling lists and phonics lessons. However, I believe you will one day understand that the same list for all students is not very conducive to optimum learning and usually this "short term memorization" test rarely carries over when composing stories.

Hmm. I'm sure this may be confusing. Time and experience will be YOUR best teacher, plus keeping abreast of the latest research in your area of concern (spelling). Teachers are also life-long learners!

Shawna Thomas  
Second Grade Teacher

Another pre-service teacher's comment indicated the recognition of the continuing nature of learning to teach and the importance of understanding context in making decisions:

In reading through the threads that have been posted, it seems that everyone agrees that both direct instruction and guided discovery can be very effective methods of teaching and learning when they are used in the right context. I think that some lessons can be better executed by using direct instruction and other ideas provide an excellent opportunity to incorporate guided discovery. I also feel like much of the planning that goes into teaching is based on trial and error in the beginning, and then as we are able to see what works best under what conditions, we begin to make better decisions on how to approach teaching different topics. By becoming familiar with both of these techniques our teaching inventory is increased and hopefully, we will be

able to incorporate each of these techniques into our classroom successfully so that all the children will have the best opportunity to find meaning in what they learn.

During the interview process, the students commented on the threaded discussions as having the advantage of allowing them to reflect and synthesize all that they were learning. As part of the interview process, the pre-service teachers also completed a brief survey about the activities in which they engaged in during the course (see Appendix M).

These surveys were designed to determine the students' perceptions of the activities as to how helpful they were in helping them learn about educational psychology and teaching. Fifty-eight percent of the students rated the threads as being somewhat helpful to extremely helpful in helping them learn about educational psychology, while 61% of them rated the threads as somewhat helpful to extremely helpful in helping them learn about teaching. However, 74% of the pre-service teachers rated the threads as helpful in allowing them to reflect and synthesize what they were learning.

In order to further analyze and support these findings, a quantitative component was added to the analysis of these data. Each of the posts to the three threaded discussions was analyzed using the Developmental Model of Reflection as a Cognitive Outcome Scale (Crotty, 2001). Crotty developed this scale through the use of several pilot tests in order to test its reliability. The Developmental Model of Reflection as a Cognitive Outcome Scale measures reflection based on the six levels of Bloom's Taxonomy: knowledge, comprehension, analysis, application, synthesis, and evaluation (Bloom, 1956).

Two raters were located and asked to rate each post for each session according to this reflection scale. These raters were trained in the use of the scale prior to evaluating the posts. They were given an example of what a reflective response would look like at each level (see Appendix Q). After receiving the examples to use as a guide, they were given ten threaded discussion posts to rate in order to establish inter-rater reliability. Upon establishment of an inter-rater reliability of .90, the raters were then asked to evaluate each post for each threaded discussion session using the Developmental Model of Reflection as a Cognitive Outcome Scale.

The reflection scores were entered into SPSS and an Analysis of Variance (ANOVA) of Within-Subjects Effects was performed. The Bonferroni post hoc test was used to further assess pairwise comparisons. The ANOVA and post hoc tests were computed based on the

three session means ( $M_{s1} = 1.79$ ,  $SD_{s1} = .12$ ;  $M_{s2} = 2.7$ ,  $SD_{s2} = .14$ ;  $M_{s3} = 4.2$ ,  $SD_{s3} = .21$ ).

The ANOVA of reflection scores found a significant main effect for session of threaded discussions,  $F(2,40) = 76.75$ ,  $p = .000$ ,  $\eta^2 = .96$  (see Table 4.4). A Bonferroni post hoc analysis of the means revealed a significant difference between all three means ( $p < .01$ , for all pairwise comparisons). Results indicated that the pre-service teachers' comments became increasingly more reflective across the semester according to the Developmental Model of Reflection as a Cognitive Outcome (Crotty, 2001) scale. Table 4.5 below presents the results of this analysis.

Table 4.5  
Analysis of Variance for Student Reflections

Source	<i>df</i>	<i>F</i>	$\eta^2$	<i>p</i>
Between Subjects				
Subjects	1	629.35	.96	.000
error	20	(.86)		
Within Subjects				
Session	2	76.35	.79	.000
Error	40	(.43)		

Note. Values in parentheses represent mean square errors.

#### *Domain Two: Learning*

This section answers research question number two: What does each participant group learn from communicating with the other groups? It provides this answer by focusing on what the participants in this study reported learning from their experiences during the interview process and by analysis of the students' KWL documents, reflection sheets, and student surveys. First, the learning of the pre-service teachers is reported, followed by the learning and professional development of the teachers and professors.

##### *Pre-service Teachers' Learning*

The pre-service teachers learned about educational psychology and learning to teach

from three main sources throughout the semester. Those sources were the classroom lectures and activities, the case studies, and the online communication with the teachers and professors. This section of the chapter reports what the pre-service teachers learned from these experiences by first reporting the pre-service teachers' learning from the case studies, the chats, and finally, from the course. This analysis used the interview transcripts as the primary data source and used the in-class tasks, online reflections, and surveys as supporting documentation.

*Learned about educational psychology from cases.* The case studies served two purposes for the pre-service teachers. First, they clarified the concepts that were being studied in the course by serving as an example of the concept or theory under study. Several students noted that the case studies gave life to written theory. For example, some of the comments included, "They were good examples of concepts from class," "They integrated with class information well," and "They were good examples of teachers doing what we're studying."

Secondly, the cases helped the students see how the concept or technique being talked about in class could be used in practice. Students were able to identify and see concepts in action such as reinforcement being used in a teacher's classroom. As one student noted:

It was nice to see the case studies. They practice what they preach, like what we learned in our class. They use a different technique or whatever and it's definitely helpful to see. It's one thing to read it on a paper and be like, well, I'm not really sure how to take that into the classroom, but in the case studies you actually saw it from paper to the real classroom.

*Learned about teaching from cases.* The pre-service teachers cited five main things they learned about teaching from the viewing the video cases. They learned: a) the importance of preparation and planning, b) how to observe and what to look for, c) to give an introduction to lessons and to give good directions, d) management ideas, and; e) how complex teaching is. A few of the pre-service teachers' comments included, "I never knew how much planning went into it," "I think I learned how to handle some of the complexity. I had never thought of teaching as being as complex as it is," "I got a lot of good ideas that will be helpful in my first year of teaching," and "I learned what to see and think about in a teaching situation."

The notion of learning how to observe was the largest category of responses for this question of what they learned by watching the cases, followed by learning about the complexity of teaching. Comments included, “ I liked the CDs for helping us see select concepts. It’s targeted and you’re observing one thing. That’s good because observing is like a process. You learn how to observe over time and this helped me get better at that.” As one student noted:

Our first observation was my second semester of freshman year and we hadn’t really learned anything yet. So they really just stuck us in this classroom and I remember sitting in the back of the class being like what am I supposed to do. It wasn’t a good experience. So, by watching these case studies and seeing what exactly to watch in the classroom like the way they assess and the way they manage the classroom like, that would help me so much more knowing those things to watch for.

Other students mentioned the guidance they received when observing the cases as helpful.

If I had to just watch the video and Dr. Dawson didn’t tell you what it was about at the beginning, I might have had a little more trouble figuring out what it was they were trying to do specifically, but since we were given that at the beginning you just knew to follow along in that suit. And they were definitely effective. That was my favorite part of the class. I really enjoyed the videos.

And finally, “You can really look at the situation and say what is going on here. It’s like not in the moment. You can sit there for however long it takes and look at it and say this is what’s happening here.”

*Learned about educational psychology from chats.* The communication with the teachers extended the discussion of the theory and/or concept by talking about the practical applications in the classroom. It allowed the students to go beyond understanding how the concept was used in the one video to how teachers work with these concepts on a daily basis and allowed them to see there are multiple ways to apply what they were learning. Students cited “exposure to different philosophies” and the “use of the same concept in practice in multiple ways” as what they learned from the teachers about educational psychology concepts. However, the students said they did not feel the chats with teachers were as helpful in helping them learn about educational psychology as they were in helping them learn about teaching. Conversely, the students reported the chats with the teachers as more helpful than

the cases in helping them learn about teaching.

*Learned about teaching from chats.* There were six main areas the pre-service teachers stated they learned about from talking with the teachers. They learned: a) teaching is complex and is “easier said than done,” b) the importance of planning and preparing well, c) how to put concepts into practice, c) management skills, d) the importance of being flexible, and; e) “real” information. This last area, “real information,” included such things as: a) ideas on how to work with parents, special needs students, and administrators; b) general advice and tips; c) educational terms such as IEP, ADHD, SOLs, 504 Plans, literacy circles, and flexible grouping; and, d) the belief that they will learn to teach through experience and practice.

This notion of “real” information was the largest category of responses as to what the pre-service teachers felt they learned from talking with the teachers. In triangulating the data, it became apparent that the idea of obtaining “real” information from the teachers was in the front of their thoughts during the chats. The pre-service teachers often asked questions that related to something they had learned in class, whether it was Dr. Dawson’s class or another class in which they had participated. Throughout the semester as the pre-service teachers asked the practicing teachers questions about their coursework, I viewed this as their attempts to clarify classroom discussions and/or concepts. While this was the case to some extent, it became apparent during the interview process and the ensuing analysis, that these questions were also attempts to verify their university coursework and professors. This first became apparent in the interviews through the pre-service teachers’ descriptions of what they learned from the teachers. Comments such as, “The teachers told us how things really are,” “The teachers told us the truth,” and, “We would ask them about something we learned in class and they would tell us if it would really work or not or how we could modify it some so it would work better.”

The idea of validating what they have learned at the university is evident in the following comments:

It’s just really easy to talk to them because they actually are there and they’ve actually experienced it. I asked one teacher how she assessed in the classroom because I didn’t see it possible to assess each child and talk to each child about their thought processes and everything and she was like, she could do it the classroom and

this is how I manage my classroom while I'm working with each child. So that kind of brought light to me that maybe I could do this in my classroom because before talking to her I didn't see it as possible.

And, this comment from another student:

Mrs. Smith and Mrs. Porter, they were awesome because they were like this is how it really is and this is how what you're learning fits. This is where the theories might have to be thrown out in a certain way or modified and I thought that was really cool because they were real with it because some of the stuff we learn is very practical and then some of it is stuff you need to have in your head to build from and so I thought they were really great to tell us the truth. They were like, yeah, that's not always going to work, but it's great that you learned that or yes, that is what you need to know. I thought they were really wonderful being honest with us and telling us how things were from their classes and what they did.

This theme of validation carried over into the interviews with the professors when they discussed feeling validated by the teachers' comments, as those comments supported what the professors were saying in their classes with the pre-service teachers. As Dr. Dawson commented:

I think the connection with what the students perceive as real teaching is important because I don't think they perceive what we do in higher education as real teaching and no matter what we say or what we do, I think sometimes they think, this is apples, but they're teaching oranges.

Additionally, for the pre-service teachers, this notion of validating their university coursework and their professors' assertions extended into helping the pre-service teachers affirm their notion of what a teaching identity is and build their own identities as teachers. The pre-service teachers affirmed people first and then later in the semester, affirmed ideas and concepts.

The pre-service teachers began the semester by affirming people, the teachers. For example, many of the earlier chat questions focused on how many years the teachers had taught, where they teach, what grade they teach, and direct questions such as this one from one of the pre-service teachers: "Did you find that you used a lot of the theory you learned in college to help you teach or did you learn more by experience?" They were questioning to

identify the teachers' credentials and to understand the teachers' beliefs about the role of the university experience in learning to teach. In a sense, they were validating the teachers.

From the second session of chats on toward the end of the semester, the pre-service teachers' questions were attempts to affirm a teaching identity in a quest to build their own identity as a teacher and to affirm ideas and concepts they were learning about at the university. This involved asking the teachers questions not only about university coursework or about professors' assertions in class, but also about their own personal concerns and/or ideas about what being a teacher means. As one pre-service teacher commented, "When I hear a practicing teacher say, 'Yes, I do it that way,' it kind of validates and reaffirms what I think and gives a different perspective maybe."

Several of the pre-service teachers had questions or concerns about some of the information they had obtained from a few of their courses and were questioning the information's viability in a real life classroom while using the teachers' responses to work toward adopting their own identity as a teacher. For example:

It's just really hard to apply some of the things that they tell us to do. They really are into exploration and building on what children do and there are just specific things you should do and say but they don't get into specifics. They just say, you know, exploration and all these things but they won't specify how to really handle a situation and I think it's kind of vague for us and it really frustrates us, but yet, we still take it for word and say, "Oh, no, this isn't right," or "That isn't right," and we're like oh, no, that's bad. But then once we get into a situation I think it's really hard to apply. Then when I talked to the teachers, they gave us a whole different perspective because they are actually in that position at the moment and they're like that's really hard to do. I mean, our professors, what they teach us, I definitely value. I think it will be very helpful for the children in helping them learn, but I also think a lot of the girls want to teach older grades and a lot of the things they say and do would apply more to preschoolers. So talking to the teachers gave me some specific ideas on what I can do as a teacher in a real classroom. I mean I want to be a nice, comforting, loving teacher, but I also want my class to be well-managed. I just think it can't be as ideal as what some of our professors make it sound.

The pre-service teachers' evolving identities as teachers became more evident during

the interviews when they were asked what they thought being a good teacher meant. They all talked about how their notion of a good teacher was more complex now. Most of them did not say that their idea of a good teacher had changed; rather, they stated that their ideas had evolved. They largely retained their earlier beliefs about good teaching and teachers, but built on them throughout the semester.

The pre-service teachers had been asked on the first day of class in August to list three characteristics of a good teacher. I later asked them, during the interviews at the end of the semester, what they felt the characteristics of a good teacher were now. Their responses on the first day were overwhelmingly geared to the affective nature of the teacher. Out of 47 responses from 27 people, 74% of the responses were affective in nature and 85% of the pre-service teachers stated only affective traits. These responses included that a good teacher is encouraging, loving, understanding, compassionate, patient, considerate, gentle, enthusiastic, dynamic, caring, empathetic, nurturing, and has a good sense of humor and a good personality. Only 15% of the students mentioned that a good teacher should have adequate subject matter knowledge and/or should provide effective instruction. None of the pre-service teachers mentioned the importance of classroom management in any way.

When asked this same question during the interview at the end of the semester, the majority of the pre-service teachers, 45%, still mentioned the importance of the affective traits discussed above, but in addition to this, 31% of them now mentioned the importance of strong classroom management skills. Another 24% mentioned the importance of effective student instruction and subject matter knowledge. As one student commented:

I really do think my characteristics have evolved since the beginning of the semester because there's so many things now that I know go into good teaching, like planning and things going on in the classroom that I never thought about. This is the first class we've had where we've learned ways to teach so I thought it was really neat. I still want to be compassionate, but I think my characteristics now are more in-depth and more specific. Now I think there's more to teaching than just being a good person.

Finally, the pre-service teachers were able to revise their earlier views of what a good teacher was if the teachers confirmed or disconfirmed information the pre-service teachers were relying on to take the stance they were taking. The vast majority of the time, the teachers confirmed or validated the pre-service teachers' professors and their university

coursework. Even when this confirmation contradicted a belief held by one of the pre-service teachers, the pre-service teachers readily changed their view and accepted the confirmation from the teacher because “s/he was a teacher.” For example, the student above mentioned feeling frustrated by the inability to apply what she was learning in her coursework to classroom practice. She felt that chatting with the teachers validated her concern that some of the information she was learning was idealistic. In this instance, the pre-service teacher felt the teachers validated her already held opinion and thus, her opinion was solidified. However, there were also instances in which the pre-service teachers held a similar concern – that their university coursework or professor was providing idealistic information that would be difficult to impossible to apply in the classroom – and the teacher validated the professor or the course, not the student. Even in these instances, when the pre-service teachers’ concerns or beliefs were not validated by the teachers, and the university was instead validated, the pre-service teachers were able to adapt their view to be in line with that of the teacher’s. For example:

I think it’s just really easy to talk to them because they actually are there and they’ve actually experienced it. I asked one about how she assessed in the classroom because I didn’t see it possible to assess each child and talk to each child about their thought processes and everything for like a lot of lessons and she was like, “Well I can do it in the classroom and this is how I manage my classroom while I’m working with each child” so that kind of brought light to me that maybe I could do this in my classroom because I didn’t see it as possible before.

*Summary of pre-service teachers’ learning.* When I asked the pre-service teachers what they felt they had learned overall from across the range of activities throughout the semester and from the course overall, they stated they had learned mostly about classroom management, about the complexity of teaching, and about a variety of teaching methods. They stated the knowledge they had gained about classroom management would be the most helpful to them as beginning teachers, as well as what they had learned about the need to be flexible and to use diverse teaching methods. The following quotes are examples of what the pre-service teachers said they learned from these experiences:

I know I’m going to have to do a lot with classroom management and planning and instructional design. I did think all you had to do was go in there, be somebody’s

friend and teach them along the way. I wasn't really thinking of all the planning that you have to do and the preparation that you need to go through to be good on a daily basis.

And finally, this comment from another student:

When I first started class it was like this teacher here was a good teacher because they did this and they did that and they got this kind of student response. I just saw what I liked about them as a student, but now I can look at what they're actually doing that I should like. It's like before I could like or not like a teacher from a student point of view, but now I like or don't like a teacher from another teacher's point of view.

To support these interpretive findings, the pre-service teachers completed a brief survey during the interview. This survey asked the students about the helpfulness of each activity they had participated in related to their participation in the online learning community – the cases, chats, and threads. The students rated each activity on a scale of one to five, as to its helpfulness in learning about educational psychology and its helpfulness in learning about teaching, with five indicating the highest degree of helpfulness. Table 4.6 on the following page presents the mean responses of the students as related to the helpfulness of each computer-mediated activity, first, in learning about educational psychology and then, in learning about teaching. Table 4.7, also on the next page, presents the mean responses of the students as related to the helpfulness of the course in helping them learn about educational psychology and teaching, as well as the perceived helpfulness of the overall experience of the course. Finally, Figure 4.3 on page 116 provides a visual representation of these findings.

These findings do support the interpretive interview analysis. According to the mean responses on this survey, the pre-service teachers found the case studies to be similarly helpful in learning about educational psychology and teaching, with the cases being rated slightly higher in helping them understand educational psychology and the chats more helpful in learning about teaching than in learning more about educational psychology. The threads were ranked significantly lower in helping the students learn about educational psychology and teaching, but were ranked higher for their ability in helping the students reflect and synthesize course material. The overall rating of the educational psychology Course indicates the pre-service teachers rated the course very highly in overall learning.

Table 4.6

## Perceived Helpfulness of Computer-Mediated Activities

*Educational Psychology*

Activity	N	Mean Score	Std. Deviation
Case Study	26	4.4	.47
Chats	26	3.7	.86
Threads	26	3.0	1.0

*Teaching*

Activity	N	Mean Score	Std. Deviation
Case Study	26	4.1	.58
Chats	26	4.3	.56
Threads	26	3.0	.95

Based on a scale of 1 to 5 with 1 being the least helpful and 5 being the most helpful

Table 4.7

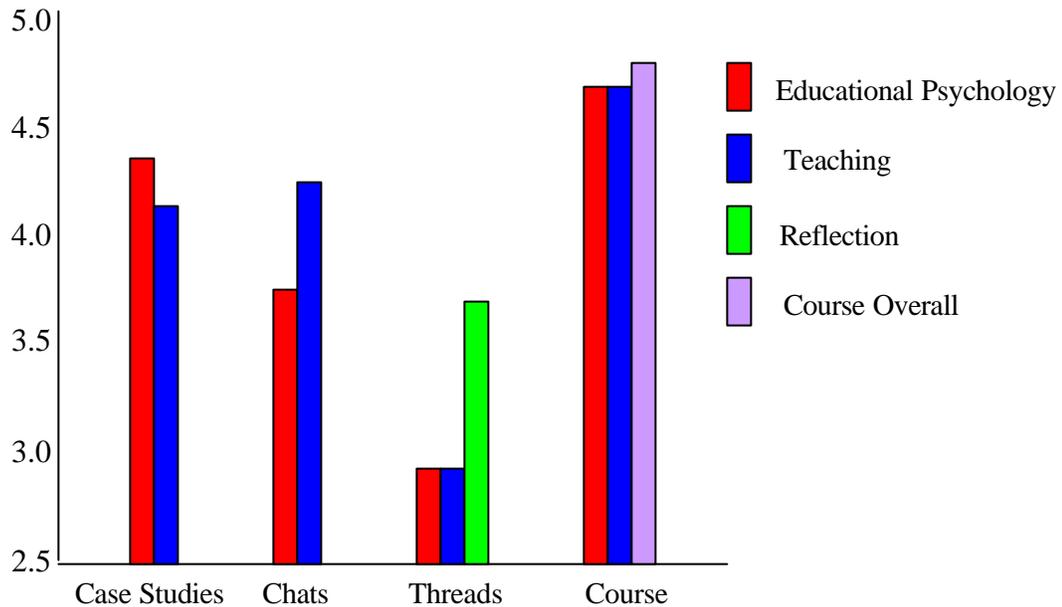
Perceived Helpfulness of Course Overall  
in Learning about Educational Psychology and Teaching

*Course*

Content Being Learned	N	Mean Score	Standard Deviation
Educational Psychology	26	4.8	.40
Teaching	26	4.8	.36
Course Overall	26	4.9	.32

Figure 4.3

Students' Ratings of Perceived Helpfulness of Course and Computer-Mediated Activities



These findings also corroborate earlier findings from the pilot work. The class lecture introduces and explains the concept or theory under study, the case study provides an example and/or clarifies the concept for the pre-service teachers, and the communication with the teachers helps the pre-service teachers expand their understanding of the concept through discussion of classroom applications of the concept under study. As one student phrased it:

You know, usually you learn stuff, but you don't always apply it. In most classes, you know, they lecture and you're done with it until test time. But this made you use it so the stuff you learned stayed more in the forefront and you weren't able to just kind of push it aside. I thought it was fun. I learned a lot more than I thought I would and it wasn't painful learning it. It wasn't like you were sitting there beating your head into the table trying to learn something. It was easy to follow and you walked out and you knew something you didn't know before. It was kind of cool.

### *Teachers' Learning and Professional Development*

This section focuses on what the practicing teachers stated they learned by communicating with the pre-service teachers and the professors, as well as how they stated this experience served as a professional development opportunity. Analysis is based on the interview transcripts.

The teachers stated they learned or were reminded about various facets of the process of learning to teach at the pre-service teacher stage. The teachers offered five examples of what they learned. They learned: a) the pre-service teachers' stage in the process of learning to teach, b) the amount of enthusiasm pre-service teachers have, c) how idealistic the pre-service teachers are, d) pre-service teachers refer back to how they were taught, e) pre-service teachers need practical experiences. One of the teachers stated that this experience had enabled her to work better with her student teacher because it allowed her to see what areas her student teacher might need more guidance with. Talking with the pre-service teachers reminded her that she should not assume what the student teachers know or do not know. As she stated, "It's easy to forget just how much of a beginner they are."

The teachers also stated that this was an enriching professional development experience for them. The most common statement was that this served as a reflective opportunity for them to think about their practice. All of the teachers interviewed commented that the pre-service teachers asking them about what they do and why they do it made them think about their own practices and the reason behind them. As Mrs. King noted:

Our days go by so quickly and we're so busy, we don't get a lot of time to think about and reflect on what we do. Talking with the pre-service teachers gave us this opportunity and it was nice to know that while you're thinking about your own practice and how you can improve, you're also helping someone else out.

The second most common response concerning their professional development was that participation in this community refreshed and/or reminded them of ideas they had not tried in a while or generated new ideas for them to try in their classroom. Five of the seven teachers interviewed stated that watching the cases gave them some ideas to try in their own classroom and/or that hearing what the professors had done as teachers also gave them some new ideas.

Other responses included that this experience helped them understand and work with

their student teachers better, that this experience helped them see what kinds of learning are going on at the university in teacher education programs, and several of the teachers mentioned that it made them “feel good” to help someone else. As Mrs. Thomas noted, “Anytime in my career when I’ve helped someone, I’ve always learned something and taken away something from it for myself.”

### *Professors’ Learning and Professional Development*

Seven of the eight professors in this research currently work with pre-service teachers as part of their daily work at the university. For these professors, what they learned was not necessarily new information, but rather, they were reminded of things about pre-service teachers and/or were reminded of the kinds of things they need to do or to talk about with pre-service teachers. One of the professors is not currently working with pre-service teachers, but does have past experience in teaching methods courses.

Most of the professors said they were not surprised at anything the pre-service teachers said during the course of the semester’s communications. They did mention being reminded of pre-service teachers’ naivety and the reminder of how much of a novice they really are. Dr. Dawson said this helped him “refocus on what’s important” and “to look at the students as novices and worry more about teaching them than teaching content.” Five of the eight professors said talking with the pre-service teachers reminded them of the kinds of things they need to be talking about with their pre-service teachers and four of them mentioned being reminded of the need to re-visit topics. Three of the eight professors said they felt like it was a positive experience to interact with teachers and to be reminded of the practice in the field, and five professors also said this experience had encouraged them to try out some of these technologies in their own courses. Dr. Quidley indicated that this experience reminded her of the need for pre-service teachers to learn about classroom management on a continual basis throughout their programs. She is currently working on putting together some items on classroom management into a seminar the pre-service teachers take while they are doing their field experiences.

Finally, six of the eight professors had never participated in a chat before, so the experience of participating in a chat was a learning experience for most of them. Dr. Wilson said his participation had “calmed me down about technology and made me see it’s not so formal and not so rigid or mysterious.” Dr. Brothers said she had never used chat before, but

was now comfortable with it. She said, “I would feel comfortable trying to set one up for my students now.” Dr. Dawson said he wants to use the CDs all the time now and Dr. Allen said she had used threads, but had never tried chats. She said, “ Now, I’m going to use chats. I’d like to get some teachers and get them on chats with my students next year. I’m not afraid to use it now. I think I was afraid before.” Only one professor said she did not learn anything or gain any professional development during these experiences other than experiencing her first chat.

### *Domain Three: Technology*

This section answers research questions numbers four and five: What do participants report as the benefits and challenges of CMC as related to the study of educational psychology and learning to teach? What are the benefits and difficulties of creating and maintaining a CMCL? These questions are answered by reporting the benefits and difficulties the participants reported experiencing, as well as by reporting the technical support person’s comments from the interview process and by sharing my own experiences in setting up and maintaining this community. First, this domain is presented by examining the technology as related to the learning process and then by reporting the issues related to the creation and maintenance of the community. Data sources used in this analysis include pre-service teacher, practicing teacher, professor, and technology support person interviews, as well as interviews conducted with the professors of this educational psychology course and of the educational psychology course in which the pilot work was conducted; researcher’s journal; and field notes.

#### *Using Technology in Teacher Education: Benefits and Challenges of CMC*

There were two types of technologies used in this research. First, CD-ROM based video case studies provided an alternate field experience for the pre-service teachers in their educational psychology course. The second type of technology this research utilized was computer-mediated communication activities, specifically chats and threads. This section first answers research question number four by discussing the benefits and challenges the participants reported in studying educational psychology and learning to teach in a computer-mediated community of learners. Then, the specific advantages and disadvantages of the case studies and of the computer-mediated communication activities as experienced by the participants are discussed.

*Participation in a computer-mediated community of learners.* The benefits and challenges that the participant groups mentioned were somewhat different across the groups depending on what is most salient for each group of people. There was one benefit that was mentioned in all three participant groups and that was having the freedom of “place.” It did not require the teachers to come to campus so it was a way to work with pre-service teachers without having the extra time involved to drive to campus and back home again. It also allowed teachers from across a large geographical distance to participate. The professors mentioned the freedom of place as far as being able to work with the pre-service teachers from their home or office. And, for the pre-service teachers, participation did not require them to come to campus. They could chat from their dorms or their apartments. Beyond the benefit of freedom of place, the other benefits mentioned were particular to specific groups.

The professors mentioned these activities as a possible alternative or addition to live field experiences. Additionally, they stated the validation of their work by teachers and the use of technology in a meaningful way. The pre-service teachers were getting used to using technology as a learning tool while simultaneously learning about teaching. The professors felt this was a good use of technology for the pre-service teachers both to prepare them to use technology in their future classrooms, as well as a tool to help them learn about educational psychology and teaching. As Dr. Wilson commented:

I’m not a big technology person, but I think what you have done is very interesting. Most technology things I don’t get too excited about because my fear is that people are just doing it because it’s there, but I see this as actually a real addition. It’s useful because it doesn’t take away from. It is adding to, because there are so many things people are trying to replace with technology and I think you can’t replace people. Technology’s strength is in enhancing what we already do and allowing us to do more.

Dr. Dawson’s comment provides a unique perspective as the professor of the course. He commented:

I find that this connects them with the explicitly practical and when the teacher says, “I do this,” that’s really where the rubber meets the road and then I think the advantage of this project and the technology is we can go from theory to general practice to specific practice to classroom practice so we’ve got every base covered.

And I don't think we can really do that without the technology. You can't bring in every class period, a classroom teacher and also by doing it in the chats, it pulls it out of my class time, which saves my class time for other things.

The teachers reported the benefit of being connected with the university and being able to help in teacher education. They also liked the fact that they could choose a time to participate that was convenient for them rather than based on an already scheduled on-campus course. The teachers also mentioned that they liked this particular use of technology. They stated they felt it was a convenient and practical, yet meaningful, way for them to be involved in the education of future teachers and to enhance their own professional development as teachers. Mrs. Smith stated, "One of the reasons I do this is it keeps me fresh. It keeps me up on what people are thinking instead of the same old thing. You know, you can get in your own little rut."

For the students, the major benefit was the access they had to experienced teachers. They also cited the benefit of having this as an additional field experience, or for some, the only field experience they have had, at least so far. The pre-service teachers who had already participated in field experiences said they would have liked to have had this experience first because they said it taught them how to observe and what to look for in a teaching situation. They also stated their participation in this community had helped them connect more with the practical side of what they were learning and that this experience had helped them get used to the idea of talking with professionals. Finally, they mentioned that being a member of this community made them feel valued and important. They mentioned feeling very appreciative of the fact that teachers and professors would volunteer their time to talk with them. As one student noted: "It was kind of cool because it was the first time I started thinking about myself as a real teacher talking to other teachers." And, "They seemed interested to hear what the students had to say as much as we were interested to see what they had to say. I really liked the teachers."

The disadvantages of participation in a computer-mediated community of learners that were mentioned were all very similar across all participant groups. The disadvantages mentioned were the lack of personal contact, dependency on the technology to work, and the difficulty of hearing "voice" and of not being able to read body language. The only other disadvantage mentioned was by one of the professors who was uncomfortable stating

opinions without knowing what had gone on in the classroom. This person did not want to say anything to conflict with what Dr. Dawson may be telling the pre-service teachers in the classroom. Since this issue had arisen earlier in the semester, I asked each teacher and professor at the interviews if this was a concern for them. Only this one person was still worried about a potential conflict. The others mentioned the value in multiple perspectives, the need for pre-service teachers to address the complexity of teaching, that is, that there is no one “right” answer, and the opportunities diverse opinions could offer in opening discussions.

There was one facet of the use of computer-mediated communication in general that was seen as an advantage by some and as a disadvantage by others. That facet was the anonymity that comes with talking to others from behind a computer screen. Some of the participants felt that to be a very strong advantage. Some that are shy stated this was a way to talk to others and get and share ideas without having to speak in front of a large group. Others enjoyed the anonymity because they stated they felt more confident in sharing their thoughts and opinions when they weren’t “being seen,” as one student noted. For others, the anonymity was a disadvantage. For some, the anonymity felt too distant and lacked a human quality they felt was necessary for effective communication. The anonymity that made conversations easier and more effective to some, made the conversations harder and less effective for others.

Finally, the professors of the courses in which this research and the pilot work were conducted shared their thoughts on the benefits and challenges of participation in this type of community. Both professors mentioned the same benefit as well as the same challenge. They both suggested that just having the pre-service teachers talking to teachers was a benefit. Dr. Dawson mentioned that it gets the students to think and “allows them to ask questions. It got people chatting in small groups about things that were going on.” Dr. Mason, who worked with me to conduct the pilot work in her section of the course, mentioned access to the teachers as well. She noted:

One of the things about the folks that we had as teachers is they weren’t shy about saying what they thought. I thought that was a really good thing because otherwise I didn’t want them to just be parroting or affirming everything we did in class. I mean that wouldn’t help the students either because that’s not the way real life is.

*CD-ROM based video case studies.* Without exception, each pre-service teacher interviewed stated that the case studies were beneficial in helping them learn about teaching and in helping them understand how to put what they were learning into practice. The most interesting pattern observable in the data is the large number of pre-service teachers, 21 out of 26, who stated that viewing these CDs helped them learn how to observe and what to look for in a classroom field experience. One student noted that, "It's different actually watching a teacher teach than just watching your teacher teach you. It helped me to see how you need to go about doing things."

Many of them also mentioned the benefit in having a professor view the case with them and then talking with them about it. As another student said, "I liked how the case studies were tied to the lecture. That was helpful." And, "It was really helpful the way Dr. Dawson stopped after each clip and discussed it. He would point out stuff for us to look at or watch for and most of the time it was stuff we wouldn't have seen unless he told us to look for it."

The pre-service teachers did not feel there were any major disadvantages to the case studies other than not knowing the context of the lesson. They would have liked to have known information about the school's location in general, what time of the school year the lesson was conducted, and something about the makeup of the students in the class. The only other disadvantage mentioned was that there is no way to ask the teacher questions about his or her lesson when it is over, as you may be able to do in a face-to-face observation.

Another perspective on the benefits and challenges of using the case studies comes from the professors who have used these CDs in their courses. Dr. Dawson, of course, used them during this research. Dr. Mason also used these CDs in her class during the pilot work of this research. Both Dr. Dawson and Dr. Mason mentioned their benefit in providing an example for the pre-service teachers to see. Dr. Dawson mentioned the case studies as providing a richer example than what he would be able to give them either verbally or textually in class. Dr. Mason saw the benefit as being the tangible look at how classrooms operate. The second benefit that both Dr. Dawson and Dr. Mason reported was the opportunity for a structured observation, that they could pick out what they wanted the pre-service teachers to see.

Again, both Dr. Dawson and Dr. Mason mentioned the same challenge in working

with the CDs. That challenge is simply access to the technology and getting everything set up to show the CDs. Dr. Dawson also suggested that the design of the CDs could be improved. He stated, “the most important part is the video and yet it only takes up about 30% of the screen.”

*Computer-mediated communication.* Each pre-service teacher, practicing teacher, and professor was asked during the interviews about the advantages and disadvantages they experienced in their use of computer-mediated communication throughout the semester. For the teachers and professors, the advantages and disadvantages discussed were related both to how the communications supported working with the pre-service teachers, as well as to their own use of the computer-mediated communications. For the pre-service teachers, the advantages and disadvantages discussed pertained to their own learning about educational psychology and teaching. The interview transcripts are the primary source of data for this section of the analysis. First, the perceived advantages of the chats and threads are discussed, followed by the perceived disadvantages of the chats and threads.

All of the participant groups mentioned similar advantages when asked about the advantages of the chats. The advantage of chats that was named most often by the teachers, professors, and pre-service teachers was their synchronicity, their conversational feel and the immediate feedback that provided. For the teachers and professors, the second most mentioned advantage of the chats as compared to the threads, was related to the time commitment. The establishment of a beginning and ending time let them know exactly how much time they would be putting into the effort and the time/date commitment was also a factor in helping them remember to be there. The threads did not have such a specific time commitment and were therefore easier to forget about. As for the pre-service teachers, the second most mentioned advantage of the chats, after their synchronicity, was the access it gave them to information not available in class or texts. They enjoyed talking with teachers. The third advantage the pre-service teachers mentioned is related to the time issue the practicing teachers and professors mentioned, but for the pre-service teachers, the time commitment to them meant it forced them to be actively involved. With such a small number in the chats, it was not easy to be quiet and remain unnoticed.

Whereas all of the participant groups mentioned very similar advantages for the chats, the advantages mentioned for the threads were quite different for each participant group. The

only advantage mentioned in each participant group was that the threaded discussion afforded them time to think about their responses. Beyond that, each group had different thoughts as to the advantages experienced; therefore, each group is discussed separately.

The pre-service teachers stated that participating in the threaded discussion allowed them to reflect on what they were learning and that having to write out their thoughts, comments, opinions, etc. helped them to synthesize all of the information they were learning about educational psychology and teaching. The pre-service teachers also stated they liked having access to everyone's ideas, they liked the fact that the threads were usually more focused on a specific topic, and some of them liked being able to share their thoughts and what they were learning without having to talk in class.

The teachers stated that the biggest advantage of the threaded discussions was that they were more focused discussions and that they could talk about a topic with the students more in-depth. They also liked the freedom in choosing a time that was convenient for them to get to the threads. Finally, the teachers thought an advantage to the threaded discussion was that they tended to be more interest oriented. The pre-service teachers could ask specific questions that they were interested in and the teachers could provide them more specific feedback.

The professors mentioned enjoying the time the threads give you to think before you must post a response or comment. They also thought the threads were a good tool for the pre-service teachers to use to allow them time to reflect. Because teacher and professor participation was so low in the threaded discussions, most of the teachers and professors did not feel comfortable in sharing a lot of opinions about the advantages and the disadvantages of threads because they stated that they did not feel they had used them enough to warrant stating an opinion.

The disadvantages of using chat as a communication tool were also fairly consistent across the participant groups. For example, the issue of the pace of the chats was a disadvantage mentioned by all groups. The nature of conversation in a chat room can be difficult when overlapping comments begin occurring. It can be difficult, especially for the chat leader, to keep up with all the comments and questions being posed by the different members in a chat room. Though student participation in a chat was limited to four students, it was still difficult for some participants to keep typing at the pace necessary to keep the

conversation flowing. The participants were asked to use an ellipsis at the end of a thought to indicate they were continuing to type their response. This was to serve as a signal so that others would wait before posting a new thought. Although this strategy was used and found to be helpful by the participants, there were instances in which the other participants either forgot about this signal or did not notice it because overlapping conversations did occur.

Another disadvantage of the chats that was listed across all participant groups was the lack of being able to read body language and/or emotion. Several of the teachers and professors mentioned that when a stretch of silence would occur, they had no way of telling if the students were confused, aggravated, thinking, or just disinterested because they could not see their faces. This was sometimes limiting for the teachers and professors in being able to judge what to do or say next. The teachers and professors also mentioned the disadvantage of not being able to go into a conversation in any depth due to the limited time frame. Two of the teachers mentioned remembering feeling frustrated because the pre-service teachers had brought up a very good topic that warranted further discussion, but the time frame and pace of the chats did not allow the teachers to address the topic as they felt was necessary.

Finally, the pre-service teachers mentioned that a disadvantage of the chats was that they were offered at a specific time. If conflicts existed with the pre-service teachers' class or work schedule, they were not always able to chat with the teacher and professor with whom they wanted to chat.

The disadvantages of the threaded discussions were again, very consistent across participant groups. The disadvantages that were mentioned the most across all participant groups was that the threads were time consuming to read and respond to, and that there were so many, they were overwhelming and they became redundant. Another disadvantage mentioned by all groups was their lack of a conversational feel. Teachers mentioned the threads as feeling "distant and slow." The pre-service teachers stated the threads were not interactive enough and that they would have liked more teacher and professor participation. Some participants stated they felt the threaded discussion board was set up awkwardly making the conversation confusing and difficult to follow.

When I interviewed the pre-service teachers, I asked them which type of communication they preferred. Eighteen of the 26 students interviewed preferred the chats and eight of the students preferred the threads. For some, it was more important to talk and

receive immediate feedback within the frame of a conversation, while for others it was more important to have time to think about their response. Table 4.8 below summarizes the advantages and disadvantages, as perceived by the participants, of both types of CMC.

Table 4.8

Advantages and Disadvantages of Computer-Mediated Communication Activities

CMC Form	Advantages	Disadvantages
Chats	<p>Synchronous</p> <p>Conversational feel</p> <p>Immediate feedback</p> <p>Beginning and ending time to commitment</p> <p>Access to information not available in class/texts</p> <p>Must be actively involved and participatory</p>	<p>Pace</p> <p>Overlapping conversations</p> <p>Lack of personal interaction</p> <p>Cannot go in depth</p> <p>Time conflicts</p>
Threads	<p>Time to think</p> <p>Provides an opportunity to reflect/synthesize</p> <p>Access to everyone's ideas</p> <p>More focused on a specific topic</p> <p>Able to share ideas with classmates without having to talk in class</p> <p>Conversation could go into more depth</p> <p>Freedom in choosing the time to participate</p> <p>More interest oriented</p>	<p>Time consuming</p> <p>Too many to read</p> <p>Redundant</p> <p>Lack of conversation feel – not interactive</p> <p>Discussion board set up awkwardly so conversation was difficult to follow</p>

*Creating and Maintaining a CMCL*

This section of the chapter answers the fifth and final research question by discussing the challenges of creating and maintaining an online community of learners. Setting up the community requires a good deal of planning and organization from eliciting teachers and professors to participate in the community, to the training and preparation of all the members, to the ongoing activities involved in keeping the community operational. The specifics as to how these tasks were organized and accomplished was discussed in an earlier chapter and the

benefits of the establishment and participation in the community were discussed earlier in this chapter, so this discussion focuses on the challenges to consider when creating and maintaining a computer-mediated community of learners. Data sources for this analysis include my researcher's journal and field notes.

The first challenge is simply the workload involved in preparing the community and its participants. I spent approximately six weeks in the summer preparing and planning this research, ordering materials, getting the website operational, and communicating with the participants. I think this workload was heavier for me than it will be the next time I do this research because I know more about how to plan and what needs to be accomplished. Also, all of the teachers and professors whom I asked to participate again in the future have agreed to participate, with one exception. One of the teachers who participated in the pilot and in this research will not be able to continue due to mentoring responsibilities she has taken on within her own school system. Since these teachers and professors have already participated, they will not need to be trained again.

The facet of this research I found the most challenging was the implementation of the online community in someone else's class. While Dr. Dawson and Dr. Mason were both supportive, encouraging, and inviting of this research in their classrooms, I felt an enormous amount of responsibility for making the project a positive learning experience for the pre-service teachers, as well as a positive experience for the teachers and professors involved. I felt every mistake or misstep on my part would be an infringement on the participants and on the professors of the course. That is a huge responsibility to bear and though I think this challenge will be somewhat easier when the research is conducted within my own course, that challenge will always be present to some degree, and actually should be present.

Another challenge involves walking the line between keeping the participants well prepared for the activities and giving them so much information that they may dread opening up their email, lest there be another message from me. I sometimes worried that the emails necessary to keep the community operational would become an overload on the teachers and professors. At the same time, I did not want any of them to feel uncomfortable or ill prepared for the next task at hand.

Finally, the last challenge simply involves working with technology. Technology is a wonderful tool that has afforded us many opportunities, but it can also be unwieldy and

frustrating at times. All teachers know they must have a Plan B and often, a Plan C and D as well. One of the major problems in working with technology is that it is often difficult, if not impossible, to have a Plan B. When the technology does not work, no amount of careful planning and preparation matters. Nothing can be accomplished until the technology works. While we had very few technological glitches in this research, the challenge remains of trying to prepare for potential technological glitches and devising that Plan B.

### *Suggestions for Improvement*

Each participant that was interviewed offered suggestions for how he or she felt this project could be improved. There were striking similarities across all the participant groups as to how they felt this improvement could occur. The suggestions that were offered multiple times across groups include: a) group the threads by grade level or content area, b) have multiple forums on the discussion board with no more than five students in each forum, c) assign one teacher or professor to be the mentor of that threaded discussion group for the semester, with as close a match to their area of expertise as possible, d) have the teacher reception at the beginning of the semester so everyone could meet before the activities begin, e) help the students prepare for the chats by helping them develop questions, f) show the participants a sample chat so they will be more familiar with what may occur, g) include chats as part of their student teaching experience, and; h) provide the teachers and professors a synopsis of what is happening in the classroom.

The pre-service teachers had some suggestions specifically related to the use of the case studies. They would like to: a) view and analyze the same case several times looking for different things each time, b) view a CD that shows the first day of school, c) view CDs that track the same class through one whole year, and; d) separate the elementary and secondary students into different classes so the cases could be more focused on each group's particular needs.

There were other suggestions that were offered once by various participants. These suggestions include: a) figure out how to make this more manageable so it does not require so much time spent in planning and organization, b) invite the teachers to the classroom so it is not a chat, c) provide a clearer focus on whether the chat leader should function as a resource person or as a facilitator, and; d) instead of homepages, provide a Word document with thumbnail photos of all participants and a brief description next to their picture.

## Chapter 5

### SUMMARY, CONCLUSIONS, AND IMPLICATIONS

The purpose of this study was to investigate the benefits and challenges of participation in a computer-mediated community of learners (CMCL) that was formed in an educational psychology course for pre-service teachers. This research explored the experiences of the participants involved in the CMCL as they studied, learned, and talked about teaching through the use of CD-ROM based video case studies and computer-mediated communication.

Twenty-seven pre-service teachers, eight practicing teachers, and eight university professors participated in this study. The study involved collection of data through interviews with the teachers, professors, and pre-service teachers who participated in this community, as well as through an interview with the technical support person and the professors of the educational psychology class. Further data was collected through observations, field notes, and documents. Data analysis began during data collection in the form of theoretical and analytical memos and concluded upon completion of the analysis of all documents, interview transcripts, and field notes.

The research resulted in answering the five research questions framed within the three major domains of data – communication, learning, and technology. A discussion and summary of the findings organized around the three major domains of data reported in this research and their relation to the theoretical framework of this study, Situated Cognition, are first shared in this chapter. Following this discussion and summary, conclusions and implications are drawn and directions for further research are suggested.

#### *Discussion and Summary of Findings*

Teaching can be an isolated activity where the practice of it is set apart from others (Little, 1985; Lortie, 1975). In these instances, it can be difficult for new members of the profession to learn how to participate within the community of practice. However, “CMC can be used to optimize pre-service education by enhancing meaningful pre-service experiences and giving teachers knowledge and confidence about using these tools in their classrooms” (Schrum as cited in Mason, 2000). The use of CMC in this research situated the pre-service teachers in the context of their new community of practice and provided them

access to more experienced others within that community. This research studied the use of computer-mediated communication in the context of an online learning community through the lens of Situated Cognition.

The Theory of Situated Cognition was used as the theoretical framework for this research given its focus on the social and situated nature of learning. As stated in chapter two, the Theory of Situated Cognition (Brown, Collins, & Duguid, 1989) encompasses three conceptual themes, which have been used to develop the Situative Perspective in teacher education (Borko & Putnam, 1996; Putnam & Borko, 2000). Those themes are: (a) learning is situated in particular contexts, (b) learning is social in nature, and; (c) learning is distributed across the individual, other persons, and tools. The major assumption of situative theorists is that learning is always situated in practices and that it is developed through interactions and activity with others. Following is a summary of the findings framed within the three major domains of data.

#### *Domain One: Communication*

This domain of data answered research questions numbers one and three: What is the nature of the on-line conversations and how do they unfold over time within a session and across a semester? and, How is reflection supported and/or constrained in a computer-mediated learning environment?

*Nature of the online conversations.* The chat room conversations typically followed a general pattern of welcoming pleasantries and social remarks followed by the discussion and question/answer formats, and finally, closure. The CD-ROM based video case studies seldom served as the sole focus of the online chats; rather, they more frequently served as a conversation starter to get the discussions going and then the conversations moved toward the interests and questions of the participants.

The nature of these conversations evolved from an interaction among classroom events, the case study that had been viewed, and the participants. Three types of interactions among the participants influenced the nature of the conversation: a) the role the teacher and professor saw themselves as fulfilling in the chats, b) the interaction between the teacher and professor, and; c) the goal(s) the teacher and professor had for the chat.

*How the conversations changed over time.* The participants' comfort level with the technology and with the notion of chatting grew stronger across the semester. The chats

became more conversational in tone and more focused on specific educational topics as the pre-service teachers gained a broader knowledge base and wider vocabulary of educational terms. The nature of the pre-service teachers' questions changed over the course of the semester as well. Their questions showed growth toward understanding the complexity involved in teaching as well as a move toward focusing on the needs of their future students instead of a sole focus on their own concerns as teachers. Finally, there was also a shift in the pre-service teachers' questions toward a focus on connecting theory to practice.

*Reflection in a computer-mediated environment.* Throughout the course of the semester, the students began to connect the strategies they were learning about in class, and with the teachers, to their own developing philosophies about teaching. Their comments moved from more general platitudes to comments that indicated they were reflecting on their own personal experiences, as well as relating those experiences and their learning to what they believed to be important in teaching. Further, the students indicated that the threaded discussions allowed them to reflect and to synthesize all that they were learning. Results from an ANOVA Test of Within Subjects Effects indicated that the pre-service teachers' comments became increasingly more reflective across the semester according to the Developmental Model of Reflection as a Cognitive Outcome (Crotty, 2001) scale.

#### *Domain Two: Learning*

This domain of data answered research question number two: What does each participant group (i.e., pre-service teachers, practicing teachers, university professors) learn from communicating with the other participant groups?

*Pre-service teachers' learning.* The case studies served two purposes for the pre-service teachers. First, they clarified the concepts that were being studied in the course by serving as an example of the concept or theory under study. Second, they helped the students see how the concept or technique being talked about in class could be used in practice. The communication with the teachers extended the discussion of the theory and/or concept by talking about the practical applications in the classroom. These discussions allowed the pre-service teachers to go beyond understanding how the concept was used in the one video to how teachers work with these concepts on a daily basis and allowed them to see there are multiple ways to apply what they are learning.

The pre-service teachers found the case studies to be similarly helpful in learning

about educational psychology and teaching, with the cases being rated slightly higher in helping them understand educational psychology and the chats more helpful in learning about teaching than in learning more about educational psychology. The threads were ranked significantly lower in helping the students learn about educational psychology and teaching, but were ranked higher for their ability in helping the students reflect and synthesize course material.

*Teachers' learning and professional development.* The teachers stated they learned or were reminded about various facets of the process of learning to teach at the pre-service teacher stage, specifically how much of a novice they are and their need for practical experiences. The teachers also stated that this was an enriching professional development experience for them by affording them an opportunity to be reflective and to think about their practice. They also stated that participation in this community refreshed and/or reminded them of ideas they had not tried in a while or generated new ideas for them to try in their classroom.

*Professors' learning and professional development.* For the professors, what they learned was not considered necessarily new information, but rather, they were reminded of things about pre-service teachers and/or were reminded of the kinds of things they need to do or to talk about with pre-service teachers, specifically the need to revisit topics like classroom management throughout their programs. Several of the professors mentioned that their participation in this community had familiarized them, and made them more comfortable, with this use of technology in the classroom. Six of the eight professors had never participated in a chat prior to this experience. Four of the professors indicated they will now try chat and/or threaded discussion with their students as a result of their participation in this experience. Only one professor said she did not feel she had gained anything from her participation in this community beyond participation in her first chat.

### *Domain Three: Technology*

This domain of data answered research questions numbers four and five: What do participants report as the benefits and challenges of CMC as related to the study of educational psychology and learning to teach? And, what are the benefits and difficulties of creating and maintaining a CMCL?

*Benefits and challenges of CMC.* The benefits and challenges that the participant

groups mentioned were somewhat different across the groups. All groups mentioned freedom of place as one benefit. Beyond that, benefits of participation were different across groups. Benefits mentioned by professors include: a) possible alternative or addition to live field experiences, and; b) use of technology in a meaningful way. For teachers, benefits included: a) being connected with the university and being able to help in teacher education, and; b) being able to enhance their own professional development as teachers. For students, benefits mentioned included: a) access to experienced teachers, b) additional field experience, c) connection to the more practical side of what they were learning, and; d) being a member of this community made them feel valued and important.

Challenges of participation in this community were largely consistent across the participant groups. They included: a) lack of personal contact, b) dependency on the technology to work, c) the difficulty of hearing “voice” and of not being able to read body language, and finally, a challenge for the practicing teachers and professors; d) not knowing the context of the classroom discussion. The notion of anonymity was mentioned as a benefit and as a challenge by various participants. While some participants enjoyed the anonymity afforded to them in a computer-mediated environment and felt it allowed them to speak more freely, others felt the anonymity was a hindrance to having a good conversation.

*Challenges in creating and maintaining the CMCL.* There were four main challenges involved in creating and maintaining this online community of learners. They were: 1) the workload involved in preparing the community and its participants, b) implementation of the online community in someone else’s class, c) walking the line between keeping the participants well prepared for the activities without overloading them with excess information, and; d) working with technology.

#### *Conclusions and Implications*

The importance of providing an array of learning strategies and tools for our students has long been an accepted and valued practice in education. We recognize all learners as having different interests and strengths and coming to us with different needs and goals. Technology is one more tool to help us provide a rich array of experiences for our students. This was not a comparison study of media formats like those that have pervaded the research literature every time a new technology presented itself since World War II (Clark, 1983). I do not see technology as ever replacing human interaction, nor would I want it to, but I do

see technology supporting what we already do in new ways. In this instance, technology supported the development of an online community of learners that honored the assertions of the Theory of Situated Cognition.

Following is a discussion of the conclusions that can be drawn from this research and the implications they have for teacher education. Conclusions are drawn from within each domain of data as they relate to answering the research questions and their corresponding implications are offered.

*Communication Domain: The Social Nature of Learning*

Vygotsky (1978) argued that student learning and development cannot be adequately understood without social context. Computer-mediated communication may have an important role to play in providing such a context. Computer-mediated communication fosters not only communication within a broader population than ever before possible, but it also allows populations of people to come together and build a social context with communication that has not heretofore been able to exist.

Data within the Communication Domain was analyzed to answer the research questions pertaining to the nature of the conversations and how they changed over time, as well as to answering how CMC may support or constrain reflection. Four conclusions can be drawn from the findings within this domain. They are: 1) the CD case studies and chats provided a social opportunity that helped the pre-service teachers connect their theoretical and conceptual learning with practical applications, 2) social interactions (i.e., chats) among the participants provided a form of scaffolding and legitimate peripheral participation for the pre-service teachers that engaged them in their community of practice, 3) the use of text-based computer-mediated communication allowed for the distributed nature of shared knowledge among the participants, and; 4) threaded discussions provided a reflective opportunity for the participants that also allowed them to synthesize their learning. A discussion of each of these conclusions along with the implications they have for teacher education follow.

*Connecting theory to practice.* In this research, technology supported the use of CD-ROM based video case studies in the university classroom. These case studies created a social opportunity for the professors, teachers, and pre-service teachers to communicate. These case studies not only helped the pre-service teachers comprehend the concepts and

theories being taught to them in their educational psychology course as they saw them used in practice, they also provided a forum for discussion from which the teachers, professors, and pre-service teachers could continue the focus on the use of those concepts and theories in practice in multiple ways and in multiple contexts.

An implication for teacher education that can be drawn from this conclusion is the importance of opportunities for concrete concept development. If learning to teach is a developmental process as the literature review for this dissertation suggests, then early experiences should be concrete in nature (Piaget, 1970), explicitly helping the pre-service teacher to connect the abstract with the concrete, or the theoretical with the practical.

*Scaffolding and legitimate peripheral participation.* Technology was used as a tool to provide pre-service teachers early access to their community of practice and access to more experienced others who would help scaffold their learning and help them understand the practical applications of that learning. Perhaps most importantly, technology allowed these pre-service teachers access to the social context of the profession within which they are preparing to become full participants. This social context was a vital component in helping these pre-service teachers connect the theory and concepts they were learning in the university classroom to the practical applications of those theories and concepts in the K–12 classroom (Collis & Heeren, 1993).

The implication from this conclusion concerning the importance of the social context involves the necessity of allowing student learning to be active and involved while offering opportunities for guided participation (Reiman & Sprinthall, 1998). This conclusion highlights the notion of situated learning. It is important that pre-service teacher learning not be set apart from the context of its use (Borko & Putnam, 1996; Putnam & Borko, 2000). Practical experiences and participation in field-based activities are vital components in the process of learning to teach (Reiman & Sprinthall, 1998; Shulman, 1992).

*Distributed knowledge.* This use of text-based computer-mediated communication had the advantage of allowing that communication to be in a “publishable” format, to allow others access to their colleagues’ thoughts and opinions, again contributing to the social nature of learning through socially constructed shared knowledge. On a more individual level, written communication also had the advantage of helping the author make tacit knowledge explicit as he or she sorted through thoughts in the effort to commit them to

paper. As Koschman, Kelson, Feltovich, and Barrows (1997) suggested, the process of articulating and sharing thoughts and ideas enhances retention, clarifies one's position, and allows knowledge to be evaluated in light of new knowledge from others. These notions of access to others' thoughts and of making tacit knowledge explicit were both mentioned by the participants of this research as benefits of participation in the computer-mediated community of learners. As one student commented:

You had to really have an understanding of what you had learned so you could write about it. You had to really reflect back on what you discussed in class. It made you think about your personal experience with the information you had in class. So I think it was more beneficial, personally, than the discussion part in class.

Implications for teacher education include the importance of social interactions and dialogue with peers and colleagues to provide access to distributed knowledge. However, the importance of individual time to think and sort through thoughts is also inherent in this conclusion. The value of writing down thoughts and reflections is another implication for teacher education (Angeli, Supplee, Bonk, & Malikowski, 1998; Irvine, 2000). Just as Salomon (1993) asserted, the individual cannot be removed from the distribution of shared knowledge. Through social interactions and shared dialogue, individual knowledge becomes public and enhances the distributed nature of learning.

*Reflection as a social-professional activity.* Closely tied with these advantages of written communication was the important part reflective opportunities played in this research. All three participant groups mentioned the value of reflection in this experience. For the pre-service teachers, it helped them synthesize and understand all the information they were learning. For teachers and professors, it allowed them to reflect on their own practice while sharing it with others.

Schön (1991) argued that reflection is a social-professional activity in which knowledge is adapted to specific situations. The participants of this research communicated and reflected in just such a way. Throughout the semester, the pre-service teachers had several opportunities for reflective thought including online reflections that were completed after each chat session and threaded discussion conversations the week following the chats. Interpretive analysis showed that as the semester progressed, the pre-service teachers reflected on their own personal experiences and became more and more able to connect these

experiences with the strategies they were learning about in class, and with the teachers, to their own developing philosophies about teaching.

Additionally, a quantitative analysis using an Analysis of Variance (ANOVA) of Within-Subjects Effects was performed on the reflective nature of the threaded discussion posts. This analysis revealed that the pre-service teachers' comments became increasingly more reflective across the semester. The scale used in this analysis, A Developmental Model of Reflection as a Cognitive Outcome (Crotty, 2001), suggested a view of reflection in teacher development that indicates higher levels of reflection as related to increasing cognitive outcomes. In this way, the increasing nature of the pre-service teachers' reflective comments can be viewed as an example of their growth in learning about teaching.

This conclusion implicates the importance of providing ample opportunities and time to reflect on new learning in teacher education courses (Grossman, 1989). Moreover, it is important for the pre-service teachers not only to reflect on what they learned, but on how they will use it as well, again connecting their new knowledge with its applications (Valli, 1992). As Brubacher, Case, and Reagan (1994) asserted, reflection is undertaken to guide future action. Additionally, these reflective opportunities should be ongoing and sustained (Calderhead & Robson, 1991; Richardson, 1996). This research demonstrated the growth in the pre-service teachers' reflective capacities over time. This was accomplished through offering repeated and multiple opportunities for reflection. Finally, some, not all, reflection opportunities occurred within a shared environment, allowing access to others' thoughts, perceptions, and ideas. This reflection in a shared environment provided another opportunity for the distribution of knowledge and learning (Belenky, Clinchy, Goldberger, & Tarule, 1986) and contributed to the pre-service teachers' learning about teaching and educational psychology.

#### *Learning Domain: Situated in the Context*

For the pre-service teachers, learning was situated within the social context of its use (Borko & Putnam, 1996; Putnam & Borko, 2000) as they communicated, talked, and learned about teaching with their more experienced colleagues (Lave & Wenger, 1991). The pre-service teachers were able to make connections from their college coursework to the application of what they were learning in the classroom through communication and guidance from more experienced others. Theory and practice came to have a connection for

these pre-service teachers. The case studies provided an example of the theory or concept under study in the educational psychology course and the discussions with the teachers helped expand the pre-service teachers' understanding of the concept through discussion of classroom applications.

Data within the Learning Domain were analyzed to answer the research question pertaining to what each of the participant groups learned from communicating with each other. Five conclusions can be drawn from these findings. They are: 1) the pre-service teachers validated their university professors and coursework through dialogue with the teachers and felt they were obtaining "real" information, 2) the pre-service teachers sometimes perceived or interpreted teachers' comments in ways that may have been distorted, 3) the novice pre-service teachers viewed the same teaching situation drastically different than the practicing teachers and professors did, 4) teaching with the CD case studies taught the pre-service teachers how to observe a teaching situation, and; 5) communicating with the pre-service teachers through the use of computer-mediated communication proved to be a valuable professional development experience for the teachers and professors. Each conclusion is discussed next along with its corresponding implication for teacher education.

*Validating university experiences.* There was an emphasis in the interviews with the pre-service teachers in which they indicated their appreciation for getting "real" information from the teachers (Smylie, 1994). The practicing teachers' affirmations of the university professors' assertions about teaching and learning, as well as their affirmations about the importance of what the pre-service teachers were learning in their coursework, validated the university experiences in the eyes of the pre-service teachers. When the practicing teachers confirmed or disconfirmed a strategy, practice, or pedagogical concept, the pre-service teachers accepted it as the "truth."

An implication that can be drawn from this conclusion is the important place practicing teachers could have in the preparation of future teachers (Reiman & Sprinthall, 1998). Extremely rarely did any of the teachers not support or verify the importance of what the pre-service teachers were learning. There was very little, if any, disconnect between what the pre-service teachers were being taught at the university with what they were hearing from the teachers, but it bore more weight with the pre-service teachers when the teachers

said it rather than when the professor said it. Teachers and professors could be very strong allies in preparing future teachers and affecting change from within.

*Role of prior beliefs in interpretation of experiences.* While the debate over the university's theory versus the schools' practice is an old one (Darling-Hammond, 1989; Lucas, 1999), what is unique here is that while there was little to no disagreement between the teachers and professors about effective pedagogy or learning theory, the pre-service teachers tended to interpret the teachers' comments in ways I did not always interpret the same way. For example, when one of the teachers answered a pre-service teacher's question about how to motivate learners and how to best get to know them, the teacher stated that it is different with each group and that the experience you have with them will determine what you do. The pre-service teacher reported on her KWL sheet that the teacher told her she would "only learn to teach by experience." This may indicate that there is not as much of a division between the teachings of the university and the practice of the schools, but that novice teachers are filtering their learning through their own prior experiences or belief systems (Feiman-Nemser, 1983; Feiman-Nemser & Buchman, 1989; Pajares, 1992; Putnam & Borko, 1997; Resnick, 1991; Richardson, 1996; 1999; Ross, Johnson, & Smith, 1991; Zeichner, 1986) and are therefore interpreting teachers' comments and/or practices as other than what they may really mean.

This conclusion implicates the importance of making pre-service teachers aware of their prior conceptions and beliefs about teaching and learning to teach (Borko & Putnam, 1996; Feiman-Nemser & Buchman, 1989; Hollingsworth, 1989; Kagan, 1992; Richardson, 1996; 1999; Zeichner, 1986). It is a commonly heard argument, even outside of educational circles, that university methods courses are not always the most helpful experience in learning to teach (Cochran-Smith, 1991; Corley, 1998; Goodlad, 1994; Nagel & Driscoll, 1992; Wideen, Mayer-Smith, & Moon, 1998). It is possible that pre-service teachers are coming in with these conceptions already grounded in their belief systems making what they expect become what they perceive, thus making this pre-service teacher hear that she will "only learn to teach through experience."

Another implication involves, again, the importance of schools and universities, teachers and professors, working together. Working together may reduce some of the discrepancies believed to exist between schools and universities. For example, the pre-

service teacher who stated she was told she would only learn to teach by teaching, could come back to campus from a field experience and share this statement with her peers or university professor, thus widening the gulf between the university and the school, when this may not have been the case at all.

*Novice/expert differences.* Past research has shown the differing ways that novice and experienced teachers view the same teaching situation (Berliner, 1986; Dreyfus & Dreyfus, 1986; Gonzalez & Carter, 1996; Joelle, 2002; Kerrins & Cushing, 2000; Manning & Payne, 1996; Sternberg & Horvath, 1995). This research was no exception. The differing opinions about two of the case studies between the pre-service teachers on one side and the practicing teachers and university professors on the other, highlights the different ways novice and experienced teachers view the same teaching situation. The teachers and professors liked the second case study, Mrs. Beyal, very well, but the pre-service teachers disliked it greatly. In contrast, the pre-service teachers spoke very highly of the first case study, Mr. Beaudin, in which the students were all seated quietly and raising their hands, as opposed to the teachers and professors who did not like it as well as Mrs. Beyal's. While the teachers and professors did not dislike Mr. Beaudin's direct instruction teaching style, they did not like it as much as Mrs. Beyal's use of guided discovery. The chaos and poor classroom management the pre-service teachers cited about Mrs. Beyal's classroom was viewed by the experienced teachers and professors as good use of group work and the productive noise that comes from children engaging together in problem solving.

The pre-service teachers were working toward understanding the principles of effective pedagogy in this course and toward developing their own identities as teachers as they worked on a teaching philosophy statement. Mr. Beaudin's use of direct instruction and his quiet classroom confirmed these pre-service teachers' identity of a good teacher (Resnick, 1991). Mrs. Beyal's case study confused them. It did not fit with their prior experiences of classrooms and the ten thousand hours of exposure to classroom life they had prior to entering their teacher education program (Lortie, 1975).

This conclusion implicates the important roles that dialogue and interaction with more experienced others in learning to teach have in guiding novices in their learning (Lave & Wenger, 1991). Although the teachers and professors were not entirely able to win the pre-service teachers over to Mrs. Beyal, they did prompt the pre-service teachers to consider

the differing opinions and begin to think about why they felt uncomfortable with Mrs. Beyal's teaching method.

This Beyal/Beaudin controversy again highlights a positive rationale about connecting schools and universities. For example, had the teachers and professors not viewed the Beyal CD, but only heard the pre-service teachers' descriptions of the classroom, they would have thought the pre-service teachers had been exposed to a less than attractive observation experience. Pre-service teachers may indeed be coming back to campus from field experiences with descriptions of classrooms that may not be entirely accurate or that they at least may need guidance in understanding. The role of scaffolding in helping pre-service teachers observe teaching situations ( Beck, King, & Marshall, 2002; Sudzina, 1999) should be duly considered by teacher education programs.

*Guided observation.* Another area frequently mentioned in the pre-service teachers' interviews was the role the case studies played in helping them learn how to observe. The pre-service teachers indicated that when they had been asked to attend a field experience in order to observe, they frequently did not know what to look for or watch. They stated that viewing these case studies with the guidance of the educational psychology professor helped them learn what they should pay attention to in a teaching situation.

The implication from this conclusion is the importance of guiding or scaffolding pre-service teachers' observations of teaching situations (Sudzina, 1999). They need to be guided in what to look for generally in teaching situations, as well as, at times, have their attention focused on specific educational activities to help them learn its practice (Shulman, 1992). Dr. Dawson did not merely show the pre-service teachers the CD case study as an isolated activity, but he guided their viewing. He indicated what to look for, which student to watch for a particular reaction, the importance of a teaching strategy being used and why it was used, etc. This guided observation is largely what made the CDs so effective in helping the pre-service teachers learn the practical application of concepts. This has further implications for traditional field placements. If we are sending pre-service teachers into the field for observations when they do not know what to look for or the importance of what they observe, these field placements may not be as valuable of an experience as we presume them to be. Teacher education programs need to teach their pre-service teachers how to observe before sending them out to do so.

*Professional development opportunity.* Finally, the teachers and professors indicated that this was a professionally rewarding experience in many ways. For some, the value of guiding and supporting newcomers to their field was rewarding. For others, experience in learning to use this type of computer technology in teaching was important. Finally, many of the teachers indicated having the opportunity to reflect on their practice and to articulate that to others was an effective professional development experience.

This conclusion implies that collaboration between schools and universities may not only improve teacher education, but it may also provide professional development opportunities for teachers (Merseeth, 1992). The teachers in this research enjoyed talking about teaching, talking about what they do every day and why they do it. Professors have these types of experiences on a daily basis as they teach pre-service teachers about teaching and as they share their knowledge in articles or presentations. Teachers are rarely afforded the opportunity to engage in professional dialogue (Labaree, 2000). This experience not only proved to be a valuable reflective opportunity for them, but also was an enjoyable experience (Howey, 1988; Wildman et al., 1989). For the professors, this experience offered professional development opportunities in learning how to use forms of computer-mediated communication, as well as in looking at new ways technology may be used in teacher education.

#### *Technology Domain: The Distributed Nature of Learning*

The pre-service teachers' learning was situated in the social context of its use. The use of technology allowed this social context to be broad and inclusive of multiple contexts, contributing to the idea of the distributed nature of learning. The pre-service teachers' learning was not limited to the university classroom and to the information garnered from their professor. Technology allowed their learning to be situated in multiple social contexts including the university classroom, the case studies, the practicing teachers' classrooms, and the interactions with other professors involved in teacher education. In this instance, technology was used to support learning and made a contribution to an already existing course of study. It did not replace, but rather enhanced. This is technology's strength.

Data from within the Technology Domain were analyzed to answer the research questions pertaining to the benefits and challenges of participation in a computer-mediated community, as well as to the challenges involved in the community's creation and

maintenance. There are two main conclusions that can be drawn from the findings in this domain of data. They are: 1) technology allowed pre-service teachers' learning to be situated in multiple contexts, and; 2) technology can support the more human side of a community.

*Situated in multiple contexts.* Access to multiple contexts allowed teacher education to move beyond the walls of the university. Technology allowed the traditionally distinct lines between university and school, teachers and professors, and theory and practice to blend together, rather than to be set apart. The pre-service teachers' learning was indeed distributed across a wide range of social contexts, across diverse settings, and with divergent members of their community of practice helping them situate their learning in its context.

Three distinct groups of people came together in a virtual space to become one community of learners. People from across large geographic distances with varying arrays of expertise were brought together to study and talk about teaching. The teachers and professors had a combined total of 193 years of teaching experience. They had taught in all geographic regions of the United States, as well as Mexico, Israel, England, and Germany. Their areas of expertise spanned all levels of K-12 education, both public and private, and all of the major content area specializations – Mathematics, English, Social Studies, History, Art, Technology, Special Education and Gifted/Talented certification. It would be rare, if not impossible, to bring a community with such a vast assortment of expertise and teaching practice together in one community for an extended period of time without technology.

An implication that can be drawn from this conclusion is, again, the importance of situating pre-service teachers' learning in the context of its practice with more experienced others to guide them (Borko & Putnam, 1996; Lave & Wenger, 1991; Resnick, 1991). The pre-service teachers not only grew to understand the practical applications of what they were learning (Shulman, 1992), but they also saw how this fit into multiple contexts. These multiple contexts allowed them to see the complexity inherent in teaching and that there are no clear-cut or black/white recipes for teaching (Hollingsworth, 1989). They were guided to see the importance of context in making teaching decisions (Shulman, 1992). Teacher education programs should guide their pre-service teachers beyond thinking about teaching and classrooms in the views of their own personal experiences (Calderhead & Robeson, 1991) and expose them to the diverse natures of public school classrooms (Hollingsworth, 1989).

*Building community.* Additionally, the more “human” notion of community was supported within this online social context. Although technology can feel impersonal and distant and can lack the feel of human interaction, in this particular instance it fostered some very human responses. The pre-service teachers felt important and valued to be included in a professional dialogue. Several students mentioned feeling like a teacher for the first time, which hints at the idea of legitimate peripheral participation (Lave & Wenger, 1991), as the more expert others welcomed and guided the newest members of their community into practice. Professors mentioned feeling validated by the teachers’ affirmations of their work and the teachers felt valued to be included in the preparation of future teachers.

This conclusion has implications on the importance of community building in teacher preparation programs. Including pre-service teachers in their future community of practice reduces the psychological distance they may feel toward their participation within that community. It becomes a more real scenario for them in which to engage and to think of themselves as teachers. Additionally, the notion of community provides a forum for discussion and access to a group with similar interests and goals (Myers, 1996).

#### *Summary*

As Borko and Putnam (1996) asserted, good teacher education programs take into account the complexity of learning to teach, and good educational research must also address this complexity by expanding the contexts in which we study learning to teach. This research sought to do just that by studying the process of learning to teach in a learning environment that was situated in multiple contexts.

In merging this socio-culturally based learning paradigm with advanced computer technologies, a learner-centered environment was created that was situated in the context of its practice and that honored the social and distributed nature of learning. Such a community also honored the complexity of learning to teach. This environment continued to evolve from the participants’ interactions with each other through their social and professional dialogue across the semester. As the pre-service teachers gained a broader knowledge base about teaching and pedagogy, the conversations increased in their depth and complexity. The pre-service teachers became able to discuss one facet of education through multiple lenses and began to see the complexities inherent in the classroom. In these ways, this computer-mediated community of learners supported the three main tenants of the Theory of

Situated Cognition. Learning was situated in its context and it was social and distributed in nature.

Based on the data from this research, the implications for teacher education emphasize the importance of providing opportunities that enhance the social nature of learning as well as opportunities for reflective thought. The pre-service teachers' abilities to connect theory to practice, to understand theoretical concepts, and to begin to develop their philosophy of teaching were all enhanced by the social contexts and social interaction afforded them in this community. As Hawkes (2000) noted, teachers learn by sharing and discussing teaching situations with their peers. "Comparing and contrasting individual beliefs against those of a group constitutes a process by which meaning, and subsequently knowledge, is formed" (p. 270). Other research has also determined the importance of social interactions in teacher learning (Collis & Heeren, 1993; Lieberman, 1995; Little, 1985; Smylie, 1994; Wasser & Bresler, 1996).

Technology provided the means for this social context to occur. However, as with any teaching tool, what is helpful and supportive for one learner is not necessarily helpful and supportive for all learners. For example, some participants found the anonymity that comes with computer-mediated communication an advantage, while others found it a hindrance. Some preferred the chats due to their quicker pace and immediate feedback, while others preferred the time to think that communication in the threaded discussions afforded. Some preferred natural conversation to chat because, again, they felt the pace of the chat was too quick and natural conversation is more even paced, while others mentioned preferring chat to natural conversation because they felt the pace of the chat gave them more time to think than natural conversation does.

Finally, preparing pre-service teachers with the help of practicing teachers may not only be one way to enhance the social and distributed nature of learning, but may also help to lessen the divide between the work of the university and the school. Partnerships could be one way to increase teachers' involvement in teacher education as well as one way to more effectively help pre-service teachers connect theory with practice. This research showed what a high value pre-service teachers place on practicing teachers' thoughts and opinions. The professors' teachings and university coursework became validated in the eyes of the pre-service teachers when the practicing teachers corroborated the professors and helped the pre-

service teachers see the value and the practical applications of what they were learning. Practicing teachers can be a tremendous influence in the preparation of new teachers and technology allows us one way to include them in this preparation.

As Diamond (1991) noted, it is teachers who are the primary change agents for our schools. With ever-advancing technologies, working with teachers becomes more and more possible. With recurring calls for reform, working with teachers may become more and more valuable. If we value the possibility of situating teacher education in the context of its use, and if we believe in the importance of the social and distributed nature of learning, then professors and universities working with, rather than apart from, teachers and schools is a possibility of promise to be explored. Technology offers us one way to explore that possibility.

#### *Improvements for Future Phases of this Research*

Although I am pleased with the findings from this research and am content with the way in which it was conducted, there are many areas that can be improved upon in future phases of this research. First, I will give participants a booklet with all necessary information compiled together for them rather than sending this information piecemeal by e-mail. Due to the workload that was involved in this, I am also exploring ways to automate much of the work I did so that this project can be continued without such a bulk of work involved in its creation and maintenance. For example, chat sign-ups can be completed on an on-line form rather than on a hard copy in the classroom. Additionally, the teachers and professors mentioned feeling a need to know the context of the classroom discussions prior to and following the chats. A brief blurb posted on the website or e-mailed to the teachers prior to the chats will help the teachers begin the chats having some knowledge of what has been going on in the classroom as well as some idea of the nature of the classroom discussions.

Other changes in future phases of this research would involve having the teacher reception at the first of the semester rather than the end, showing a copy of a chat room transcript to the pre-service teachers before the first chat to lessen anxiety, and helping the pre-service teachers prepare for the chats by developing questions for the teachers. A small piece in the booklet on what can be expected from pre-service teachers and where they typically are in their stage of learning to teach is critical. This is needed to orient teachers or professors who may have not had a great deal of experience in working with pre-service

teachers and to reduce any misconceptions about their concerns, fear, worries, etc.

Finally, the pre-service teachers in this research have all agreed to talk with me again during their student teaching and on into their first year(s) of teaching. Following these new teachers for several years after their participation in this teacher education program can provide opportunities to look at the changing nature of their ideas of what good teaching means, their use of technology, as well as further opportunities to examine reflection. It also provides an avenue on which to look back at the impact of this experience.

#### *Directions for Future Related Research*

Future research could take some interesting paths. Teacher education programs could explore the use of such computer-mediated environments during student teaching and as professional development opportunities for practicing teachers. As mentioned earlier, technology can feel impersonal and distant to some, but future research could look at the focus of face-to-face and computer-mediated dialogues. It may be cognitively more advantageous at times to have to think and write responses without a focus on the affective. Finally, reflection could be examined in online environments where participants have access to others' reflections. Research could be conducted to investigate the differences between online reflective discussions and traditional campus-based reflective discussions.

## REFLECTIVE EPILOGUE

In stepping back and taking a broad look at the past year and the triumphs and challenges it brought with it, I realized I have not only learned a great deal about the research process, but I have also learned as much, if not more, about myself. The dissertation experience has been a growing experience for me in many ways. However, I see this process not as the end or culmination of something; rather, I see it as a beginning to what I hope will be a long and successful career.

The way I view this process now is, in itself, a change from the way I previously thought about earning my degree and beginning my new career. I have spent the last five years in graduate school preparing for the day I would receive my degree – the finish line. It always seemed so far away and distant and there were many times when I wondered if I would make it all the way through to the degree, but it always felt that I had plenty of time to prepare for my new career. I wanted to read and take classes and do as much as I possibly could so I would be “ready” to go out and do what my degree says I can go out and do. Now, I’m staring at the end of this journey. I am watching friends take jobs and move away and begin their new careers, while realizing that just a couple of months from now I will be moving away to my own new career. Somehow, now it seems it came much faster than it felt like it was coming.

I began this dissertation by sharing my experience about my first year of teaching. This Fall, I will be a new Assistant Professor at East Carolina University and it will be another first year for me. Sometimes, the thought of that scares me to death and another year of graduate school suddenly seems like not a bad idea. But, I take a deep breath and look at the preparation I have been given while at Virginia Tech. This doctoral program definitely encompassed the three major ideas of the Theory of Situated Cognition that framed this research.

My learning has been situated in the context of the practice. I have been immersed in the academic experience. I have taught classes, participated at national and international conferences, served on committees, conducted research, and submitted articles for publication. My learning has been social and distributed in nature. I have interacted with, and have been mentored by, more experienced colleagues who guided and supported me and

provided the scaffoldings necessary to move me to the next level of challenges. While the first year of anything new is always challenging, I am expecting I will be able to handle this next first year with confidence in the preparation I have received.

What I am feeling now is the preparation and confidence I would like all new teachers to feel when they are beginning their careers. While I certainly do not feel that there are not frustrations, challenges, and unknown territories ahead of me, and that there would not be for anyone new to a career, I do feel that I have received the best preparation possible to meet the challenges ahead. That is what I want for pre-service teachers.

Additionally, my dissertation research has started me down a path that I hope will be very productive. I would like to continue this research in the years to come and I see it progressing through phases. First, I would like to continue this research in my own classes at ECU and broaden the learning community to include one of my classes from there to the community already established here at Virginia Tech.

Eventually, I would like to move toward implementing a service-learning component to this research where the pre-service teachers would become involved in the schools. I specifically would like the pre-service teachers to work with children from poverty homes, reading with them, tutoring them, or providing some form of mentoring, in this way creating a reciprocal relationship where the pre-service teachers gain valuable experience and the children get some of the individualized support they need. Dr. Dawson and I will be writing a grant this summer geared toward accomplishing some of these goals.

I am proud of having received my degree from the Department of Teaching and Learning at Virginia Tech. I think they do an excellent job of preparing teachers at all levels of the continuum. One of the pre-service teachers who participated in this research summed it up much better than I can:

I think Virginia Tech has an exceptional teacher ed program. I have some friends who are learning to teach in different schools and I didn't realize what I've been learning here until I talk to them and realize what they haven't been learning. I mean it's really blown my mind. I didn't realize how revolutionary our department here is and how open they are and dedicated to teaching.

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## APPENDIX A

### Creating Connections: A Computer-Mediated Community of Learners A Pilot Study

#### (ABSTRACT)

This paper reports the findings from a pilot study investigating the uses of computer-mediated communication in an educational psychology course for pre-service teachers that focused on problem-based learning via CD-ROM-based case analysis. Thirty-nine pre-service teachers and eight practicing teachers participated in this study that developed an online learning community of pre-service and practicing teachers. The participants viewed the video case studies as part of an experimental virtual field experience component and communicated electronically through chat rooms and threaded discussion lists. Data sources included transcripts of all chat room and thread communication, email correspondence, field notes, and student tasks and reflections, as well as exit interviews with the teachers and a student focus group. The methodology was qualitative in nature using a template organizing approach with the constant comparative method. This paper reports on the findings concerning students' learning about educational psychology and teaching, students' appreciation of diverse settings, the developmental nature of the questions posed by the pre-service teachers, and the advantages and disadvantages of using the technological components in this course. Results show that the case studies helped the students make sense of the concepts and theories being studied in class, while the communication with the teachers helped the students see the practical applications of the information they were learning. Thus, it was the complete triad of class lecture, case studies, and communication with the teachers that brought the learning cycle full circle.

Creating Connections:  
A Computer-Mediated Community of Learners

*Introduction*

While the process of learning to teach is a very complex and sinuous enterprise, it can be equally as entangling for those of us in the professional community who seek to understand how the process develops and how to best foster that development. Much research has been done on learning to teach as well as on teacher education practices at all levels of the teaching continuum, from pre-service teacher education programs throughout the career span of the practicing teacher. Though much has been learned about this challenging process, there is still even more to learn about the development of learning to teach and what implications that may have in providing the most appropriate learning experiences in pre-service programs.

For researchers to continue to understand how and why teachers learn what they do within any educational context, from pre-service teacher education programs to professional development for practicing teachers, it is critical to investigate the meaning the teachers involved construct from their experience within it. Knowledge and skills do not exist independently of the contexts from which they are acquired, neither does learning to teach exist independently of the practice of teaching.

Additionally, past experiences have shown us that teachers have great difficulty learning theories and skills in isolated university classrooms and then applying them in future teaching situations. Cognitive psychology has posited that learning occurs when it is situated in the context of its use (Borko & Putnam, 1996). The adoption of this theory of situated cognition for practice in teacher education programs may be one way to not only situate teacher learning in the context of its use, but it may also serve to blend theory with practice enabling teachers to bridge their university experiences with their school practice in a more effective manner.

By developing an online community of learners consisting of pre-service teachers and practicing teachers, this study adopted the situative perspective of learning as its theoretical framework and investigated the ways in which technology may support teacher learning. This pilot project, A Computer-Mediated Community of Learners, hereinafter referred to as

CMCL, was designed to create a field experience component to EDCI 4124 – Psychological Foundations of Education for Pre-Service Teachers through the development of an online learning community that includes pre-service teachers and practicing teachers communicating electronically and using problem-based learning via CD-ROM based case analysis to study and learn about teaching.

Traditionally, this course has been centered around the teaching of psychological theories for education, but has had little opportunity for the pre-service teachers to observe and participate in the practical classroom applications of the theories studied. A need for an alternative to traditional field experiences exists, as it is becoming increasingly difficult to find opportunities for field experiences for the pre-service teachers due to the flood of college students entering the local schools for student teaching, student aiding, and other teaching experiences from the various programs on campus. This project seeks to provide one such experience.

Although the research on the infusion of technology into teacher education programs and the effectiveness of that integration is not definitive, anecdotal evidence does suggest that instruction *through* technology and instruction in the use of technology are becoming important components in teacher education programs (Imig & Switzer, 1996). Imig and Switzer continue to state that by incorporating technology to focus on an institutional objective, technology, in this way, does not become an end in and of itself but contributes to the solution of a problem.

By adopting Imig and Switzer's perspective to the use of technology in teacher education programs, this study looked at the ways in which electronic learning communities may enhance Virginia Tech's pre-service teachers' learning experiences while also addressing standards for teacher education programs suggested by the National Council for the Accreditation of Teacher Education (NCATE). The specific standards this project addressed are as follows:

Standard 3: Field Experiences and Clinical Practice - The unit and its school partners design, implement, and evaluate field experiences and clinical practice so that candidates develop and demonstrate the knowledge, skills, and dispositions necessary to help all students learn.

Standard 4: Diversity - The unit designs, implements, and evaluates curriculum and experiences for candidates to acquire the knowledge, skills, and dispositions necessary to help all students learn. These experiences include working with diverse higher education and school faculty, diverse peers, and diverse and exceptional students in P-12 schools.

The research questions for this study are:

- a) What are the design, implementation, and management issues with the CMCL?
- b) What do all the participants learn from the structured experiences? the unstructured experiences?
- c) How does this experience enhance the participants' learning of educational psychology?
- d) How does this experience enhance the participants' learning about teaching?
- e) How does this experience enhance the participants' learning about and appreciation for diverse settings?

### *Literature Review*

Learning to teach is a developmental process continuing across the career span and involving growing and changing in levels and depth of understanding of students and of students' learning needs. It is important to understand the nature of teacher learning as well as the implications that has for our teacher preparation programs. By doing so, we may be able to offer the most effective learning environment possible for our newest teachers. The perspective of learning known as the situative perspective, encompasses three conceptual themes and forms the basis of this literature review as well as the conceptual framework for the study. Those themes are: 1) learning is situated in particular contexts, 2) learning is social in nature, and 3) learning is distributed across the individual, other persons, and tools.

#### *Learning as Situated*

Programs of teacher education have traditionally been based on the belief that learning to teach is a process of acquiring knowledge about teaching (Carter, 1990). More recent shifts in practice have begun to occur to honor the individual involved in the process of learning to teach. This shift has focused upon prior beliefs and experiences of beginning teachers by focusing on cognitions, beliefs, and the making of meaning as the desired outcomes of teacher education (Richardson, 1999). Teaching that honors this stance is less a

matter of presenting factual information and ready-made knowledge, but rather consists of creating environments that support learners in their efforts to construct the knowledge in a way that is meaningful for them (Borko & Putnam, 1996). This focus on the individual in the center of the context of learning to teach also supports the idea that knowledge cannot be thought of as independent from the contexts and situations in which individuals acquire and use it (Borko & Putnam, 1996; Putnam & Borko, 2000). This gives rise then to the question of where should teacher learning be situated? What should be the context of learning for a preservice teacher to reap the most benefits from their professional preparation? Should the learning be situated in field-based experiences, university experiences, a combination of both?

### *Learning as Social*

The sociocentric view of knowledge and learning holds that what we learn and how we think are the result of our interactions with groups of people in our culture over time (Soltis, 1981). This notion also has profound implications on understanding the powerful influence prior experiences and beliefs are for beginning teachers. They have, after all, had at least 16 to 17 years of experience in classrooms with teachers during their own educational careers and have learned throughout those interactions. Much research has shown that novice teachers often will revert to teaching "as they were themselves taught" in spite of the teacher education programs' philosophies they most recently experienced. This may be due in large part to the isolation teachers often experience in the confines of their classroom and their daily routine as they struggle to meet new challenges, they revert to what is most comfortable, to what they know best. It is important to consider the profound impact social situations have on learning and to continue that process throughout the pre-service preparation program and into the teaching career in order to avoid that isolation.

In a survey conducted by Smylie (1989), teachers reported 'consultation with other teachers' as the most effective source of learning to teach second only to 'direct experience as a teacher.' Additionally, Lave and Wenger (1991) proposed the concept of legitimate peripheral participation. This offers the notion of a gradual involvement into a community of practice that starts out peripheral and then increases in engagement and complexity (Leach, 1996). The implications of this for teacher education would suggest that pre-service and/or novice teacher learning be supported by a social network of more experienced others guiding

them to become full participants in their community of practice.

### *Learning as Distributed*

The idea of learning as distributed builds upon and expands the social nature of learning. Theorists assert that knowledge, rather than existing solely in the individual, is distributed across all the members of a learning community, as well as across the social, cultural, and physical tools and symbols of the community (Lave, 1988). Thus, for situative theorists, the whole is literally greater than the sum of its parts. The distributive approach to learning assumes and strives for interdependence among supportive subsystems within a socio-cultural system (Converso et al, 1999).

### *Implications for Teacher Education.*

The situative perspective of learning suggests that the learner be at the center of the instructional design by honoring prior knowledge, beliefs, and the making of meaning as well as the importance of learning environments that allow the student to problem solve and construct meaning for themselves within a social network of supportive others. These notions can be supported in teacher education through the use of such practices as case methods, reflection, and collaboration and mentoring.

*Learning Communities and Technology.* So, how can we put these practices into place in a teacher education program? What tool or method would allow us to provide collaborative experiences as well as time for reflection? How can we couple problem solving activities and time for the student to think through dilemmas on their own with apprenticeships and mentoring that guide the development of pedagogical knowledge? Development of a learning community may be one answer to all these questions. And the development of an electronic learning community may advance this potential even further.

A learning community should be conceptualized as a cultural community rather than a building or other physical space where learning occurs. As cultural communities, learners have a mission and a shared purpose. They must belong to the community and be wanted by its members (Myers, 1996). A learning community encompasses the three dimensions of the conceptual framework upon which this proposal is based. Learning in a learning community allows the learning to be contextual and social, as well as distributed. Learning is individual and yet, supported. With the technologies available to us as we enter the new millennium, the potentials and capabilities of learning communities are virtually endless as electronic

learning communities offer such unique opportunities to teacher education.

Teacher education is not a process that ends upon completion of the university experience and the granting of certification. Learning to teach is a very complex process that continues throughout the career span. Practicing teachers can learn much from involvement with the mentoring and supervision of pre-service and novice teachers. Likewise, teachers and professors have much to learn from each other as well. All are interested in the most basic fundamental desire of our profession - the education of our nation's children. Within this common mission and shared purpose that Myers (1996) spoke of as necessary for a learning community, exists the foundations for a learning community that technological advances have made possible.

### *Methodology*

#### *Participants*

Thirty-nine students in one section of EDCI 4124, Psychological Foundations of Education for Pre-Service Teachers, participated in this semester-long pilot project in the fall of 2001. The students ranged from sophomores to graduate students and consisted of seven males and 32 females. Thirteen of these students were majoring in secondary education while the majority of the class, 26 students, were majoring in Early Childhood Education. One student was not enrolled in the teacher preparation program, but was studying to work in a health-related education field.

Additional participants included eight experienced teachers from the field. Five teachers had experience at the elementary levels and three teachers had experience at the middle and high school levels. One teacher had experience working with children age 3 to adults. One teacher with elementary experience additionally held special education certification and had experience working in special education resource positions. Two of these teachers are now graduate students working on advanced degrees, two are college professors, and four are currently still in practice. Years of teaching experience ranged from eight years to 27 years total teaching time.

#### *Data Collection*

Data were collected throughout the course of the semester. These data included the tasks the students completed in class, reflection papers, transcripts of chats and threaded discussions, electronic mail correspondence, field notes, and transcripts from six teacher

interviews and one student focus group. See appendix A for a complete list of data sources and types of data collected from each session.

There were six main areas of data to be categorized and analyzed. These areas included a) what the students learned about educational psychology, b) what the students learned about teaching, c) how these experiences enhanced their appreciation for diverse settings, d) the developmental nature of the questions asked by the students over the course of the semester, and e) the advantages and disadvantages of using the technological components of the course.

### *Data Analysis*

This analysis involved a combination of the template organizing approach (Miles & Huberman, 1994; Crabtree & Miller, 1999) with the constant comparative method (Glaser & Strauss, 1967; Merriam, 1998). The template approach “immerses the researcher in the often massive and confusing jungle of text, with the set purpose of identifying ‘chunks’ of text so as to facilitate future data retrieval and analysis” (p.166). After the template was constructed, the constant comparative method was used to see what emerged from the data. According to Merriam (1998), the “constant comparative method involves comparing one segment of data with another to determine similarities and differences. Data are grouped together on a similar dimension” (p. 18).

### *Trustworthiness*

The purpose of this research is to investigate the learning experiences of the participants, as well as the design and implementation issues of computer-mediated communication, and to share those findings with those interested in teacher education in an honest and ethical manner. Triangulation was used in order to ensure accurate interpretation. Multiple methods of data collection were used including task sheets, reflections, transcriptions of chats and threaded discussion, email correspondence, field notes, and transcriptions from teacher interviews and a student focus group.

Member checking was also used throughout the course of this study. The tasks and reflections were turned in immediately following a case session, the results were analyzed during the course of the week, and the instructor of the course would return to class the following week and hold a brief follow-up discussion about the case from the previous week and discuss the week’s reflections with the students to ensure accurate interpretation of the

results.

### *Role of the Researcher*

My role in this study was the coordinator and technical support. This was the pilot study for my dissertation so I had a vested interest in its success. Additionally, the course in which this research was being conducted was that of my advisor, Dr. Mason. Dr. Mason implemented the case studies with her students and required the technological and communication components of the course as mandatory, graded assignments. The fact that this was not only the pilot project for my future research, but that it was being conducted in my advisor's course combined with the student requirements provided me with real incentive and motivation to nurture this project.

### *Context*

Psychological Foundations of Education for Pre-service Teachers, EDCI 4124, is currently offered every semester, including summers. Enrollment is usually at full capacity with at least 35 students in each section. With three sections offered each fall and spring along with the summer course, close to 250 pre-service teachers are enrolled in these courses each year. Many of these students are at the beginning of a teacher preparation program, so these numbers are largely in addition to the numbers of students that are seeking positions in local schools for student aiding experiences as well as student teaching assignments. This large number of students entering local schools makes it nearly impossible to locate schools and teachers with enough time and human resources available to provide our pre-service teachers with field experiences. This study sought to provide an alternative to the traditional field experience.

This research was conducted over the course of the 2001 Fall semester in EDCI 4124 – Foundations of Educational Psychology for Pre-Service Teachers. The students in EDCI 4124 viewed video-based CD-ROM case studies that served as a virtual classroom field experience. These case studies included videos of teachers teaching their classes ranging from a high school physical education class to a primary multi-grade classroom to a seventh grade language arts classroom, among others. The students also communicated electronically with practicing teachers from various levels of public school backgrounds and experiences. The participating teachers had experience with teaching children as young as three up to professors teaching at the college level. Six of the participating teachers were all

currently from the local area, one teacher was from a large city on the other side of the state, and another teacher was from a rural county in a neighboring state.

Six sessions occurred during the semester. Since this is a pilot project, the steps of implementation occurred gradually in order to test various arrangements and environments to determine the most successful design and implementation of this sort of instructional design. The first session involved only the students in the course. The instructor showed a CD-ROM video-based case study to the students and a discussion of the case followed. No teachers were included in this first case viewing and discussion.

The second session brought in the first five of the practicing teachers. For this session, the teachers were all from the local area and were able to come to the actual physical classroom to meet with the students, to watch the second case study, and to lead small group conversations about the case in a live face-to-face discussion.

The third session began the electronic communication component of the project. For this first implementation of electronic communication, all the participants, the students and four of the original five teachers (one teacher was unable to continue participation in the project) met in the computer lab to watch the third video case and to have the first electronic discussion. This first attempt was to ensure the participants' comfort level and confidence using the technological components before moving the discussions to completely distant locations as well as to test the two forms of communication, chats and threads, for effectiveness. The class was divided into two groups, one group of 19 and one group of 20. Each group had two teachers join their group. The first group met online in the chat room to discuss the first question concerning the case study that was just viewed while the other section of the class met on the threaded discussion list to discuss the same question. After 15 minutes, this discussion ended, a new question was introduced, and the two sections of the class switched to using the alternate form of communication to the one they had used the first time. For example, if they had first communicated in the chat room, they discussed the second question over the threads and vice versa.

The fourth session again occurred in the computer lab, but only the students were present for this session. No case was viewed this week, as the class was continuing a previous discussion on motivation, the topic for discussion of this chat session. The students met in groups of eight to ten in the computer lab in 15-minute rotations. The students in the

lab were with me and the remainder of the class was with the instructor for other small group activities. This session brought in two new teachers to the project. One teacher was from a large city on the other side of the state and the second teacher was from a rural area in a neighboring state. Two of the original four teachers also participated in these chats from their own remote location.

The fifth session involved the students viewing a CD-ROM case study in class and then signing up for pre-determined chat times with the various teachers throughout the course of the week. Once again, a new teacher joined this week. He is currently a professor of educational psychology with teaching experience at the middle and high school levels. In these chats, there were no more than six students in the chat room with one teacher. Threads were used for the teachers to post an introductory statement about their chat session for the students to read prior to the chat, as well as for additional follow-up questions that may occur after the chat. The students were required to post at least two threads during the week in addition to participating in their assigned chat time. Up to this point, the threads had been an optional component.

The sixth and last session involved the students viewing a CD-ROM case study at home on their own computers and communicating entirely asynchronously over the threaded discussion list. There were no chats this week other than a couple of them that were scheduled to allow students who had missed a chat to make up their assignment.

During each case study, students were asked to complete a task related to the case that revolved around helping them focus on key components of the case as related to the topics they were studying in educational psychology. After each session, students were asked to complete a reflection sheet asking for their feedback and suggestions for improvement as well as what they felt they learned about educational psychology and/or teaching from the experience. All chats and threads were archived and printed for analysis and copies of all tasks and reflections were made and kept for analysis as well.

### *Findings*

The data were analyzed according to following five categories: a) students' learning about educational psychology, b) students' learning about teaching, c) students' learning about diverse settings, d) the developmental nature of students' questions, and e) the advantages and disadvantages of using technology to study educational psychology and

teaching. Each category will be discussed and a summary of the findings will be presented.

*Students' Learning about Educational Psychology*

Students had three forums in this class through which to learn about educational psychology. They experienced the instructor's lectures and class discussions, they viewed the video-based CD-ROM case studies, and they communicated with practicing teachers. Data were collected on what the students said they learned by viewing the case studies and by communicating with the teachers. First, an analysis of what the students learned from the case studies will be presented.

*Learning about Educational Psychology from Case Studies.* The case studies served two purposes for the pre-service teachers. First, they clarified the concepts that were being studied in the course by serving as an example of the concept or theory under study. Several students noted that the case studies gave life to written theory. For example, some of the students' comments included, "They made concepts clearer by showing what the theory looked like in a classroom setting," "The concepts were not so abstract when I could actually see them in a case study," "The case studies helped to reinforce ideas and theories taught in class for me," "I wasn't just reading it from a book but actually seeing a concept in a classroom," and:

The case studies allowed me to view the philosophies and concepts we have learned throughout this class and see them being put into action. It is very easy for us to read about them, but this allowed us to visualize how each works."

Secondly, they helped the students see how the concept or technique being talked about in class could be used in practice. Students were able to identify and see concepts in action such as reinforcement being used in a teacher's classroom. Some of the comments from students included, "I think the case studies allow for us to make the connection of teaching theory put into practice," "It gave me a more practical understanding to the material that we have been discussing," and finally,

With the case studies, we had the chance to OBSERVE what we learned in class and from reading the book, and watch how you can APPLY it to teaching and learning within the classroom. When you are seeing a teacher actually implement a theory or concept into everyday lessons, you realize just how vital everything is that you study, and you learn methods and collect ideas of how you can actually

implement these into your own classroom. When you read it, or write notes down about it, you do not fully understand how to apply it, or what happens when you do, until viewed in one of these case studies. They have been very helpful.

The students' comments about what they learned from the case studies developed over the course of the semester from more simple statements concerning the fact that they were able to identify one of the educational psychology concepts in the video to understanding how that concept was being used by the teacher. The students' statements, therefore, appeared to indicate a progression from simple identification of concepts to understanding the application of concepts.

*Learning about Educational Psychology from Teachers.* The communication with the teachers seemed to extend the discussion of the theory and/or concept by talking about the practical applications in the classroom. It allowed the students to go beyond understanding how the concept was used in the one video to how teachers work with these concepts on a daily basis and allowed them to see there are multiple ways to apply what they are learning. Many of the students seemed excited to discover that teachers, "really use what we study in class." Comments like, "It's nice to see that teachers in public schools really use things like multiple intelligences. It feels good to know that we'll really use the stuff we are learning."

In helping the students extend their understanding of practical applications of theory, the teacher chats often centered around practice-based discussions. For example, in class, the students had been learning about theories of motivation. The case study that they viewed that week helped the students understand more about the concept by seeing an example of how the teacher was attempting to motivate a reluctant learner. The chats and threads then that week focused on motivational concerns in the classroom. The teachers talked with the students about such things as ways to make a lesson on plants 'unboring' to second graders, ways to motivate struggling readers to want to read, and ways to encourage self-esteem. Student comments indicate that from the teacher chats that week about motivation, they learned the importance of knowing the learner, and in making learning relevant and interesting to the learners: "The teacher encouraged us to make the learning belong to the kids. Make them part of their learning" and "It is important to find ways to interest students in the topics they are studying. This could involve finding REAL WORLD examples for

them and relating subject matter to their own lives,” and this final remark from a student:

I learned (from talking with the teachers) that the concepts that we have learned in class are very important in teaching and are used in the classroom every day. The concepts are what teaching is about, they are the backbone of the profession. The connections I have made are the teachers using the information about development, management, etc. in their lessons. They know the concepts are important.

### *Students' Learning about Teaching*

Students' learning about teaching stemmed from communication with the teachers through threaded discussions and chat rooms. Two main categories of student learning emerged from the data analysis. The students learned about the realities of the classroom and they made connections to theory by hearing about practical applications. The chat discussions included the following topics: a) engaging children in learning; b) child-centered curricula and appropriate activities; c) Knowing your learners' backgrounds, cultures, interests, needs; d) lesson planning ideas, and e) practical applications of theories and concepts discussed in class, such as development and individual differences. This particular class discussion sparked a conversation in the chat room about grouping, multiple means of assessment, management issues, and self-esteem. As one student stated about her experience chatting with the teachers and what she learned from it:

I learned that everything is constantly changing. Teachers need to pay attention to the growth and development in their students to review their own curriculums and adjust lesson plans and topics accordingly. We definitely learned about all of the struggles that go along with teaching, like motivating all of the children, or grabbing their attention. But they also gave us tons of hints and told us how important it is to get the children's respect and to seek outside support from other teachers and faculty members. I just got more excited about the profession talking with them about it!

What is important to note, is that the complete triad of class lecture, case study, and communication with the teachers seems to be the catalyst for the overall student learning. The communication with the teachers was effective because the students had seen the classroom examples from the videos and were thus ready to extend their understanding. The students seemed to be better helped by the case studies as far as gaining a firmer understanding of the psychological theory or concepts than they were by the teachers, but the

talk with the teachers seemed to have the most impact on helping them make connections and learn how to apply these concepts to a real classroom.

### *Appreciation of Diverse Settings*

Students viewed case studies of five different classrooms. These classrooms included a high school physical education class, a primary multi-grade class doing a science lesson, a first grade class doing a morning of balanced literacy, a seventh grade persuasive writing class, and a primary ESL class. They also communicated with eight teachers of various backgrounds and expertise from small rural communities to large urban cities. The teachers were both local and from across two states. The students were thus exposed to a diversity of perspectives from the teachers as well as diversity of experiences with different types of classrooms. The key thing to note here, is that not only did students become aware, as some truly were not, of the diversity that exists in public schools, but they also learned some strategies and understandings required of working with a diverse population. As some students noted, “It opened my eyes and I have some great ideas I can now use in my room to respect those issues better,” and “ I’m more aware of just how diverse classrooms are going to be. Not just racial, ethnic, or cultural diversity, but diversity within student attitudes, abilities, and learning styles.”

### *The Developmental Nature of Student Questions*

The nature of the type of questions the students asked did change over the course of the semester reflecting more field-based knowledge and a more global outlook on the education of children. In September, the questions the students posed were largely logistical “how to” questions. They were also largely centered around themselves as the teacher of the classroom and they exhibited concerns about how they themselves would function within the classroom. For example, student questions included, “How can I keep the class under control?”, “How do you manage students at different levels?”, “How do you deal with students who have never done something before?” Most of the questions the students asked at this point in the semester centered around management of the classroom’s activities. It is also important to note that almost 20% of the students were unable to even generate a question on this first task. They couldn’t think of anything they wanted to ask about teaching. By the end of the semester, there was no short supply of questions.

By October, the pre-service teachers' questions became more situational. They were also more focused on the children than on themselves. Some of their questions included, "What do you do with students who are convinced they cannot do the work? How can I help them realize that they can do the work?", "How do you keep the kids who may be special ed or those who may be gifted focused or motivated in the classroom?" and "What are some of the interests the students have at this age level? What types of books are they reading? Is there a favorite author they all love?" This trend of situational questions continued into November, but the questions became more specific and they also began to bring in concerns from outside the classroom walls such as working with parents and the role the children's background experiences play in their learning.

By December, an obvious growth in the depth and breadth of their questions had taken place. The questions became more reflective, more global in nature, and they often expressed a concern or worry rather than asking a question. They were far more often focused on the concerns or the needs of the children rather than on themselves, a quite dramatic shift from September. For example, "I'm so worried about children not getting taught morals and values at home. I know that I will want to teach this. I just hope I don't step on too many toes," "I hope that with all I have learned I will be able to create a great learning environment, one that encourages cooperation, learning, and hope for future dreams," and "I would like to learn how to reach out to the children who may be quiet or shy children and how to get them to become more confident and want to be more involved in the classroom."

#### *Advantages and Disadvantages of Using Technology*

Three main themes emerged from the data concerning the advantages of using technology to study teaching and educational psychology. They included: a) real world, not textbook examples, b) diversity of perspectives and opinions, more "voice" than is typically found in a traditional format, and c) applications, making them think about their own classroom.

The disadvantages of using the technology mainly centered around our implementation of it. Of course, one disadvantage any time technology is used, is the risk one takes that it won't work or that there will be technological glitches and we did

deal with a few of those glitches throughout this project. However, the majority of problems cited as disadvantages included the way the technology was used, not the technology itself. For example, some students felt the case studies were hard to see or hear in a large classroom. They felt the cases were fragmented and rushed and sometimes hard to make sense of. They would have liked to spend more time on them and see them in their entirety. The concerns with the chats included the difficulty in keeping up with the pace of the chat and the lack of face-to-face, personal interaction. The concerns with the pace of the chat lessened as the semester went on and as we experimented with different numbers of people in the chat rooms, narrowing it down from 20 to five. Threaded discussions were deemed much less useful than the chat by the majority of students, except to serve as options for follow-up thoughts from chats.

### *Conclusion*

While most teacher education programs have established goals to develop technology use in their programs due to the increased use of technology in public schools as well as standards directed by NCATE and INTASC, the use of technology in teacher education has largely been limited to methods style courses in technology or to the integration of required technological components to course work such as listserv discussions, internet searches, or an equivalent technology component (Vannatta & Beyerbach, 2000). While a few attempts have been made to develop telementoring projects or online learning through chat rooms or threaded discussions, little research exists on the use of technology as a web-based tool to support distributed learning communities in pre-service teacher education. Even less research is available on the use of technology in practicing teachers' professional development.

An electronic learning community has the potential of supporting what research has told us is important in preservice teacher education programs. It offers preservice teachers the ability to collaborate with colleagues while also providing opportunities for reflective practice. It provides a forum for the presentation and discussion of case methods based in real world dilemmas encouraging the use of problem solving abilities. And perhaps most importantly, it offers the very unique advantage of providing to pre-service teachers a learning community that offers the highest of potential for distributed learning, with access to experienced teachers, administrators, university faculty, and a virtually endless list of

possibilities for participants in such a program.

Funding is being sought to continue this project in the Fall of 2002. The video-based CD-ROM case studies will be used again and communication with experienced teachers from diverse settings will also continue. The scope of the research will be broadened to include two sections of EDCI 4124 and an additional five teachers will be added to the remaining seven from the pilot study.

As teacher education programs become more heavily invested in the use of technology and required by standards set forth by NCATE to incorporate the use of technology in courses, the opportunities, and the challenges, technology provides us with cannot be ignored. This project not only provides another step toward meeting the technological goals of a good teacher education program, but also prepares our future teachers by immersing them in the practice of teaching early in their program. Research has shown the benefits of collaboration and of situating learning in the practice in which it occurs. This is an opportunity for our pre-service teachers to experience what research tells us will help them learn and become effective teachers.

## APPENDIX B

### IRB Materials

#### **Protocol to Accompany Institutional Review Board Request for Exemption *Virginia Polytechnic Institute and State University***

**Project Title:** Creating Connections: A Computer-Mediated Community of Learners

**Principal Investigators:** Susan G. Magliaro, Associate Professor, Department of Teaching and Learning, Carol Greene, Graduate Student, Department of Teaching and Learning

#### **Justification of the Project**

It is becoming increasingly difficult to find placements for field experiences for Virginia Tech's pre-service teachers. The local schools are already inundated with students seeking to observe teachers and classrooms, with student aides and with student teachers. Due to this increasing difficulty, our students may not be getting the benefits that experiences in a classroom may offer. The purpose of this project is to create a field experience component to EDCI 4124 – Psychological Foundations of Education for Pre-Service Teachers through the development of a computer mediated community of learners (CMCL) that includes pre-service teachers, practicing teachers and university faculty. The community will include professors from Virginia Tech, practicing teachers from across Virginia and North Carolina, and students in one section of EDCI 4124. The focus will be on the solving of authentic video-based cases that highlight the psychological, emotional, cultural, and social dimensions of teaching and learning. A pilot study to examine the methodological and logistical issues related to this endeavor was conducted in Fall, 2001.

#### **Procedures**

A Course Compass website, a component of Blackboard, that includes a chat room, threaded discussion boards, and electronic mail addresses will be used. Pre-service teachers, practicing teachers and university faculty will meet online using these three venues for discussion of issues that may either relate to the case studies, or focus on specific issues and questions. For this project, there will be synchronous and asynchronous opportunities for conversation. The synchronous conversations will focus on the video-based case studies and be required course activities. Four times a semester, a video-based case study will be viewed

by the participants. These case studies will align with a topic in the educational psychology course. The video-case will be viewed via compact disc. A synchronous discussion of the case via a chat room will ensue the following week between the teachers, professors, and students.

The asynchronous activities include threaded discussions and electronic mail correspondence. There will be three threaded discussions throughout the semester that will evolve from topics being covered in the educational psychology course. A forum for discussion will be posted after which students, teachers, and professors may post their thoughts, opinions, or questions concerning the topic. Electronic mail correspondence may occur between students, teacher, and professors as all participants' email addresses are available on the website, but this correspondence is not a required course component and will occur only if initiated by a participant. Email correspondence will not be treated as data since only the sender and recipient of the email message will have access to it.

This project will engage 8 practicing teachers from across Virginia and North Carolina, 8 professors from Virginia Tech, and one section of EDCI 4124 with all of the above-mentioned activities. Also included will be an interview at the end of the semester with the students, teachers, professors, and a technical support person. These interviews will focus on what the participants feel they learned from participating in this project, as well as the perceived advantages and disadvantages of an electronic field experience and computer-mediated conversations. Please see the attached interview guides. Information we gather from the electronic communications and the interviews will be used to help those of us in teacher education begin to understand the benefits and challenges technology provides for an alternative field experience. This information may be shared with a wider audience through presentations and/or publications.

### **Risks and Benefits**

There are no risks involved in this project, other than those experienced in everyday activity. For the students, although their participation in the video-based case studies and communication with the teachers and professors is a mandatory part of their course requirements for which they will receive a grade, their decision to contribute their written or electronic work is optional and strictly voluntary and will in no way influence their grade. Participation in the interview component of this project is strictly voluntary as well and their

participation or nonparticipation will in no way influence their grade for this course. No names or identifying markers of any kind will be used on any of the data and all data will be aggregated across the group.

For the teachers, professors, and technical support person, there are no risks involved in this project, other than those that may be experienced in everyday activity. They will not be asked to be involved in any situation that will cause them any physical danger or emotional stress. No names or identifying markers of any kind will be used on the transcripts and all data will be aggregated across the group.

Information we gather from the electronic communications and the interviews will be used to help those of us in teacher education begin to understand the benefits and challenges technology provides for an alternative field experience. This information may be shared with a wider audience through presentations and/or publications. Every effort will be made to ensure participants' anonymity, however, since this project involves communication among participants, it is possible that a participant's identity may become known.

The benefits of this project will be the usefulness of the results to all of us involved in teacher education. It is becoming increasingly difficult to find opportunities for field experiences for the pre-service teachers due to the flood of college students entering the local schools for student teaching, student aiding, and other teaching experiences from the various programs on campus. Technology may offer one alternative to the traditional field experiences provided for students.

### **Confidentiality/Anonymity**

Information gathered in this project will be treated as confidential by the researchers. Upon completion of the project, it will be compiled and aggregated so any comments or information cannot be traced to the participants. No identifying markers of any kind will be placed on the transcript or any other document. Interviews will be conducted individually, pseudonyms will be used, and no one other than the researchers will have access to those tapes and transcripts. All tapes from the interviews will be stored at the researcher's home and will be destroyed upon completion of the project.

All information collected, such as transcripts of chats and threads will be destroyed after completion of the research project. We will use the information with strict confidentiality and all efforts will be made to ensure anonymity of the participants.

However, because participants of this project will be communicating with each other and will thus know each other's identities, comments or information offered through electronic communication will be known about each other so that we cannot assure anonymity and confidentiality among the participants as pertains to the electronic communications.

### **Informed Consent**

Please see attached informed consent forms that will be presented to each participant.

### **Biographical Sketches**

Dr. Susan G. Magliaro  
Department of Teaching and Learning  
College of Human Resources and Education

Dr. Magliaro has been a faculty member since 1988, receiving tenure in 1992. Dr. Magliaro teaches Educational Psychology, Advanced Educational Psychology, Instructional Design, Preparation for Teaching – the GTA Seminar, among others, and has conducted numerous workshops on teaching and learning. Dr. Magliaro has conducted research on learning to teach, instructional design, and problem solving, is a co-author of a textbook on instructional design, and has presented papers at research conferences on these topics since 1984.

Carol Greene  
Department of Teaching and Learning  
College of Human Resources and Education

Carol Greene is a graduate student in Educational Psychology and has been enrolled at Virginia Tech since 1998. She is a graduate research assistant for the Center for Excellence in Undergraduate Teaching. She has conducted classroom-based research with pre-service teachers regarding the use of video-based case studies and computer-mediated communication. Her research interests are learning to teach, teacher education, and technology.

***VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY***

**Informed Consent for Participants of Investigative Project**

**Investigators: Dr. Susan Magliaro and Carol Greene**

**Title of Project: A Computer-Mediated Community of Learners**

**I) PURPOSE OF THE STUDY**

The purpose of this study is to investigate the ways in which technology may support teacher learning. This research is to be conducted with pre-service teachers, practicing teachers, and university professors to determine the effectiveness of an online learning community in learning to teach and to investigate the experiences of the participants as they engage and communicate with each other in this learning community. This study was informed by a pilot project conducted in Fall, 2001.

**The research questions are:**

- a) What is the nature of the on-line conversations and how do they unfold over time within a session and across a semester?
- b) What does each participant group (i.e., pre-service teachers, practicing teachers, university professors) learn from communicating with the other participant groups about educational psychology? Learning to teach?
- c) What do participants report as the benefits and challenges of CMC as related to the study of educational psychology? Learning to teach?
- d) What are the benefits and difficulties of creating and maintaining a CMCL?

**II) PROCEDURES**

This project is designed to provide a viable alternative to field experiences for pre-service teachers at Virginia Tech by using video-based case studies as part of a web-based and password protected website that is designed for access to all participants. The website includes links to case studies, resource information sites, email and contact information, a chat room and a threaded discussion list to be used for posing problems, discussions, questions, ideas, etc. Students in one section of EDCI 4124, along with eight practicing teachers, and eight university professors will participate in

this project by viewing 4 video-based CD-ROM case studies on the website. The case studies will align with a topic being covered in the educational psychology course and a new case study will be made available four times a semester. Each case will use a problem-based learning strategy and will focus on solving authentic video-based cases that highlight the psychological, emotional, cultural, and social dimensions of teaching and learning. The students, a practicing teacher, and you will meet in a chat room and discuss each case study the week following each case session. Also, three times during the semester, discussions will be held asynchronously through threaded discussion lists. You may also communicate via email with the students and teachers at times of your choosing throughout the semester. Finally, at the end of the semester, you will be asked to voluntarily participate in an interview to last no longer than 30 minutes. This discussion will address the perceived benefits, advantages, disadvantages, and potentials of using technology to enhance teacher education. Information we gather from the electronic communications and the interviews will be used to help those of us in teacher education begin to understand the benefits and challenges technology provides for an alternative field experience. This information may be shared with a wider audience through presentations and/or publications.

### **III) BENEFITS**

The benefits of this project will be the usefulness of the results to all of us involved in teacher education. It is becoming increasingly difficult to find opportunities for field experiences for the pre-service teachers due to the flood of college students entering the local schools for student teaching, student aiding, and other teaching experiences from the various programs on campus. Technology may offer one alternative to the traditional field experiences provided for students.

### **IV) RISKS**

There are no risks involved in this project, other than you may experience in everyday activity. You will not be asked to be involved in any situation that will cause you any physical danger or emotional stress. No names or identifying markers of any kind

will be used on the transcripts and all data will be aggregated across the group. Information we gather from the electronic communications and the interviews will be used to help those of us in teacher education begin to understand the benefits and challenges technology provides for an alternative field experience. This information may be shared with a wider audience through presentations and/or publications. Every effort will be made to ensure participants' anonymity, however, since this project involves communication among participants, it is possible that a participant's identity may become known.

#### **V) ANONYMITY & CONFIDENTIALITY**

Information gathered in this project will be treated as confidential by the researchers. Upon completion of the project, it will be compiled and aggregated so any comments or information cannot be traced to the participants. It will be used only for the project by the investigators as stated above. No identifying markers of any kind will be placed on the transcript or any other document. Interviews will be conducted individually, pseudonyms will be used, and no one other than the researchers will have access to those tapes and transcripts. All tapes from the interviews will be stored at the researcher's home and will be destroyed upon completion of the project.

All information collected, such as transcripts of chats and threads will be destroyed after completion of the research project. We will use the information with strict confidentiality and all efforts will be made to ensure anonymity of the participants. However, because participants of this project will be communicating with each other and will thus know each other's identities, comments or information offered through electronic communication will be known about each other so that we cannot assure anonymity and confidentiality among the participants as pertains to the electronic communications.

#### **VI) FREEDOM TO WITHDRAW**

You are free to withdraw at any time if you do not wish to participate in the study. If you have any questions about this project you can contact Dr. Susan Magliaro at 231-8338 or [sumags@vt.edu](mailto:sumags@vt.edu), Carol Greene at 231-8553 or [cgreene@vt.edu](mailto:cgreene@vt.edu), or Dr. David Moore, the chair of Virginia Tech Institutional Review Board at 231-4991 or [moore@vt.edu](mailto:moore@vt.edu)

Your signature below means that you have read this form and agree to its conditions. You will be given a copy of this form.

-----  
I agree to participate

Date

Should I have questions about this research or its conduct, I may contact:

Dr. Susan Magliaro (540-231-8338)

Carol Greene (540-231-8553)

Dr. Jan Nesor, Dept. IRB Representative, Virginia Tech (540-231-8327)

Dr. David Moore, IRB Research Division, Virginia Tech (540-231-4991)

***VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY***

**Informed Consent for Participants of Investigative Project**

**Investigators: Dr. Susan Magliaro and Carol Greene**

**Title of Project: Creating Connections: A Computer-Mediated Community of Learners**

**I) PURPOSE OF THE STUDY**

The purpose of this study is to investigate the ways in which technology may support teacher learning. This research is to be conducted with pre-service teachers, practicing teachers, and university professors to determine the effectiveness of an online learning community in learning to teach and to investigate the experiences of the participants as they engage and communicate with each other in this learning community. This study was informed by a pilot project conducted in Fall, 2001.

**The research questions are:**

- f) What is the nature of the on-line conversations and how do they unfold over time within a session and across a semester?
- g) What does each participant group (i.e., pre-service teachers, practicing teachers, university professors) learn from communicating with the other participant groups about educational psychology? Learning to teach?
- h) What do participants report as the benefits and challenges of CMC as related to the study of educational psychology? Learning to teach?
- i) What are the benefits and difficulties of creating and maintaining a CMCL?

**II) PROCEDURES**

This project is designed to provide you with a viable alternative to field experiences during your teacher education program at Virginia Tech. This will be done by using video-based case studies as part of a web-based and password protected website that is designed for access to all participants. The website includes links to case studies, resource information sites, email and contact information, a chat room and a threaded discussion list to be used for posing problems, discussions, questions, ideas, etc. All the students in this section of EDCI 4124, along with eight practicing teachers and

eight university professors will participate in this project by viewing four video-based CD-ROM case studies. The case studies will align with a topic being covered in this educational psychology course. Each case will use a problem-based learning strategy and will focus on solving authentic video-based cases that highlight the psychological, emotional, cultural, and social dimensions of teaching and learning. You will discuss each case study after each viewing with the practicing teachers and university professors. You will meet with the practicing teachers and university professors in a chat room the week immediately following the case session. Also, three times during the semester, discussions will be held asynchronously through threaded discussion lists and posted reflections. You may also communicate via email with the teachers and professors at times of your choosing throughout the semester. You will be asked to complete assignments and reflection tasks about the case studies and about your communication with the teachers and professors. Finally, each of you will be asked to participate in an interview to last no longer than 30 minutes. This discussion will address the perceived benefits, advantages, disadvantages, and potentials of using technology to enhance teacher education. Information we gather from the electronic communications, the interviews, and your written assignments will be used to help those of us in teacher education begin to understand the benefits and challenges technology provides for an alternative field experience. This information may be shared with a wider audience through presentations and/or publications.

### **III) BENEFITS**

The benefits of this project will be the usefulness of the results to all of us involved in teacher education. It is becoming increasingly difficult to find opportunities for field experiences for the pre-service teachers due to the flood of college students entering the local schools for student teaching, student aiding, and other teaching experiences from the various programs on campus. Technology may offer one alternative to the traditional field experiences provided for students.

### **IV) RISKS**

There are no risks involved in this project, other than you may experience in

everyday activity. You will not be asked to be involved in any situation that will cause you any physical danger or emotional stress. Your participation in the video-based case studies and communication with the teachers and professors is a mandatory part of your course requirements for which you will receive a grade, however your decision to let us use the information on what you learned from these case studies and the teachers and professors is optional. Your decision whether or not to allow us access to that information for our research is strictly voluntary and will in no way influence your grade. Participation in the interview component of this project is strictly voluntary and your participation or nonparticipation will in no way influence your grade for this course. No names or identifying markers of any kind will be used on any of the data and all data will be aggregated across the group. Information we gather from the electronic communications and the interviews will be used to help those of us in teacher education begin to understand the benefits and challenges technology provides for an alternative field experience. This information may be shared with a wider audience through presentations and/or publications. Every effort will be made to ensure participants' anonymity, however, since this project involves communication among participants, it is possible that a participant's identity may become known.

#### **V) ANONYMITY & CONFIDENTIALITY**

Information gathered in this project will be treated as confidential by the researchers. Upon completion of the project, it will be compiled and aggregated so any comments or information cannot be traced to the participants. It will be used only for the project by the investigators as stated above. No identifying markers of any kind will be placed on the transcript or any other document. Interviews will be conducted individually, pseudonyms will be used, and no one other than the researchers will have access to those tapes and transcripts. All tapes from the interviews will be stored at the researcher's home and will be destroyed upon completion of the project.

All information collected, such as transcripts of chats and threads will be destroyed after completion of the research project. We will use the information with strict confidentiality and all efforts will be made to ensure anonymity of the participants. However, because participants of this project will be communicating with each other and will

thus know each other's identities, comments or information offered through electronic communication will be known about each other so that we cannot assure anonymity and confidentiality among the participants as pertains to the electronic communications.

**VI) FREEDOM TO WITHDRAW**

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***VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY***  
**Informed Consent for Participants of Investigative Project**  
**Investigators: Dr. Susan Magliaro and Carol Greene**

**Title of Project: A Computer-Mediated Community of Learners**

**I) PURPOSE OF THE STUDY**

The purpose of this study is to investigate the ways in which technology may support teacher learning. This research is to be conducted with pre-service teachers, practicing teachers, and university professors to determine the effectiveness of an online learning community in learning to teach and to investigate the experiences of the participants as they engage and communicate with each other in this learning community. This study was informed by a pilot project conducted in Fall, 2001.

**The research questions are:**

- a) What is the nature of the on-line conversations and how do they unfold over time within a session and across a semester?
- b) What does each participant group (i.e., pre-service teachers, practicing teachers, university professors) learn from communicating with the other participant groups about educational psychology? Learning to teach?
- c) What do participants report as the benefits and challenges of CMC as related to the study of educational psychology? Learning to teach?
- d) What are the benefits and difficulties of creating and maintaining a CMCL?

**II) PROCEDURES**

This project is designed to provide a viable alternative to field experiences for pre-service teachers at Virginia Tech by using video-based case studies as part of a web-based and password protected website that is designed for access to all participants. The website includes links to case studies, resource information sites, email and contact information, a chat room and a threaded discussion list to be used for posing problems, discussions, questions, ideas, etc. Students in one section of EDCI 4124, along with eight practicing teachers, and eight university professors will participate in this project by viewing video-based CD-ROM case studies. The case studies will

align with a topic being covered in the educational psychology course and a new case study will be made available four times a semester. Each case will use a problem-based learning strategy and will focus on solving authentic video-based cases that highlight the psychological, emotional, cultural, and social dimensions of teaching and learning. The students, you, and a professor will meet in a chat room and discuss each case study the week following each case session. Also, three times during the semester, discussions will be held asynchronously through threaded discussion lists. You may also communicate via email with students and professors at times of your choosing throughout the semester. Finally, at the end of the semester, you will be asked to voluntarily participate in an interview to last no longer than 30 minutes. This discussion will address the perceived benefits, advantages, disadvantages, and potentials of using technology to enhance teacher education. Information we gather from the electronic communications and the interviews will be used to help those of us in teacher education begin to understand the benefits and challenges technology provides for an alternative field experience. This information may be shared with a wider audience through presentations and/or publications.

### **III) BENEFITS**

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### **IV) RISKS**

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#### **V) ANONYMITY & CONFIDENTIALITY**

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#### **VI) FREEDOM TO WITHDRAW**

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***VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY***

**Informed Consent for Participants of Investigative Project**

**Investigators: Dr. Susan Magliaro and Carol Greene**

**Title of Project: A Computer-Mediated Community of Learners**

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**The research questions are:**

- e) What is the nature of the on-line conversations and how do they unfold over time within a session and across a semester?
- f) What does each participant group (i.e., pre-service teachers, practicing teachers, university professors) learn from communicating with the other participant groups about educational psychology? Learning to teach?
- g) What do participants report as the benefits and challenges of CMC as related to the study of educational psychology? Learning to teach?
- h) What are the benefits and difficulties of creating and maintaining a CMCL?

**II) PROCEDURES**

This project is designed to provide a viable alternative to field experiences for pre-service teachers at Virginia Tech by using video-based case studies as part of a web-based and password protected website that is designed for access to all participants. The website includes links to case studies, resource information sites, email and contact information, a chat room and a threaded discussion list to be used for posing problems, discussions, questions, ideas, etc. Students in one section of EDCI 4124, along with eight practicing teachers, and eight university professors will participate in this project by viewing four video-based CD-ROM case studies. The case studies

will align with a topic being covered in the educational psychology course and a new case study will be made available four times a semester. Each case will use a problem-based learning strategy and will focus on solving authentic video-based cases that highlight the psychological, emotional, cultural, and social dimensions of teaching and learning. The students, a practicing teacher, and a professor will meet in a chat room and discuss each case study the week following each case session. Also, three times during the semester, discussions will be held asynchronously through threaded discussion lists. E-mail communications may occur between the students, teachers, and professors as well, at times of their choosing throughout the semester. You, as the technical support person, will be available to help the students register for the website and help them with any difficulties they may encounter throughout the course of the semester. Finally, at the end of the semester, you will be asked to voluntarily participate in an interview to last no longer than 30 minutes. This discussion will address the perceived benefits, advantages, disadvantages, and potentials of using technology to enhance teacher education, as well as the challenges and benefits of maintaining a computer-mediated environment. Information we gather from the electronic communications and the interviews will be used to help those of us in teacher education begin to understand the benefits and challenges technology provides for an alternative field experience. This information may be shared with a wider audience through presentations and/or publications.

### **III) BENEFITS**

The benefits of this project will be the usefulness of the results to all of us involved in teacher education. It is becoming increasingly difficult to find opportunities for field experiences for the pre-service teachers due to the flood of college students entering the local schools for student teaching, student aiding, and other teaching experiences from the various programs on campus. Technology may offer one alternative to the traditional field experiences provided for students.

### **IV) RISKS**

There are no risks involved in this project, other than you may experience in everyday

activity. You will not be asked to be involved in any situation that will cause you any physical danger or emotional stress. No names or identifying markers of any kind will be used on the transcript from your interview.

## **V) ANONYMITY & CONFIDENTIALITY**

Information gathered in this project will be treated as confidential by the researchers. Upon completion of the project, it will be compiled and aggregated so any comments or information cannot be traced to the participants. It will be used only for the project by the investigators as stated above. No identifying markers of any kind will be placed on the transcript or any other document. Interviews will be conducted individually, pseudonyms will be used, and no one other than the researchers will have access to those tapes and transcripts. All tapes from the interviews will be stored at the researcher's home and will be destroyed upon completion of the project.

All information collected, such as transcripts of chats and threads will be destroyed after completion of the research project. We will use the information with strict confidentiality and all efforts will be made to ensure anonymity of the participants. However, because participants of this project will be communicating with each other and will thus know each other's identities, comments or information offered through electronic communication will be known about each other so that we cannot assure anonymity and confidentiality among the participants as pertains to the electronic communications. Additionally, since you are the only technical support person, any comments or opinions stated that could possibly be identified as having come from the technical support person will be traceable back to you.

## **VI) FREEDOM TO WITHDRAW**

You are free to withdraw at any time if you do not wish to participate in the study. If you have any questions about this project you can contact Dr. Susan Magliaro at 231-8338 or [sumags@vt.edu](mailto:sumags@vt.edu), Carol Greene at 231-8553 or [cgreene@vt.edu](mailto:cgreene@vt.edu), or Dr. David Moore, the chair of Virginia Tech Institutional Review Board at 231-4991 or [moore@vt.edu](mailto:moore@vt.edu)

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## APPENDIX C

### Planning Meeting Handouts

#### **DIRECTIONS FOR USING COURSECOMPASS**

##### **To Access the Site:**

Go to [www.students.pearsoned.com](http://www.students.pearsoned.com)

Enter your log in name and user password

My Log In Name is: \_\_\_\_\_

My Password is: \_\_\_\_\_

Click on the big blue link that says Foundations of Educational Psychology

Voila! You're on the home page!!

##### **To Post a Thread:**

Click on the Communication tab

Click on Discussion Board

Click on the Forum you wish to enter

Once you are in the forum you want:

*To post a new thread* – Click on the tab at the top that says “add new thread”, type your message in the message box, and click submit (If you want to just reply to someone’s post, you will use the method below)

*To reply to a thread already posted* – Click on the title of the thread, it will open a message box, type your reply and click submit. If you click on the person’s name rather than the title of their thread, your email account will open and you can send them an email.

*To attach a document to a thread* - simply enter the same way as above either by posting a new thread or replying. You will see a box that says attachment next to it. The box will be blank with a browse button next to it. Click on the browse button and choose the document you want to attach from its saved location in your computer. It works pretty much the same way as attaching something to an email. When you are finished, click submit.

##### **To Enter the Chat Room:**

Click on the Communication tab

Click on Virtual Classroom

Click on Enter Virtual Classroom – this takes a few minutes for this next part to load, depending on the speed of your computer

When the Chat Room appears, it will be smaller than the screen so you will want to enlarge it. Do this by clicking on the maximize box at the top right of the chat room screen (it just

looks like a square – between a line and an X). You will have a white board at the top where you can draw and a smaller box below that is where the text will appear that others type. You can make the text area larger, and easier to read, by placing your cursor on the bottom of the white board section and, while holding down on your mouse, pulling it up to make the white board section smaller. Do this by placing your cursor at the bottom edge of the white board, continue holding the mouse button down and when it shows an arrow pointing both directions, continue holding the button down on your mouse and drag upwards. You can type a message to the chat room by placing your cursor in the narrow bar at the very bottom of the chat room below the text box. When you finish typing your message, hit enter on your keyboard and your message will appear in the text box for everyone to read.

### **Other General Info:**

From the course homepage, you can access any part of the website.

Click on *Announcements* and you will see any announcements I have posted for the class.

Click on *Staff Information* and you will see my personal information – office hours, location, mail, etc.

*Course Documents* – you automatically see all of these listed on the course homepage. The syllabus is included here along with any other documents I will post throughout the semester. All of the chapters are listed here and in these chapter sections, you will find outlines of the chapters, study guides, etc.

Also included under Course Documents is the *Interactive Companion*. This site is where you will find certification information, lesson plan ideas, portfolio recommendations, etc. It's a wonderful resource.

Click on the *External Links* button to view and enter websites I may place links to that I think might be helpful for you. Click on the link and it will take you to that website automatically.

\*\*If you ever need it, the toll free tech support number is 1-800-677-6337 or you can email them at [support@coursecompass.com](mailto:support@coursecompass.com). They are open from 9am to 6pm Eastern Standard Time, Monday through Friday. Or you can email our technical support person.

*Class Schedule and Work Assignments*

<b>Date</b>	<b>Topic</b>	<b>Reading Due</b>	<b>Assignment(s) Due</b>
Aug. 27 & 29			
Sept. 3 & 5			
Sept. 10 & 12	Case #1		
Sept. 17 & 19			Chat #1
Sept. 24 & 26			Threaded discussion #1
Oct. 1 & 3			
Oct. 8 & 10	Case #2		
Oct. 15 & 17			Chat #2
Oct. 22 & 24			Threaded Discussion #2
Oct. 29 & 31			

Nov. 5 & 7	Case #3		
Nov. 12 & 14			Chat #3
Nov. 19 & 21			Threaded discussion #3
Nov. 26 & 28	<i>THANKSGIVING BREAK</i>		
Dec. 3 & 5	Case #4		
Dec. 10			Chat #4
Finals Week			

## Chat Room Etiquette “Chatiquette” ✍

These are a few thoughts on how you can have a productive chat room conversation with your teachers and professors. Being aware of a few simple matters of chat room etiquette can help your discussion be focused and productive and avoid the chaos and frustration that can occur in an unmoderated chat room. **Please remember this is a professional activity and the teachers and professors are volunteering their time to talk with you.**

\*\*First of all, you will be in groups and each group will have a teacher and professor serving as the group's facilitators. Log into the chat room, but wait for the teachers to open the forum for discussion before you start typing. They will begin the discussion. Carol will be working as the moderator (letting the teachers know when everyone is in the room and ready to begin, how much time is left, etc.)

\*\*Second, in a chat room you have to be conscious of trying to respond in a meaningful way to other people's thoughts and questions. In other words, read their response and reply to them similarly as you would in an oral conversation. If you want to say you agree with someone, say you agree, but also say why you agree. Work on having a discussion and try to avoid posting isolated comments. Try to respond in a full thought, not just a phrase or a few words. By doing this, it will keep the conversation to a pace that you can read and follow through with and that will also result in a productive conversation.

\*\*Try to maintain awareness of the flow of the conversation - who has asked a question, who is waiting for a response, etc, just as you do in verbal discussion.

\*\*Don't worry about capital letters, punctuation, spelling. Grammar doesn't count in a chat room – it has a life of its own. This makes your typing go much quicker. Just make sure it's readable and avoid using chat room “slang” from instant messenger type settings as all participants may not be aware of the meaning.

\*\*It takes the teachers a little longer to respond to many of you than it does for you to post your own question or thoughts. If you see your teacher using several dots like this.....at the end of a sentence or in the middle of a thought, it means to wait before you reply or make a new comment, he or she is completing a thought. This way, the teacher is posting something for you to be reading and processing so you don't have to be looking at blank white space, and it also allows him or her time to complete a thought before a new topic begins.

\*\*CHECK THE COMPUTER YOU WILL USE FOR THIS CHAT TO MAKE SURE IT WILL RUN THE PROGRAM **BEFORE** YOUR SCHEDULED CHAT TIME. The chat room is large and it can take awhile to download. If the computer you expect to use can't load it, you may need to find a computer on campus.

### *Setting*

This study will be conducted in EDCI 4124 – Foundations of Educational Psychology for Pre-Service Teachers. The course is held on the Blacksburg campus of Virginia Polytechnic Institute and State University, a large land-grant Research I institution. It is a required course in teacher certification programs and is offered through the Educational Psychology Program. Specifically, the class will meet twice a week for an hour and fifteen minutes each session in 118 War Memorial Hall.

Traditionally, this course has been centered on the teaching of psychological theories for education, but has had little opportunity for the pre-service teachers to observe and participate in the practical classroom applications of the theories studied. A need for an alternative to traditional field experiences exists, as it is becoming increasingly difficult to find opportunities for field experiences for the pre-service teachers due to the flood of college students entering the local schools for student teaching, student aiding, and other teaching experiences from the various programs on campus. This project seeks to provide one such experience.

In addition to the NCATE accreditation requirements for field experiences, this project helps to support the mission of teacher education at Virginia Tech. Specifically, the Center for Teacher Education supports several members of Virginia Tech's faculty involved in a Clinical Faculty Consortium. This Consortium is funded by the Virginia Department of Education and is comprised of Hollins University, Radford University, Virginia Tech and nine school divisions. The purpose of this Consortium, as stated by the Center for Teacher Education's website is:

to enhance the clinical experience (internships and student teaching) of pre-service teachers by collaboratively designing ways to initiate and integrate pre-service teachers into a school environment and to support their growth in learning to teach. The Consortium recognizes the critical importance of field experiences in a pre-service teacher's growth and the important contribution of classroom teachers who nurture that growth.

This project takes the Center's mission one step further by providing such school/university collaborative experiences earlier in the pre-service program as a field experience component before introduction to the internship and student teaching experiences. The research being

proposed seeks to study the implementation of this project through analyzing the activities and interactions of the participants as they communicate and learn about teaching.

In the next section about the participant groups, sampling procedures and the selection process for each group is discussed.

### *Participants*

The teachers and professors involved in this research are, of course, critical members of the project. Six teachers, all currently in practice, will communicate electronically with pre-service teachers in EDCI 4124, as well as with six faculty members from Virginia Tech. An additional, but very important participant, will be the technical support person.

### *Technical Support Person*

A technical support person will be hired with the grant money that is funding this research. This person will handle all of the logistical needs pertinent to the technical component of this study and will be available throughout the duration of the semester to handle any technical difficulties the students, teachers, or professors may have. Additionally, this person will serve as a critical component in helping me uncover the benefits and challenges of operating a computer-mediated community of learners.

### *Pre-service Teachers*

The sample of pre-service teachers will be based solely on those students enrolled in the course. A faculty member in the Educational Psychology program will implement the CD-ROM case studies and electronic communications in his section of the course this fall. The course will be taught in the Fall semester, 2002, on Tuesdays and Thursdays from 12:30-1:45. Thus, the students enrolling in that section of the course will be asked to become participants in this research.

### *Practicing Teachers*

The sample of practicing teachers was purposeful. As a previous teacher in the public schools, I knew of several outstanding teachers that I felt would be excellent role models for the pre-service teachers. I contacted two former colleagues and asked them to participate in this research. Both of these teachers participated in the pilot project and will continue with the project this fall.

One of the members of my dissertation committee is the coordinator of the mentoring program for a local school system and was able to provide me with the names of some

teachers she felt would be good candidates for participation. Two of them agreed to participate. Both were participants in the pilot project and both will continue with the project this fall.

The remaining two teachers will be new to the project this fall. One of the teachers is currently a part-time doctoral student while continuing to teach in the public school system and the other will not be a practicing teacher during the duration of this research, as she will be working with other teachers toward helping them achieve National Board Certification.

The practicing teachers participating in this project come not only from Virginia, but from North Carolina as well. This purposeful inclusion of practicing teachers from across two states is to provide the pre-service teachers access to teachers and classrooms from diverse areas with diverse perspectives. These teachers' teaching experiences span a range from kindergarten through twelfth grade, as well as experience in specialty areas such as technology, arts integration, and school leadership. Two of the teachers are Nationally Certified Teachers and one is in the process of earning that certification. They teach in rural settings, inner cities, and in small towns. Years of teaching experience range from 5 years to more than twenty-five years.

#### *University Professors*

The sample of university professors was also purposeful. I chose to ask six professors from the Department of Teaching and Learning and/or from the Department of Educational Research and Evaluation who were both proficient in the use of technology and had expertise in the area of teaching. University professors were not a part of the pilot project so they will be new participants this fall. However, three of the six professors participated in chat sessions with pre-service teachers in the Spring 2002 semester in the educational psychology course I taught so they will have had some experience in the expected uses of electronic communication in the course.

I attempted to locate professors who I felt would not only serve as additional excellent role models for the students, but who also had backgrounds and experiences that would augment and support the expertise of the practicing teachers. The university professors have a range of teaching experiences from a range of locations within the United States, England, and Mexico. Their years of experience at the university range from three years to 18 years. Their areas of expertise include secondary math, secondary social studies,

elementary education, English as a Second Language, special education, higher education, and adolescent development. The university professors bring very unique perspectives and a wealth of diversity and background experiences to share in this project. The role they play in this learning community is crucial. They will serve as the bridge between the two worlds of school and university. They will bridge the communication between the students and the teachers to help the students make connections from theory to practice and from university to school.

As stated earlier, the inclusion of a diverse group of teachers from various areas with a range of teaching experiences was purposefully conducted and intended to provide the pre-service teachers with access to diverse perspectives on teaching. The next section discusses the procedures for contacting the various participants as well as the plans for informed consent procedures.

#### *Informed Consent Procedures*

Request for exemption will be made to the university IRB for this study. Upon acknowledgment from the university that this research may be conducted, the informed consent process will begin. All participants, pre-service teachers, practicing teachers, and university professors, will be asked to consent to participation in this study by signing an informed consent form. The informed consent forms will be different for each participant group, specifically outlining anonymity and confidentiality guidelines, as well as any potential risks involved for that particular group. See Appendix B for the Institutional Review Board proposal and Informed Consent Forms. Once permission from the participants has been granted, data collection and analysis will begin.

#### *Setting up the Computer-Mediated Community of Learners*

As mentioned earlier, the pilot work informed the procedures and design of this proposed project. One of the suggestions from the teachers in the pilot study was to have the teachers be more involved in the design, as well as the implementation, of the project. To this end, a meeting between myself, Susan Magliaro, and the teachers will take place prior to the beginning of the fall semester in order to plan this portion of the course collaboratively. All teachers and professors have agreed to participate in the study this fall, so further contact, beyond this planning meeting, will be through e-mail correspondence in order to finalize or clarify any plans.

The pre-service teachers will be required to participate in these activities as required components of their course. However, they will not be required to allow their work or comments to be used for research purposes. The pre-service teachers will be informed of the course requirements, as well as the research being conducted in their course on the first day of class. In this way, they have the option of whether to participate in this course or in the research itself.

During the second week of classes, once enrollment has been ensured, students in EDCI 4124 will be registered for access to the Course Compass website. A technical support person will be hired to take care of the technical issues of getting this learning community operational. Students will need to be registered for the site, as well as create student home pages with their picture and a brief introduction of themselves posted on their home page. Although this site is very user friendly, they will likely need the support of the technical support person to accomplish this. This person will make his/her services available throughout the duration of the semester, although it is expected that the bulk of the work will occur on the front end in getting everyone registered and operational.

Next, I discuss the sources of data that will be used and the collection procedures that will be followed.

#### *Data Sources and Collection Procedures*

Data will be collected throughout the course of the Fall, 2002 semester, from August to December. Much of the data, mainly comprised of documents and observations, will be collected as the course proceeds throughout the semester; however, some of the data, such as the interviews, will be collected near the end of the semester. It is the procedure for collecting the on-going cycle of data production, specifically the documents, that is described first since it is the most complex.

#### *Documents*

Documents will include assignments the students complete for class, reflective comments, transcripts of chats and threaded discussions, and electronic mail correspondence. Next, each of these documents is discussed in terms of implementation of procedures used to generate the specific documents and the methods of collection of those documents.

*Assignments and reflection tasks.* The students in the course will view four CD-ROM case studies throughout the course of the semester, one a month from September to

December, that align with the concepts and theories being discussed in class. After each case study, the students will complete a brief in-class assignment pertaining to the particular case they have just viewed. They will also be asked to complete a reflection task asking them for their thoughts on what they viewed and asking them to pose questions they would like to ask about the particular case or any aspect of teaching that case may have high-lighted.

*Transcripts of chat sessions and threaded discussion lists.* A central aspect of this course includes the electronic communication that will occur between the teachers, professors, and students. This communication will take three forms – email, chats, and threaded discussion lists. A CourseCompass website will be used that supports each of these communication features. The site automatically saves and archives all communication. These communications will generate documents to be analyzed. Each form of communication is discussed next as to the procedures for implementing the communication and for collecting the data.

Chat sessions will occur four times throughout the course of the semester. These chat sessions will last approximately 45 minutes and will occur during the week outside of class time. Each chat will be lead by one teacher and one professor. Teachers and professors will choose a time that they are available to lead a chat. A sign-up sheet will be generated with the teachers' chat times listed. These signup sheets will be taken to the classroom so the students may sign up for the teacher they would like to chat with for that week's chat.

These weekly chat sessions will occur the week after the students have viewed the case studies in class. The teachers will have viewed these case studies as well, on their own, so they will be aware of what the students have been exposed to and would thus be able to communicate more effectively with the students. Topics for each chat will be given to all the participants so there will be a frame with which to begin the conversation. Again, those topics will align with what the students are studying in class as well as with the case study they have just viewed.

Threaded discussion lists will occur throughout the semester as well. They will be less structured than the chat sessions, but they will be a required component of the course. Initially, in August, they will be used for each teacher and professor to post an introduction of themselves so the students will know their backgrounds and experiences. After this initial posting, these threads will be focused on various educational topics the students, teachers,

and professors will discuss. There will be three topics for threaded discussions posted during the semester, one in each month of September, October, and November. Additionally, during the course of the semester, threaded discussion lists will be used to prepare for a chat by providing context or background and/or to extend upon a chat upon completion of that chat if the participants would like to continue the conversation that was begun or if the participants have questions or comments related to the chat.

A second use of the threaded discussion list will be for practicing teachers and university professors only. The pre-service teachers will have access to this forum of the threads to read, but they will be requested to not post to it. This forum will be a networking and resource opportunity for the teachers. This component of the project stems from a suggestion from one of the teacher participants in the pilot project. It was suggested that this might be a good opportunity for teachers with diverse backgrounds and experiences to share ideas and communicate with each other. This part of the threaded communication will be entirely voluntary on the part of the teachers and will be there for them if they choose to use it. As part of the planning procedures for this project, I have spoken with several of the teacher participants about this component and a fairly high level of interest appears to be there, so it seems that this may be a well-used resource for them and it would be an excellent opportunity for the pre-service teachers to witness conversation among practicing teachers.

*Email correspondence.* Finally, the email component of the communication will be the least structured activity. Although students will have choices of those teachers and professors they wish to chat with during the semester, they will be assigned to a teacher or professor, through mutual agreement, to be their informal mentor throughout the semester. They will communicate by email with their mentor throughout the semester at times of their and their mentor's choosing. A listserv will be created for each group of mentor and students with my email address included so that I will receive copies of all email communication.

The teachers and professors will have a copy of the syllabus and course requirements so they will be aware of what the students are studying in class. This feature may allow the professors and teachers to share ideas, resources, and/or materials with the students, while also allowing the students access to others outside the realm of the university classroom with whom they may discuss classroom topics. The students will have access to all the teachers' and professors' email addresses so they would not be limited to only asking questions of their

mentor, but could email others as well if they had a particular interest in, or question for, one of the teachers or professors.

As stated previously, the collection of the documents as data in this course is the most involved. The final two data sources are just as critical to this research process, but involve less explanation. The final two sources of data to be discussed include observations and interviews.

### *Observations*

I will act as observer-participant in this course and will take field notes on my observations of the interactions and communications that occur in the classroom. I will attend each class, thirty sessions, and create field notes about each session. I believe that it is not possible to describe classroom dynamics solely by interviewing the population within the classroom. First-hand observations are needed that provide a rich description of the classroom activities and discourse.

### *Interviews*

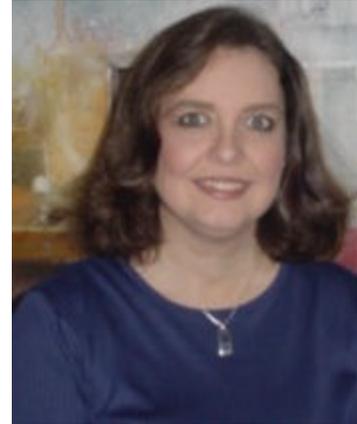
Semi-structured interviews will be conducted with each teacher, professor, and student, as well as the technical support person toward the end of the semester in order to learn what the experiences have been like for them during the semester, what they learned, etc. In addition, teachers and professors will be asked to complete a very brief online questionnaire at midterm in order to ask them for any feedback, suggestions, or concerns they may have. Since students will provide feedback throughout the course of the semester in class and in response to direct communication from the instructor, they will not be asked to complete a midterm questionnaire. Appendix C includes the interview guides to be used with the teachers, professors, and students.

## APPENDIX D

### Sample Homepage

#### **Intro Message**

Hi! My name is Carol Greene and I am a doctoral candidate in Teaching and Learning. I'm in the Educational Psychology Program and my focus has been in Child Development, Teacher Education, and Qualitative Research. Thank you for allowing me to join your class this semester and learn more about pre-service teacher education.



OK

## APPENDIX E

### Directions for Editing and Locating Homepages

#### **Directions for Editing Your Homepage**

To post to or to edit your homepage:

1. Click on the Tools tab on the left side of the CourseCompass Home Page
2. Click on Edit Your Homepage
3. Type your introductory note about yourself in the box that says Intro Message
4. Ignore all the other boxes for adding links, etc. You don't need to do that.
5. Scroll down and click submit at the bottom of the screen

#### **Directions for Locating Other's Homepages**

To find a teacher's or professor's or student's homepage:

1. Click on the Communications tab on the left side of the CourseCompass Home Page
2. Click on Roster
3. Click on the Search tab. In the box, enter the last name of the person whose home page you would like to view and click the search button right next to that box
4. The person's name will appear. Click on the name and that will take you to their home page.
5. If you would like to view them all, click on all users and then go through them one at a time.

## APPENDIX F

### Email Introduction

Date: Thu, 08 Aug 2002 10:02:36 -0400  
From: Carol Greene <cgreene@vt.edu>  
Subject: Introduction  
X-Sender: hgreene@mail.vt.edu  
To:  
Cc: cgreene@vt.edu  
X-Mailer: QUALCOMM Windows Eudora Version 5.1

Hi Sally and Janice!

I've never actually introduced anyone over email before, but I'll give it my best shot! Sally meet Janice and Janice meet Sally :-). You two are going to be partners this fall in the project, leading the chats together.

Sally - I used to teach with Janice when we both lived in North Carolina. We both taught fifth grade together and quickly became very good friends. I've known her for 12 years and consider her like family!! She has been through both my masters and my PhD degrees and I really couldn't have done it without her support (and technological support too :-). We not only taught together, but were next door neighbors for a couple of years. Janice now teaches in fifth grade in an inner city school in her state.

Janice - Sally is a professor in the Educational Psychology program at Tech. I'm thinking you two might have met when you came to visit me one time? Sally has become a very good friend of mine as well, much more than just another professor in the program. We've had lunches and long talks and she has always treated me more like a colleague than just another grad student. She taught eighth and ninth grade in Miami, FL and her area of research expertise is in Adolescent Development.

When I paired up professors, I tried to consider not only people who had similar education backgrounds, but who had similar personalities and who I thought could work well together. You both share an expertise with middle childhood and adolescence, but your personalities are very similar as well. You are both pretty laid back and don't get your feathers ruffled over minor things. You also both have a good sense of humor and kind of take things as they come. I think you will really enjoy getting to know each other.

The first case session and chat isn't until September, but I'll go ahead and give you each other's emails in case you would like to say hello. Sally's email is xxx@vt.edu and Janice's email is [xxx@xxx](mailto:xxx@xxx).

OK - I'll be back after the semester starts and it's time to schedule chats. I really can't tell you guys how appreciative I am that you're willing to work with the preservice teachers and to help me out like this with my dissertation! It makes it much less stressful to know that I have friends out there who are so supportive! Thanks sooooo much! Carol

## APPENDIX G

### Email to Teachers and Professors

Hi everyone!

I hope you all are having fun this summer and getting lots of sun and lots of rest!!

I just wanted to email to let you know of a couple of minor changes in plans for the fall. I recently met with my dissertation committee and they suggested that we not do the email mentoring component. They had two concerns - one was the amount of time it might take on your parts and the other was they were worried about skewing the findings about the helpfulness of the chats and threads. They suggested that if some students took more advantage of the email mentoring than other students might, they would be at a qualitatively different place than the students who did not participate as much and we might not be able to tell how valuable the chats were. So, we can knock that off our to do lists. :-) So that just leaves the 4 chats and the 3 threaded discussions. I have met with Peter (the professor who will be teaching the class) and we chose the 4 case studies that will be used this fall. I placed the order and will get them mailed to you as soon as they arrive. For those of you in town, I'll bring them by your school when you start back. The first chat isn't until September so there's plenty of time yet. The four case studies will be used in this order: 1) Larry Beaudin, 2) Brenda Beyer, 3) Derek Rentz, and 4) Assessment. As we talked about, the students will see the video in class the week before they chat with you so we're sending a copy to you just so you will know where they're coming from. They are fairly brief - about 20 minutes to 30 minutes max. In with this, I'll also include a W-4 for you to sign and return to me so you can receive your honorarium in December. You can use these cases as a starting point for your conversation if you want, but your conversation doesn't need to remain centered on the case. And it probably won't - the students typically want to know more about your experiences and ask lots of questions about your practice. After you sign up for chat times, I'll always send reminders about when your chat is as well as when it's a week for a threaded discussion so you don't have to worry about remembering. I'll also remind you at the same time what case it is again for that week so you don't need to worry about remembering. I won't let you forget anything :-)

The committee also had one more suggestion. They suggested that I ask the teachers and professors about what leading the chat was like, maybe why you made certain comments, or how you were trying to help the students, etc. They want me to learn about the processes that go on. They would like me to contact a "team" after a chat for a 10-15 minute debriefing. We have 4 weeks of chat times and 8 teams, so during each chat week, I'll contact two teams for this. You will only be asked to do this once during the semester (and of course are always free to say no) and it will take no longer than 10 to 15 minutes. I'll ask you in advance if you would be willing to do the debriefing for a particular week, probably when you sign up for your chat times. If you are willing to do this, I'll just call you on the phone at wherever you are leading the chat from, home or office, when you have finished chatting and just ask you a few questions over the phone. I'll also pre-arrange with you who would like to be contacted first and second since there will be two of you leading the chat together.

And finally, you should have received an email recently confirming your registration to the class website. That email contains the web address and your username and password. I kept copies if you have lost it. So please let me know if you didn't receive it. I'll be sending individual emails in just a bit introducing you to your partners and sending along their contact information.

I have also attached a list of all the teachers and professors who are participating in the project so you can have a sense of who's out there and what their backgrounds are. I have already set up the forum on the website that will be the Teacher Networking Thread for those of you who wanted to do that. That is totally optional - it's just there for those of you that were interested in doing that, but all of you are welcome to participate. You can begin accessing the website any time now. The second attachment is an article that my advisor and I wrote and recently sent in for review to a journal called *Mentoring and Technology* - it's about the results of the pilot project. I thought those of you that participated in that might be interested.

I have no words to tell you how much I appreciate your willingness to participate in this project. There is probably not a busier group of people on the earth than teachers and professors, so I am extremely appreciative of, and humbled by, your generosity. Please contact me at any time if you have any questions or concerns. You can email me or call me at home 540-552-4337, at work 540-231-8553, or on my cell phone 540-230-8446 at *any* time. I have two lines so I can be online and on the phone at the same time. And again, thank you so much!!

Enjoy the rest of your summer!!!!

Carol  
Carol Greene, PhD Candidate, Educational Psychology  
Graduate Research Assistant  
Center for Excellence in Undergraduate Teaching  
110 Hillcrest Hall  
Virginia Tech  
Blacksburg, VA 24061  
Office: 540-231-8553  
Fax : 540-231-4522

"The desire to reach for the stars is ambitious, the desire to reach hearts is wise" - Maya Angelou

"No act of kindness, no matter how small, is ever wasted" - author unknown



**EVALUATIONS:**

Student performance will be evaluated in five ways, on-line quizzes, a lesson plan project, a teaching/learning philosophy statement, a series of case assignments, and a comprehensive evaluation. The on-line quizzes will be comprehensive, consist of multiple choice questions and/or short answer/essay questions, and will be posted on the professor's web site. The lesson plan project will require students to create and delineate a full lesson plan for a specific topic. The philosophy statement will require students to write a paper illuminating their own personal philosophy of the teaching/learning process based on the empirical evidence discussed in class. The case assignments will be based on video/CD cases presented during class. The comprehensive evaluation will consist of multiple-choice questions and will be available on the professor's web site. The exact natures of the lesson plan project and philosophy statement are in the *Lesson Plan Project* and *Teaching/Learning Philosophy* handouts.

**GRADING:**

Quizzes	250 pts	(10 x 25)
Lesson Plan Project	150 pts	
Teaching/Learning Philosophy	200 pts	
Case Assignments	300 pts	
Chats	60 pts	(4 x 15)
Online Reflections	60 pts	(4 x 15)
Threaded Discussions	60 pts	(3 x 20)
In-class KWLs	60 pts	(4 x 15)
In-class Post-Case Observations	60 pts	(4 x 15)
Comprehensive Evaluation	100 pts	

A	1000-980pts	100-98%	B+	899-870pts	89-87%	C+	799-770pts	79-77%	D+	699-670pts	69-67%
A	979-940	97-94	B	869-840	86-84	C	769-740	76-74	D	669-640	66-64
A-	939-900	93-90	B-	839-800	83-80	C-	739-700	73-70	D-	639-600	63-60

No make-up quizzes or evaluations will be given. Any quiz or evaluation **not** taken will receive a grade of zero. Submitting the *Lesson Plan Project*, *Teaching/Learning Philosophy*, or *Case Assignments* late will result in a reduced grade, 50 points per day late. If you find it necessary to drop this course, for any reason, you must drop the class by October 4, 2002. Students that are not officially dropped from the class must be given a grade at the end of the semester. All students are expected to attend class regularly and promptly.

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## **COMPUTER REQUIREMENTS FOR CASE ASSIGNMENTS:**

Each student must have *access* to a computer with the following system configurations to participate adequately in the Case Assignments:

Adobe Acrobat Reader 5.0,

Windows 95 or 98 with 64 megabytes of RAM and a Pentium II processor, or

Mac OS 8 or higher with 64 megabytes of RAM and a G3 processor.

Please check to make sure you have adequate access to an appropriate computer prior to the first scheduled chat session.

To log on to the chat site after you are registered, go to <http://www.students.pearsoned.com>. Click on LOG IN, enter your USERNAME and PASSWORD, click on the big blue link that says Foundations of Educational Psychology, and you are good to go! *Make sure you use Internet Explorer for your browser, not Netscape.* If you need general technical help, the Tech Support number is 1-800-677-6337. If you need specific help logging-in, you can contact the Tech Specialist for this course, Pris Sears, at [sears@vt.edu](mailto:sears@vt.edu).

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## **DISABILITIES:**

Any student that is in need of special accommodations due to a disability, as recognized by the Americans with Disabilities Act, should contact the Services for Students with Disabilities (SSD) in the Dean of Students Office. "Students with disabilities are responsible for self-identification....To be eligible for services, documentation of the disability from a qualified professional must be presented to SSD upon request. Academic adjustments may include, but are not limited to: priority registration, auxiliary aids, program and course adjustment, exam modifications, oral or sign language interpreters, cassette taping of text/materials, notetakers/readers, or assistive technology" (see <http://filebox.vt.edu/admin/eoaa/ada.html>).

## **HONOR CODE:**

The Honor Code will be strictly enforced in this course. All assignments submitted shall be considered graded work, unless otherwise noted. All aspects of your coursework are covered by the Honor System. Any suspected violations of the Honor Code will be promptly reported to the Honor System. According to the Constitution of the Virginia Tech Honor System "The fundamental beliefs underlying and reflected in the Honor Code are: (1) that trust in a person is a positive force in making that person worthy of trust, (2) that every student has the right to live in an academic environment that is free from the injustices caused by any form of intellectual dishonesty, and (3) that the honesty and integrity of all members of the university community contribute to its quest for Truth. " (see <http://filebox.vt.edu/studentinfo/ugradhonor/>)

The following is the Honor Code written verbatim from the VT Honor System Constitution:

The Honor Code is the University policy that expressly forbids the following academic violations:

1. Cheating -- Cheating includes the actual giving or receiving of any unauthorized aid or assistance or the actual giving or receiving of any unfair advantage on any form of academic work, or attempts thereof.
2. Plagiarism -- Plagiarism includes the copying of the language, structure, ideas and/or thoughts of another and passing off same as one's own, original work, or attempts thereof.
3. Falsification -- Falsification includes the statement of any untruth, either verbally or in writing, with respect to any circumstances relevant to one's academic work, or attempts thereof. Such acts include, but are not limited to, the forgery of official signatures, tampering with official records, fraudulently adding or deleting information on academic documents such as add/drop requests, or fraudulently changing an examination or other academic work after the testing period or due date of the assignment.

**INTASC (Interstate New Teacher Assessment and Support Consortium) Standards:**

Principle 1: The teacher understands the central concepts, tools of inquiry, and structures of the discipline(s) she or he teaches and can create learning experiences that make these aspects of subject matter meaningful for students.

*Assessment:* Quizzes, Lesson Plan Project, Case Studies, Cumulative Evaluation

Principle 2: The teacher understands how children learn and develop, and can provide learning opportunities that support their intellectual, social and personal development.

*Assessment:* Quizzes, Lesson Plan Project, Case Studies, Cumulative Evaluation

Principle 3: The teacher understands how students differ in their approaches to learning and creates instructional opportunities that are adapted to diverse learners.

*Assessment:* Quizzes, Lesson Plan Project, Case Studies, Cumulative Evaluation

Principle 4: The teacher understands and uses a variety of instructional strategies to encourage students' development of critical thinking, problem solving, and performance

skills.

*Assessment:* Quizzes, Lesson Plan Project, Case Studies, Cumulative Evaluation

Principle 5: The teacher uses an understanding of individual and group motivation and behavior to create a learning environment that encourages positive social interaction, active engagement in learning, and self-motivation.

*Assessment:* Lesson Plan Project, Teaching/Learning Philosophy

Principle 6: The teacher uses knowledge of effective verbal, nonverbal, and media communication techniques to foster active inquiry, collaboration, and supportive interaction in the classroom.

*Assessment:* Lesson Plan Project, Teaching/Learning Philosophy

Principle 7: The teacher plans instruction based upon knowledge of subject matter, students, the community, and curriculum goals.

*Assessment:* Lesson Plan Project, Teaching / Learning Philosophy

Principle 8: The teacher understands and uses formal and informal assessment strategies to evaluate and ensure the continuous intellectual, social and physical development of the learner.

*Assessment:* Quizzes, Lesson Plan Project, Case Studies, Cumulative Evaluation

Principle 9: The teacher is a reflective practitioner who continually evaluates the effects of his/her choices and actions on others (students, parents, and other professional in the learning community) and who actively seeks out opportunities to grow professionally.

*Assessment:* Lesson Plan Project, Teaching/Learning Philosophy, Case Studies

Principle 10: The teacher fosters relationships with school colleagues, parents, and agencies in the larger community support students' learning and well-being.

*Assessment:* NA

**CLASS CONTENT SCHEDULE (TENTATIVE):** All classes are T R 12:30-1:45 in Rm 118, Gym

Date	Topic	Cases	Assignments Due
8/27	T Introduction		
8/29	Th Classroom Management I		
9/3	T Classroom Management II		
9/5	Th Introduction to Chat Tech		Quiz #1
9/10	T Instructional Design 1		
9/12	Th Instructional Design 2	Case #1	
9/17	T Classical Conditioning 1	Chat #1	Quiz #2
9/19	Th Operant Conditioning 1	Threaded Discussion #1	Quiz #3
9/24	T Operant Conditioning 2		
9/26	Th Operant Conditioning 3		
10/1	T Social Learning Theory 1		Quiz #4
10/3	Th Social Learning Theory 2		
10/8	T Information Processing 1		Quiz #5
10/10	Th Information Processing 2	Case #2	
10/15	T Information Processing 3	Chat #2	
10/17	Th Information Processing 4	Threaded Discussion #2	
10/22	T Information Processing 5		
10/24	Th Information Processing 6		
10/29	T Constructivism 1		Quiz #6
10/31	Th Constructivism 2		
11/5	T Instructional Strategies 1		Quiz #7
11/7	Th Instructional Strategies 2	Case #3	
11/12	T Instructional Strategies 3	Chat #3	

11/14	Th	Instructional Strategies 4	Threaded Discussion #3	
11/19	T	Motivation 1		Quiz #8
11/21	Th	Motivation 2		Lesson Plan Project
11/26	T	Thanksgiving Break		
11/28	Th	Thanksgiving Break		
12/3	T	Assessment 1		Quiz #9
12/5	Th	Assessment 2	Case #4	T/L Philosophy
12/10	T	Assessment 3	Chat #4	
12/12	Th	Reading Day	No Threaded Discussion	Quiz #10

# PSYCHOLOGICAL FOUNDATIONS OF EDUCATION FOR PRE-SERVICE TEACHERS - EDCI 4124 CASE ASSIGNMENTS

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**Purpose:** The purpose of this assignment is to provide students with the opportunity to interact with real-world teaching scenarios with the guided assistance of practicing teachers. Pre-service teachers are often confused with regard to how to “handle” certain classroom situations. Engaging with the teacher scenarios and the practicing teachers will allow students to ask needed questions, gain perspective on the teaching profession, and learn how to think about the school environment through the lens of a teacher.

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**Rationale:** Thirty -50% of teachers leave teaching within the first 5-10 years (Darling-Hammond, 1997). Much of this attrition rate may be due to teachers who are under prepared to face the complexities of daily life in a classroom (Goodlad, 1994). Historically, teacher education programs have been based on the belief that learning to teach is simply a process of acquiring knowledge about teaching (Carter, 1990). Recent shifts in practice situate the individual in the center of the context of learning to teach. This pedagogical and curricular shift affords the opportunity for preservice teachers to construct their own knowledge within the authentic environment of the classroom (Borko & Putnam, 1996). Preservice teachers then can better understand the realities of practice and the ways that academic knowledge can transfer and facilitate their teaching success and satisfaction.

This perspective also assumes the importance of learning environments that allow the student to confront dilemmas and to problem solve and construct meaning for themselves within a social network of supportive others. In a survey conducted by Smylie (1989), teachers reported 'consultation with other teachers' as the most effective source of learning to teach second only to 'direct experience as a teacher.' The implications of this for teacher education would suggest that pre-service and/or novice teacher learning be supported by a social network of more experienced others guiding them in their development as new teachers.

The larger goal of this assignment is to provide opportunities for students to learn about teaching in the practice of teaching and to bring to life through practical application, the psychological theories and constructs learned in the course. More specifically, this assignment has three particular goals :

1. To increase the students' abilities to problem-solve in and about diverse and complex teaching situations.
2. To enhance the students' learning about the theories and concepts which are taught in the educational psychology course.

3. To help guide the students along the learning to teach continuum from novice to expert. Of course, it is not expected that the students will leave the course as expert teachers, but my goal is to foster and encourage development in learning to teach.

**Format:** The Case Assignment is really a series of four live-action video scenarios with five activities that revolve around the live-action video scenario. The five activities include:

1. *Online Chats:* There will be four online chats that will last for approximately 45 minutes each. Each online chat will occur the week following each case study. Students will be provided with choices regarding chat times and chat leaders (all chats will be moderated by a practicing K-12 teacher and a university professor of education). Students are responsible for engaging in the chats and contributing to the construction of meaning within the chat.
2. *Online Reflections:* There will be four online reflections that are to be completed the night of each online chat. Each reflection will be comprised of a series of questions and will be available online. The reflection questions will involve relevant content and processes, as well as self-reflection and self-questioning.
3. *Online Threaded Discussions:* There will be three online threaded discussions the week following the first three online chats. For each threaded discussion a question will be posted to begin the discussion. Students are responsible for reading the posts prior to their postings and responding to the discussion (i.e., posts should not simply address the question, but also students' prior posts).
4. *In-Class KWLs:* During the class period in which each case study will be presented, students will complete worksheets that probe (a) What do you already know about today's topic?, (b) What would you like to know about today's topic?, and following the case study and subsequent activities, (c) What have you learned about today's topic?
5. *In-Class Post-Case Observations:* During the class period in which each case study will be presented, and following the viewing of the case study, students will work in groups to investigate the questions, concerns, and solutions resulting from the case study.

Each of the four case assignments is comprised of a three-week cycle of activities. This cycle of activities is as follows:

The first week of a case assignment cycle:

In-Class KWL  
In-Class Case Study

### In-Class Post-Case Observation (in groups)

Then, the second week of the cycle:

Online Chat

Online Reflection

Then, the third week of the cycle:

Online Threaded Discussion.

This three-week cycle will be repeated four times during the semester. However, on the fourth cycle the online threaded discussion will not be completed.

**Grading:** Each Case Assignment activity will be graded using the following criteria:

1. *Online Chats:* Each online chat is worth 15 points based on the following:

15 Points: The student actively engages in the chat and contributes fully to the creation of meaning within the chat, as evidenced by numerous postings of insight and analysis.

10 Points: The student engages in the chat and contributes to the discussion, although provides little impetus into knowledge creation, as evidence by numerous postings.

5 Points: The student contributes little to the chat and to the construction of meaning as evidenced by few posting with little or no insight.

2. *Online Reflections:* Each online reflection is worth 15 points based on the following:

15 Points: The student provides a thoughtful and thorough reflection on the chat discussion, the content under consideration, and questions left to be answered as evidenced by synthetic and insightful statements.

10 Points: The student provides a thoughtful reflection on the chat discussion, the content under consideration, and questions left to be answer as evidenced by declarative statements, as opposed to insightful statements.

5 Points: The student provides little reflection on the chat discussion, the content under consideration, and questions left to be answered.

3. *Online Threaded Discussions:* Each online threaded discussion is worth 20 points based on the following:

15 Points: The student actively engages in the chat and contributes fully to the creation of meaning within the chat, as evidenced by numerous postings of insight and analysis.

- 10 Points: The student engages in the chat and contributes to the discussion, although provides little impetus into knowledge creation, as evidenced by numerous postings.
  - 5 Points: The student contributes little to the chat and to the construction of meaning as evidenced by few posting with little or no insight.
4. *In-Class KWLs*: Each in-class KWL is worth 15 points based on the following:
- 15 Points: The student actively engages in each aspect of the KWL providing clear, coherent, and thorough responses as evidenced by complete sentences and complete thoughts.
  - 10 Points: The student engages in each aspect of the KWL providing sufficient responses as evidenced by complete sentences, but incomplete thoughts.
  - 5 Points: The student engages little in each aspect of the KWL providing insufficient responses as evidences by incomplete sentences and thoughts.
5. *In-Class Post-Case Observations*: Each in-class post-case observation is worth 15 points based on the following:
- 15 Points: The student provides a thoughtful and thorough response to the post-case observation questions as evidenced by synthetic and insightful statements.
  - 10 Points: The student provides a thoughtful response to the post-case observation questions as evidenced by declarative statements, as opposed to insightful statements.
  - 5 Points: The student provides little response to the post-case observation questions.

**Timeline:**

See Syllabus.

**Honor Code:** The Honor Code will be strictly enforced on this assignment. Any suspected violations of the Honor Code will be promptly reported to the Honor System. Students are allowed to discuss with other students the nature of this assignment and their general thoughts regarding each activity. Students are not allowed to provide other students in the class with copies of his or her writing, nor should students discuss the specifics of what he or she intends to include in his or her writing. In addition to the above statements, the Honor Code general principles of cheating, plagiarism, and falsification are still applicable (see <http://filebox.vt.edu/studentinfo/ugradhonor/>).

## References:

- Borko, H. & Putnam, R.T. (1996). Learning to teach. In D.C. Berliner and R.C. Calfee (Eds.), *Handbook of educational psychology* (pp. 673-708). New York: Simon and Schuster Macmillan.
- Carter, C. (1990). Teachers' knowledge and learning to teach. In W.R. Houston (Ed.), *Handbook of research on teacher education* (pp.291-310). New York: Macmillan.
- Darling-Hammond, L., Wise, A., & Klein, S. (1997). *A license to teach: Raising standards for teaching*. San Francisco: Jossey-Bass.
- Goodlad, J. (1994). *Educational renewal: Better teachers, better schools*. San Francisco, CA: Jossey-Bass.
- Smylie, M. (1989). Teachers' views of the effectiveness of sources of learning to teach. *The Elementary School Journal*, 89(5), pp.543-558.

APPENDIX I

Sample Chat Schedule

CHAT SCHEDULE #2

MONDAY, Oct. 14, 2002

**Jerry Wilson**  
**10:45-11:30**

*Dr. Wilson* teaches Mathematics Education at Virginia Tech. He previously taught math in the public schools to ninth through twelfth grades for three years in North Carolina.

- 1. \_\_\_\_\_
- 2. \_\_\_\_\_
- 3. \_\_\_\_\_
- 4. \_\_\_\_\_

**Tony Dawson and Mary Beth Olson**  
**5:00-5:45 p.m.**

*Dr. Dawson* is a professor of Educational Psychology with past experience in teaching computer science to fourth through twelfth graders and math to seventh through ninth graders in Maryland. *Mrs. Olson* is the coordinator of the Gifted/Talented program for her school system and has 23 years teaching experience. She has taught a combined third and fourth grade class, seventh grade science and social studies, sixth grade and second grade. She recently achieved National Board Certification.

- 1. \_\_\_\_\_
- 2. \_\_\_\_\_
- 3. \_\_\_\_\_
- 4. \_\_\_\_\_

**Miriam Quidley and Rhonda Hannah**  
**7:00-7:45 p.m.**

*Dr. Quidley* taught for seven years in the public school systems in South Carolina and Virginia. Her areas of expertise are in literacy instruction and elementary education. *Mrs. Hannah* teaches Elementary Art in for her school system. She has taught for 27 years in elementary and middle school settings. She recently achieved National Board Certification.

- 1. \_\_\_\_\_
- 2. \_\_\_\_\_
- 3. \_\_\_\_\_
- 4. \_\_\_\_\_

TUESDAY, Oct. 15, 2002

**Shawna Thomas and Victoria Ceron**  
**5:00-5:45 p.m.**

*Mrs. Thomas* teaches second grade in another state. She has also taught third grade and has been teaching one of those grades or the other for 27 years. She recently attained National Board Certification and is also a certified teacher of the gifted. *Dr. Ceron* taught Educational Research courses here at Tech, but is in on leave this year. She previously taught fifth grade for three years along the Arizona/Mexico border to bilingual students. She is fluent in Spanish.

- 1. \_\_\_\_\_
- 2. \_\_\_\_\_
- 3. \_\_\_\_\_
- 4. \_\_\_\_\_

**Angela Porter and Nancy Smith**  
**8:00-8:45**

*Dr. Porter* teaches Elementary Education courses and supervises student teachers here at Tech. Her area of expertise is literacy. She taught for three years in England in an elementary inner city school, one year in Germany teaching English as a second language, one year in Elat, Israel teaching English as a second language, three years in Florida in an elementary multi-age alternative program in the public school system, and four years as a kindergarten teacher in Florida at a private school that she owned. She has also worked as a substitute teacher in local schools. *Mrs. Smith* teaches fifth grade here in Blacksburg for Montgomery County Schools. She has taught for 21 years. She taught first grade for 13 years and fifth grade for eight years. She was honored to receive national recognition for her teaching by being named in *Who's Who Among American Teachers*.

- 1. \_\_\_\_\_
- 2. \_\_\_\_\_
- 3. \_\_\_\_\_
- 4. \_\_\_\_\_

**WEDNESDAY, Oct. 16, 2002**

**Sally Brothers and Janice King  
7:15-8:00 p.m.**

*Dr. Brothers* teaches Educational Psychology here at Tech. Her expertise is in adolescent development. She previously taught eighth and ninth grade in Miami, FL as a long-term substitute.

*Mrs. King* teaches fifth grade in an inner city school. She has taught for ten years. She taught fifth and sixth grades and was a technology consultant in NC before moving to her current school system. Her particular strengths are using technology in the classroom and working with special education students.

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_

**Christine Allen and Gail Walters  
8:15-9:00 p.m.**

*Dr. Allen* taught vocational home economics in Ft. Walton Beach, Florida for 7 years. During this time she taught students with physical and mental disabilities at Silver Sands School for Exceptional Children and moved to teaching general education students in independent living and foods classes at the high school. She works here at Tech in the Special Education Teacher Preparation Program and teaches courses on educating exceptional learners. *Mrs. Walters* teaches fifth grade in a local school. She has taught for 23 years and is currently working to become a National Board Certified Teacher. She taught fourth grade for one year and fifth grade for 22 years. She also was an Assistant Principal for one year.

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_

**THURSDAY, Oct. 17, 2002**

**Donald Newbern and Natalie Gerringer  
3:30-4:15 p.m.**

*Mrs. Gerringer* has been teaching for 11 years. She has taught middle school English and Math, high school English and fourth grade. Her particular strengths are with special education students, specifically emotionally disturbed. She has taught in Chesapeake, VA and Tacoma, WA. She recently achieved National Board Certification. *Dr. Newbern* is a professor here at Tech in the Social Studies Education program. He is originally from England and graduated from Lancaster University in England with a degree in Social History. He taught a GED prep course for one year for Job Corp serving a group of 16-21 year-old students from NYC who were predominantly of African-American or Hispanic descent. He then taught high school for two years in Oxford, NY and two years of middle school.

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_

## APPENDIX J

### Email to Teachers and Professors – Preparing for First Chat

Hello Everyone!

I hope all of you are doing well! I'm sorry it took me longer to get this back to you than I had anticipated. It took me longer to get the chats scheduled than I had thought it would. You know about the best laid plans ;-) I have a proposal for you that I hope might make this a little easier for you throughout the rest of the semester. Most people seemed to send me times that worked well for them *in general*. I think it would work to leave the chat schedule as it is for the rest of the 3 chat weeks and we'll only make changes to the schedule if the day/time you have chosen won't work for a certain week. For example, if your chat is on Tuesday at 8:00 this time, it would be on Tuesday at 8:00 the three remaining times. I'll send each of you a schedule of the remaining 3 chat times telling you the date your chat would fall on and if it doesn't work for you, we can change it. Does that sound ok? You might also notice that no one signed up for the chat offered on Thursday evening. Not thinking like a 19 year old, I forgot this is the night they all go out to the Hokie House. :-) So, we might want to move that chat to another night or time the next time.

Below are a few things you need to know before your first chat. Please let me know if you have any questions. Thanks so much for all your patience in reading these emails! After this first round, you won't need all these lengthy explanations about what will happen, etc - you'll be old pros!! :-)

#### CHAT SCHEDULE AND STUDENTS

Attached is the schedule of chats for the first round which begins this coming Monday, the 16th. The time you chose for your chat is listed along with the students who have signed up to chat with you.

If you would like to know more about them or see their picture, you can go in the site under the communication button, click on roster, type in the last name of the student. It will then give you that person's name as a link, click on it and it will take you to their homepage. OR you can hit the list all tab, hit list all again and it will give you a list of everyone in the class and you can browse all their homepages.

#### CD -ROM CASE STUDY

The students viewed the case study in class today (Larry Beaudin). There are several clips to these videos so I wanted to share with you what they viewed so you could go straight to that without having to look at everything. I know time is a finite commodity! When you open the CD, there are 4 buttons going vertically down the left side of the screen. Click on the button labeled direct instruction and then click on all clips in sequence. It takes about 15 minutes to view. If you open the CD and it doesn't play video, that means you need to install Quick Time Video. It is on the CD and is very fast to install.

## LEADING THE CHAT

I also attached a handout we gave them on chat room etiquette. We stressed to them to give you all time to reply to their questions. If you are writing a rather lengthy reply, it helps to post part of your thought or even part of a long sentence followed by.....

This lets them know more is coming and to wait for the rest of your response. It also gives them something to be reading and processing while you are finishing instead of just staring at empty white space waiting for a response :-). This was Sheila's idea from participating in the pilot project (Thanks Sheila!)

They have also been told to log on and to wait for you to begin the chat (this avoids a lot of excess chatter that can seem chaotic in a chat room). I will be logged on in each chat and will serve as moderator. I will let you know when everyone is logged on and ready to begin. I'll be quiet throughout the chat, but will send a reminder when there is 10 minutes left in the chat and then when time is up. We don't have any back to back chats so if your conversation runs a little over, that's fine and if the conversation seems to wind down early, that's fine too. Don't feel like you must force it into lasting 45 minutes if that just isn't happening.

My goal was to send you a list of questions that the students had for you, but we ran out of class time today before that got done. But they have talked about classroom management (setting rules and procedures, having materials ready, etc) and putting together a lesson (intro, guided practice, independent practice, closure, etc. - that type of thing). This is Teaching 101 so I'm sure you'll be fine :-). They have been asked to think about questions they have for you so they should come ready. You can begin by asking them what questions they have for you or by asking them what they thought of the case - totally up to you and however you feel most comfortable. Your conversation is not restricted to the case study at all. If you have never done this before (or even if you have) and would like to log on to another group's chat and lurk in the room to just see how it works, please feel free.

If you have any questions or problems just before or during the chat, please feel free to call me. Might be best to call me on my cell phone in case I'm on campus during your chat. That number is 540-230-8446. Please let me know if I can do anything or help in any way. I truly appreciate the time you're putting into this!

Thanks again!

Carol









## APPENDIX L

### Interview Guides

#### **Semi-Structured Interview Guide**

*Carol Greene*

*Virginia Polytechnic Institute and State University*

Semi-structured Interview Schedule for Professor Interviews.

#### *Background Information*

1. What is your area of expertise and what are you currently teaching?
2. How long have you been teaching at Virginia Tech? Any other teaching experiences you have had?

#### *Communication with the Pre-service Teachers and Practicing Teachers*

3. What do you feel are some of the advantages and disadvantages of using technology to talk with pre-service teachers?
4. What do you feel were the advantages and disadvantages of the various forms of communication you used with the pre-service teachers and practicing teachers?
5. In what ways, if any, did communication with the pre-service teachers and practicing teachers affect your own professional development as a professor?
6. How did your conversations with the pre-service teachers change over the course of the semester?
7. How did your conversations or interactions with the practicing teachers change over the course of the semester?

#### *Overall Project*

8. What, if anything, did you learn about 'learning to teach' and working with beginning teachers?
9. What, if anything, did you learn about technology or about integrating technology and learning? Has this experience made you more likely to use technology more often or differently in your own classes?
10. What do you feel is the most beneficial part of this project and how could we strengthen that? What do you feel is a troublesome part of this project and what could we do to improve upon that?

11. What suggestions do you have for how we could improve this project for the future?
12. Would you be interested in participating in this project again if it is continued by the Educational Psychology Program?

**Semi-Structured Interview Guide**  
*Carol Greene*  
*Virginia Polytechnic Institute and State University*

Semi-structured Interview Schedule for Teacher Interviews.

*Background Information*

1. Where do you teach and what grade do you currently teach?
2. How long have you been teaching and what grades have you taught in the past? Any other teaching experiences you have had?

*Communication with the Pre-service Teachers and Professors*

3. What do you feel are some of the advantages and disadvantages of using technology to talk with pre-service teachers?
4. What do you feel were the advantages and disadvantages of the various forms of communication you used with the pre-service teachers and professors?
5. In what ways, if any, did communication with the pre-service teachers and professor affect your own professional development as a teacher?
6. How did your conversations with the pre-service teachers change over the course of the semester?
7. How did your conversations or interactions with the professors change over the course of the semester?

*Overall Project*

8. What did you learn about 'learning to teach' and working with beginning teachers?
9. What, if anything, did you learn about technology or about integrating technology and learning? Has this experience made you more likely to use technology more often or differently in your own classes?
10. What do you feel is the most beneficial part of this project and how could we strengthen that? What do you feel is a troublesome part of this project and what could we do to improve upon that?
11. What suggestions do you have for how we could improve this project for the future?
12. Would you be interested in participating in this project again if it is continued by the Educational Psychology Program?

**Semi-Structured Interview Guide**  
*Carol Greene*  
*Virginia Polytechnic Institute and State University*

Semi-structured Interview Schedule for Students. (EDCI 4124), Foundations of Educational Psychology for Pre-Service Teachers, Virginia Tech

*Background Info:*

1. Please give me a little background information about yourself – your academic major, class, and what your career goals are.

*Learning about Teaching and Educational Psychology:*

2. How did the case studies “fit” with what you were studying in your educational psychology class – how did they help clarify any concepts or principles?
3. How did the case studies help you learn about teaching or being a teacher?

*Communication with Teachers and Professors:*

4. What did you learn from talking with the teachers and professors?
5. How did communication with the teachers and professors help you learn about educational psychology? About teaching?
6. How did your conversations with the teachers and professors change over the course of the semester?
7. How did the nature of the questions you asked change over time?
8. What do you feel were the advantages and disadvantages of the various forms of communication you used with the teachers and professors?
9. What suggestions do you have for improvement in the communication with the teachers?

*Overall Project:*

10. Why did you choose to go into teaching? What do you hope you’ll be able to do as teacher?
11. How has your idea of what “being a good teacher” means changed over the semester?
12. How has your idea of your role as a teacher changed over the semester?
13. How did these experiences help you learn more about the diversity of public school classrooms?

14. It appeared from reading the threads that they were a forum to allow you to reflect and synthesize what you had learned from class and the chats. Did you find this to be true and if so, how did they provide that opportunity for you?
15. Looking back on this semester, what do you feel you learned from these experiences? What do you feel you learned that will help you as a beginning teacher? What do you wish we would have done differently to help you learn?
16. Would you be willing to talk with me again during your student teaching semester and into your first year of teaching?

**Semi-Structured Interview Guide**  
*Carol Greene*  
*Virginia Polytechnic Institute and State University*

Semi-structured Interview Schedule for Technical Support Person Interview

*Background Information*

1. What is your area of expertise and what is your background with technology experiences?
2. What is your role here at Virginia Tech?

*Benefits and Challenges of Maintaining a Computer-Mediated Environment*

3. What do you feel are some of the benefits or advantages of using technology to support communication between pre-service and practicing teachers?
4. What do you feel are some of the challenges or disadvantages of using technology to support communication between pre-service and practicing teachers?
5. What were some of the difficulties or challenges you experienced in setting up the homepages and in orienting the students to the computer-mediated environment?
6. What do you feel were the advantages and disadvantages of the various forms of communication that were used with the pre-service and practicing teachers?

*Overall Project*

7. What do you feel is the most beneficial part of this project and how could we strengthen that? What do you feel is a troublesome part of this project and what could we do to improve upon that?
8. What suggestions do you have for how we could improve this project for the future?
9. Would you be interested in acting as the technology support person again if this project is continued by the Educational Psychology Program?

## APPENDIX M

### Surveys

#### **Midterm Survey** (For Teachers and Professors)

##### Chats

1. How do you feel about the length of the chats so far this semester? Do they seem long enough, too long, too short – as far as having about the right amount of time to have a productive conversation?
2. How do you feel about the pace of the chats? Are there about the right number of people in your chats to keep the conversation flowing at a reasonable pace?

##### CDs

3. Is viewing the CDs before-hand helpful in having these conversations? Why or why not?

##### Threaded Discussion

4. Do you have any comments, thoughts, suggestions, and/or ideas about the threaded discussions?

##### Overall Assessment

5. Is there anything I could do to better facilitate your participation in this project? Any comments, thoughts, suggestions, and/or ideas you would like to add about anything?

## End-of-Course Survey for Pre-service Teachers

**On a scale of 1 to 5, please rate your opinion of the following:**

1=not helpful at all 2= not very helpful 3=somewhat helpful 4= very helpful  
5=extremely helpful

### Case Studies

1. How helpful were the case studies in helping you understand the concepts presented in class?

2. How helpful were the case studies in helping you understand the complexities of teaching and of being a teacher?

### Chats

3. How helpful were the chats in helping you understand the concepts presented in class?

4. How helpful were the chats in helping you understand the complexities of teaching and of being a teacher?

### Threads

5. How helpful were the threads in helping you understand the concepts discussed in class?

6. How helpful were the threads in helping you understand the complexities of teaching and of being a teacher?

7. How helpful were the threads in allowing you to reflect on and synthesize what you had learned from class and from the teachers?

**Course**

8. How helpful overall was this class in helping you understand the concepts involved in the psychology of learning?

9. How helpful overall was this class in helping you understand about the field of teaching and about being a teacher?

10. How helpful do you feel the activities in this class were in helping you connect the theory and concepts you learned about in class to the practice of teaching?

11. How helpful was the *structure* of this class in helping you learn about educational psychology and teaching?

12. How helpful was the *pace* of this class in helping you learn about educational psychology and teaching?

13. How helpful was the *organization* of this class in helping you learn about educational psychology and teaching?

14. How helpful was this *class overall* in helping you learn about educational psychology and teaching?

## APPENDIX N

### Three Stage Developmental Model of Teacher Reflection (Crotty, 2001)

#### **A Beginner Reflective Practitioner**

(cognitive level)

- |                      |  |
|----------------------|--|
| <i>Knowledge</i>     | 1. Briefly describes the relevance of the evidence or artifact                           |
| <i>Comprehension</i> | 2. Demonstrates an understanding of student development and relevant instructional plans |
| <i>Application</i>   | 3. Connects college coursework concepts with practical classroom applications            |
| <i>Analysis</i>      | 4. Shows evidence of taking a teacher's perspective                                      |
| <i>Synthesis</i>     | 5. Establishes short term goals based upon perceived strengths and weaknesses            |
| <i>Evaluation</i>    | 6. Includes an awareness of their own professional development as a teacher              |

#### **An Intermediate Reflective Practitioner**

- |                      |   |
|----------------------|---|
| <i>Knowledge</i>     | 1. Supports and clarifies new understanding with evidence   |
| <i>Comprehension</i> | 2. Examines and recommends varied instructional strategies as a result of assessing student needs   |
| <i>Application</i>   | 3. Demonstrates an awareness of teaching and learning theory through classroom application examples |
| <i>Analysis</i>      | 4. Shows ability to take multiple perspectives (teachers', parents', students', and principals')    |
| <i>Synthesis</i>     | 5. Establishes professional goals for teaching and learning   |
| <i>Evaluation</i>    | 6. Includes references to feedback from other professionals (colleagues) about their own teaching   |

## **An Expert Reflective Practitioner**

- |                      |   |
|----------------------|---|
| <i>Knowledge</i>     | 1. Supports insight, creativity and understanding with evidence and artifacts   |
| <i>Comprehension</i> | 2. Demonstrates an in-depth understanding of pedagogical theory, subject matter and student development and uses correct terminology throughout |
| <i>Application</i>   | 3. Assists or mentors other teachers  |
| <i>Analysis</i>      | 4. Includes multiple perspectives (personal, professional, political, and philosophical) of individuals and society                             |
| <i>Synthesis</i>     | 5. Establishes long term goals and commitment to profession   |
| <i>Evaluation</i>    | 6. Includes instances of giving and getting feedback from colleagues  |

APPENDIX O

Draft of Creating Connections Handbook

# *CREATING CONNECTIONS*

*Theory Meets Practice in Teacher Education*



*Bridging the Worlds of Schools and Universities*

**For more information contact:**

**Carol Greene  
cgreene@vt.edu**

## Why is School and University Collaboration Important?

Teacher education is not a process that ends upon completion of the university experience and the granting of certification. Learning to teach is a very complex process that continues throughout the career span. Practicing teachers can learn much from involvement with the mentoring and supervision of pre-service and novice teachers. Likewise, teachers and professors have much to learn from each other as well. All are interested in the most basic fundamental desire of our profession - the education of our nation's children.

Although learning to teach is a continuing process, the learning curve is perhaps greatest at the level of pre-service teaching when they are first being introduced to the complexities of the field. These future teachers could benefit greatly from a focus on the integration of theory and practice in the context of a learning community where they may reflect, interact, and communicate with more experienced others in their field. This notion has been referred to as legitimate peripheral practice (Lave and Wenger, 1991) in which more experienced others provide a social network of support guiding a newcomer into the practices of the community. Electronic learning communities have the potential of bringing the work of schools and universities together, supporting such a community.

An electronic learning community situates the learner in the context of the practice by creating an environment for learning in which community members talk, reflect, and interact in order to learn about teaching. It acknowledges the perspective that knowledge cannot be thought of as independent from the contexts and situations in which it is acquired and used (Borko & Putnam, 1996; Putnam & Borko, 2000). The challenge is not so much in the probable difficulties of using technology, but rather the challenge is to begin breaking down barriers that have existed between schools and universities, teachers and researchers, and theory and practice, for many years. The challenge is to work collaboratively with the schools to investigate the opportunities that technology provides us. Electronic learning communities may be one step toward bridging the worlds of schools and universities.

## Becoming a Member of the Community

Thank you so much for agreeing to participate in our online learning community. I hope this will be an enjoyable and productive professional experience for you, as I'm sure it will be for the pre-service teachers.

On the pages that follow is some important information that will help you prepare as we begin the community and that will help guide you through the process if questions should arise. This booklet should answer most of your questions, but always feel free to contact me if you have any further questions and I will be more than happy to help you.

The general plan is for the pre-service teachers to view the case study in class, to participate in the chats with you the week following the case study and finally, the threaded discussions will occur the week after the chats. This cycle will occur four times during the semester, one time each month from September through December. The CD case studies are also available on the website so that you may view the same case study the pre-service teachers have seen before you chat with them.

The pre-service teachers will be allowed to sign up to chat with whomever they choose each time, but they will be assigned to a group for participation in the threaded discussions. Each group will have no more than five students in it and one teacher will be assigned to each group. When the week of the threaded discussions arrive, each group member and teacher will enter the forum that has been specifically set up for that group. Keeping the groups small and not having an entire class discussion will keep the forum from becoming overloaded with posts and difficult to participate in. The pre-service teachers assigned to you will be aligned with your area of expertise as closely as possible.

The syllabus for this course as well as the assignment sheet for the case studies that the pre-service teachers will be given is included at the end of this brochure so that you have a feel for what is occurring in the classroom.

Thank you again, and please, always feel free to contact me with any questions or concerns at any time.

## DIRECTIONS FOR USING COURSECOMPASS

### To Access the Site:

Go to [www.students.pearsoned.com](http://www.students.pearsoned.com)

Enter your log in name and user password

My Log In Name is: \_\_\_\_\_

My Password is: \_\_\_\_\_

Click on the big blue link that says Foundations of Educational Psychology

Voila! You're on the home page!!

### To Post a Thread:

Click on the Communication tab

Click on Discussion Board

Click on the Forum you wish to enter

Once you are in the forum you want:

*To post a new thread* – Click on the tab at the top that says “add new thread”, type your message in the message box, and click submit (If you want to just reply to someone’s post, you will use the method below)

*To reply to a thread already posted* – Click on the title of the thread, it will open a message box, type your reply and click submit. If you click on the person’s name rather than the title of their thread, your email account will open and you can send them an email.

*To attach a document to a thread* - simply enter the same way as above either by posting a new thread or replying. You will see a box that says attachment next to it. The box will be blank with a browse button next to it. Click on the browse button and choose the document you want to attach from its saved location in your computer. It works pretty much the same way as attaching something to an email. When you are finished, click submit.

### To Enter the Chat Room:

Click on the Communication tab

Click on Virtual Classroom

Click on Enter Virtual Classroom – this takes a few minutes for this next part to load, depending on the speed of your computer

When the Chat Room appears, it will be smaller than the screen so you will want to enlarge it. Do this by clicking on the maximize box at the top right of the chat room screen (it just looks like a square – between a line and an X). You will have a white board at the top where you can draw and a smaller

box below that is where the text will appear that others type. You can make the text area larger, and easier to read, by placing your cursor on the bottom of the white board section and, while holding down on your mouse, pulling it up to make the white board section smaller. Do this by placing your cursor at the bottom edge of the white board, continue holding the mouse button down and when it shows an arrow pointing both directions, continue holding the button down on your mouse and drag upwards. You can type a message to the chat room by placing your cursor in the narrow bar at the very bottom of the chat room below the text box. When you finish typing your message, hit enter on your keyboard and your message will appear in the text box for everyone to read.

### **Other General Info:**

From the course homepage, you can access any part of the website.

Click on *Announcements* and you will see any announcements I have posted for the class.

Click on *Staff Information* and you will see my personal information – office hours, location, email, etc.

*Course Documents* – you automatically see all of these listed on the course homepage. The syllabus is included here along with any other documents I will post throughout the semester. All of the chapters are listed here and in these chapter sections, you will find outlines of the chapters, study guides, etc.

Also included under Course Documents is the *Interactive Companion*. This site is where you will find certification information, lesson plan ideas, portfolio recommendations, etc. It's a wonderful resource.

Click on the *External Links* button to view and enter websites I may place links to that I think might be helpful for you. Click on the link and it will take you to that website automatically.

\*\*If you ever need it, the toll free tech support number is 1-800-677-6337 or you can email them at [support@coursecompass.com](mailto:support@coursecompass.com). They are open from 9am to 6pm Eastern Standard Time, Monday through Friday.

## Preparing for the Chats

### CHAT SCHEDULE AND STUDENTS

A list of the students who have signed up for your chats will be sent to you the week before each chat. If you would like to know more about them or see their picture, you can go in the site under the communication button, click on roster, type in the last name of the student. It will then give you that person's name as a link, click on it and it will take you to their homepage. OR you can hit the list all tab, hit list all again and it will give you a list of everyone in the class and you can browse all their homepages.

### CD-ROM CASE STUDY

When you open the CD, there are 4 buttons going vertically down the left side of the screen. These buttons take you to different ways of viewing the same teaching case. The clips of the video are on the right side of the screen and may be viewed one by one by clicking on each clip when you are ready to view it, or you may click on the last clip that says "All clips in sequence," and you will view the video as one continuous teaching episode. Each whole teaching episode usually takes about 15 minutes to view. If you open the CD and it doesn't play video, that means you need to install Quick Time Video. It is on the CD and is very fast to install.

### LEADING THE CHAT

They will have been given the handout on *Chat Room Etiquette* that is included in this brochure. They will be told to give you all time to reply to their questions. If you are writing a rather lengthy reply, it helps to post part of your thought or even part of a long sentence followed by..... This lets them know more is coming and to wait for the rest of your response. It also gives them something to be reading and processing while you are finishing instead of just staring at empty white space waiting for a response :-)

They have also been told to log on and to wait for you to begin the chat (this avoids a lot of excess chatter that can seem chaotic in a chat room). I will be logged on in each chat and will serve as moderator. I will let you know when everyone is logged on and ready to begin. I'll be quiet throughout the chat, but will send a reminder when there is 10 minutes left in the chat and then when time is up.

They will have been asked to think about questions they have for you related to what we are studying in class, so they should come ready. You may begin by asking them what questions they have for you or by asking them what they thought of the case - totally up to you and however you feel most comfortable. Your conversation is not restricted to the case study at all. If you have never done this before (or even if you have) and would like to log on to another group's chat and lurk in the room to just see how it works, please feel free.

## Chat Room Etiquette “Chatiquette”

*These are a few thoughts on how you can have a productive chat room conversation with your teachers and professors. Being aware of a few simple matters of chat room etiquette can help your discussion be focused and productive and avoid the chaos and frustration that can occur in an unmoderated chat room. Please remember this is a professional activity and the teachers and professors are volunteering their time to talk with you.*

\*\*First of all, you will be in groups and each group will have a teacher and professor serving as the group's facilitators. Log into the chat room, but wait for the teachers to open the forum for discussion before you start typing. They will begin the discussion.

\*\*Second, in a chat room you have to be conscious of trying to respond in a meaningful way to other people's thoughts and questions. In other words, read their response and reply to them similarly as you would in an oral conversation. If you want to say you agree with someone, say you agree, but also say why you agree. Work on having a discussion and try to avoid posting isolated comments. Try to respond in a full thought, not just a phrase or a few words. By doing this, it will keep the conversation to a pace that you can read and follow through with and that will also result in a productive conversation.

\*\*Try to maintain awareness of the flow of the conversation - who has asked a question, who is waiting for a response, etc, just as you do in verbal discussion.

\*\*Don't worry about capital letters, punctuation, spelling. Grammar doesn't count in a chat room – it has a life of its own. This makes your typing go much quicker. Just make sure it's readable and avoid using chat room “slang” from instant messenger type settings as all participants may not be aware of the meaning.

\*\*It takes the teachers a little longer to respond to many of you than it does for you to post your own question or thoughts. If you see your teacher using several dots like this.....at the end of a sentence or in the middle of a thought, it means to wait before you reply or make a new comment, he or she is completing a thought. This way, the teacher is posting something for you to be reading and processing so you don't have to be looking at blank white space, and it also allows him or her time to complete a thought before a new topic begins.

\*\*CHECK THE COMPUTER YOU WILL USE FOR THIS CHAT TO MAKE SURE IT WILL RUN THE PROGRAM **BEFORE** YOUR SCHEDULED CHAT TIME. The chat room is large and it can take awhile to download. If the computer you expect to use can't load it, you may need to find a computer on campus.

## **Directions for Editing Your Homepage**

To post to or to edit your homepage:

1. Click on the Tools tab on the left side of the CourseCompass Home Page
2. Click on Edit Your Homepage
3. Type your introductory note about yourself in the box that says Intro Message
4. Ignore all the other boxes for adding links, etc. You don't need to do that.
5. Scroll down and click submit at the bottom of the screen

## **Directions for Locating Other's Homepages**

To find a teacher's or professor's or student's homepage:

1. Click on the Communications tab on the left side of the CourseCompass Home Page
2. Click on Roster
3. Click on the Search tab. In the box, enter the last name of the person whose home page you would like to view and click the search button right next to that box
4. The person's name will appear. Click on the name and that will take you to their home page.
5. If you would like to view them all, click on all users and then go through them one at a time.

PSYCHOLOGICAL FOUNDATIONS OF EDUCATION  
FOR PRE-SERVICE TEACHERS - EDCI 4124  
FALL 2002

**Instructor:**  
**Office:**  
**Office Hours:**  
**WWW Site:**

**Phone:**  
**Fax:**  
**Email:**

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**REQUIRED TEXTS:**

Woolfolk, A. (2001). *Educational Psychology*. Boston: Allyn and Bacon. (with Purple packet)

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**COURSE OBJECTIVES :**

Upon completion of this course, the student will be able to:

- k) describe the art and science of teaching, including characteristics of good and poor teachers.
12. write and evaluate instructional goals and objectives.
13. write an instructional plan, including goals, objectives, instructional activities, & assessment.
14. apply the tenets of behaviorism, cognitivism, and constructivism to analyze and remediate behavior.
15. evaluate and apply the basic principles of behaviorism, cognitivism, and constructivism in modifying classroom behavior .
16. evaluate and apply the basic principles of behaviorism, cognitivism, and constructivism in constructing classroom activities.
17. describe the essential tenets and rationales for the assessment of student achievement.
18. construct and assess supply and selection items based on instructional objectives and activities.
19. explain and construct a fair, accurate, and valid grading scheme for a K-12 class.
20. develop their own list of important principles of learning and instruction.

**EVALUATIONS:**

Student performance will be evaluated in five ways, on-line quizzes, a lesson plan project, a teaching/learning philosophy statement, a series of case assignments, and a comprehensive evaluation. The on-line quizzes will be comprehensive, consist of multiple choice questions and/or short answer/essay questions, and will be posted on the professor's web site. The lesson plan project will require students to create and delineate a full lesson plan for a specific topic. The philosophy statement will require students to write a paper illuminating their own personal philosophy of the teaching/learning process based on the empirical evidence discussed in class. The case assignments will be based on video/CD cases presented during class. The comprehensive evaluation will consist of multiple-choice questions and will be available on the professor's web site. The exact nature of the lesson plan project and philosophy statement are in the *Lesson Plan Project* and *Teaching/Learning Philosophy* handouts.

**GRADING:**

Quizzes	250 pts	(10 x 25)
Lesson Plan Project	150 pts	
Teaching/Learning Philosophy	200 pts	
Case Assignments	300 pts	
Chats	60 pts	(4 x 15)
Online Reflections	60 pts	(4 x 15)
Threaded Discussions	60 pts	(3 x 20)
In-class KWLs	60 pts	(4 x 15)
In-class Post-Case Observations	60 pts	(4 x 15)
Comprehensive Evaluation	100 pts	

A	1000-980pts	100-98%	B+	899-870pts	89-87%	C+	799-770pts	79-77%	D+	699-670pts	69-67%
A	979-940	97-94	B	869-840	86-84	C	769-740	76-74	D	669-640	66-64
A-	939-900	93-90	B-	839-800	83-80	C-	739-700	73-70	D-	639-600	63-60

No make-up quizzes or evaluations will be given. Any quiz or evaluation **not** taken will receive a grade of zero. Submitting the *Lesson Plan Project*, *Teaching/Learning Philosophy*, or *Case Assignments* late will result in a reduced grade, 50 points per day late. If you find it necessary to drop this course, for any reason, you must drop the class by October 4, 2002. Students that are not officially dropped from the class must be given a grade at the end of the semester. All students are expected to attend class regularly and promptly.

## **COMPUTER REQUIREMENTS FOR CASE ASSIGNMENTS:**

Each student must have *access* to a computer with the following system configurations to participate adequately in the Case Assignments:

- Adobe Acrobat Reader 5.0,
- Windows 95 or 98 with 64 megabytes of RAM and a Pentium II processor, or
- Mac OS 8 or higher with 64 megabytes of RAM and a G3 processor.

Please check to make sure you have adequate access to an appropriate computer prior to the first scheduled chat session.

To log on to the chat site after you are registered, go to <http://www.students.pearsoned.com>. Click on LOG IN, enter your USERNAME and PASSWORD, click on the big blue link that says Foundations of Educational Psychology, and you are good to go! *Make sure you use Internet Explorer for your browser, not Netscape.* If you need general technical help, the Tech Support number is 1-800-677-6337. If you need specific help logging-in, you can contact the Tech Specialist for this course, Pris Sears, at [sears@vt.edu](mailto:sears@vt.edu).

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## **DISABILITIES:**

Any student that is in need of special accommodations due to a disability, as recognized by the Americans with Disabilities Act, should contact the Services for Students with Disabilities (SSD) in the Dean of Students Office. "Students with disabilities are responsible for self-identification....To be eligible for services, documentation of the disability from a qualified professional must be presented to SSD upon request. Academic adjustments may include, but are not limited to: priority registration, auxiliary aids, program and course adjustment, exam modifications, oral or sign language interpreters, cassette taping of text/materials, notetakers/readers, or assistive technology" (see <http://filebox.vt.edu/admin/eoaa/ada.html>).

## **HONOR CODE:**

The Honor Code will be strictly enforced in this course. All assignments submitted shall be considered graded work, unless otherwise noted. All aspects of your coursework are covered by the Honor System. Any suspected violations of the Honor Code will be promptly reported to the Honor System. According to the Constitution of the Virginia Tech Honor System "The fundamental beliefs underlying and reflected in the Honor Code are: (1) that trust in a person is a positive force in making that person worthy of trust, (2) that every student has the right to live in an academic environment that is free from the injustices caused by any form of intellectual dishonesty, and (3) that the honesty and integrity of all members of the university community contribute to its quest for Truth. " (see <http://filebox.vt.edu/studentinfo/ugradhonor/>)

The following is the Honor Code written verbatim from the VT Honor System Constitution:

The Honor Code is the University policy that expressly forbids the following academic violations:

1. Cheating -- Cheating includes the actual giving or receiving of any unauthorized aid or assistance or the actual giving or receiving of any unfair advantage on any form of academic work, or attempts thereof.
2. Plagiarism -- Plagiarism includes the copying of the language, structure, ideas and/or thoughts of another and passing off same as one's own, original work, or attempts thereof.
3. Falsification -- Falsification includes the statement of any untruth, either verbally or in writing, with respect to any circumstances relevant to one's academic work, or attempts thereof. Such acts include, but are not limited to, the forgery of official signatures, tampering with official records, fraudulently adding or deleting information on academic documents such as add/drop requests, or fraudulently changing an examination or other academic work after the testing period or due date of the assignment.

**INTASC (Interstate New Teacher Assessment and Support Consortium) Standards:**

Principle 1: The teacher understands the central concepts, tools of inquiry, and structures of the discipline(s) she or he teaches and can create learning experiences that make these aspects of subject matter meaningful for students.

*Assessment:* Quizzes, Lesson Plan Project, Case Studies, Cumulative Evaluation

Principle 2: The teacher understands how children learn and develop, and can provide learning opportunities that support their intellectual, social and personal development.

*Assessment:* Quizzes, Lesson Plan Project, Case Studies, Cumulative Evaluation

Principle 3: The teacher understands how students differ in their approaches to learning and creates instructional opportunities that are adapted to diverse learners.

*Assessment:* Quizzes, Lesson Plan Project, Case Studies, Cumulative Evaluation

Principle 4: The teacher understands and uses a variety of instructional strategies to encourage students' development of critical thinking, problem solving, and performance

skills.

*Assessment:* Quizzes, Lesson Plan Project, Case Studies, Cumulative Evaluation

Principle 5: The teacher uses an understanding of individual and group motivation and behavior to create a learning environment that encourages positive social interaction, active engagement in learning, and self-motivation.

*Assessment:* Lesson Plan Project, Teaching/Learning Philosophy

Principle 6: The teacher uses knowledge of effective verbal, nonverbal, and media communication techniques to foster active inquiry, collaboration, and supportive interaction in the classroom.

*Assessment:* Lesson Plan Project, Teaching/Learning Philosophy

Principle 7: The teacher plans instruction based upon knowledge of subject matter, students, the community, and curriculum goals.

*Assessment:* Lesson Plan Project, Teaching / Learning Philosophy

Principle 8: The teacher understands and uses formal and informal assessment strategies to evaluate and ensure the continuous intellectual, social and physical development of the learner.

*Assessment:* Quizzes, Lesson Plan Project, Case Studies, Cumulative Evaluation

Principle 9: The teacher is a reflective practitioner who continually evaluates the effects of his/her choices and actions on others (students, parents, and other professional in the learning community) and who actively seeks out opportunities to grow professionally.

*Assessment:* Lesson Plan Project, Teaching/Learning Philosophy, Case Studies

Principle 10: The teacher fosters relationships with school colleagues, parents, and agencies in the larger community support students' learning and well-being.

*Assessment:* NA

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**CLASS CONTENT SCHEDULE (TENTATIVE):** All classes are T R 12:30-1:45 in Rm 118, Gym

Date	Topic	Cases	Assignments Due
8/27	T Introduction		
8/29	Th Classroom Management I		
9/3	T Classroom Management II		
9/5	Th Introduction to Chat Tech		Quiz #1
9/10	T Instructional Design 1		
9/12	Th Instructional Design 2	Case #1	
9/17	T Classical Conditioning 1	Chat #1	Quiz #2
9/19	Th Operant Conditioning 1	Threaded Discussion #1	Quiz #3
9/24	T Operant Conditioning 2		
9/26	Th Operant Conditioning 3		
10/1	T Social Learning Theory 1		Quiz #4
10/3	Th Social Learning Theory 2		
10/8	T Information Processing 1		Quiz #5
10/10	Th Information Processing 2	Case #2	
10/15	T Information Processing 3	Chat #2	
10/17	Th Information Processing 4	Threaded Discussion #2	
10/22	T Information Processing 5		
10/24	Th Information Processing 6		
10/29	T Constructivism 1		Quiz #6
10/31	Th Constructivism 2		
11/5	T Instructional Strategies 1		Quiz #7
11/7	Th Instructional Strategies 2	Case #3	
11/12	T Instructional Strategies 3	Chat #3	

11/14	Th	Instructional Strategies 4	Threaded Discussion #3	
11/19	T	Motivation 1		Quiz #8
11/21	Th	Motivation 2		Lesson Plan Project
11/26	T	Thanksgiving Break		
11/28	Th	Thanksgiving Break		
12/3	T	Assessment 1		Quiz #9
12/5	Th	Assessment 2	Case #4	T/L Philosophy
12/10	T	Assessment 3	Chat #4	
12/12	Th	Reading Day	No Threaded Discussion	Quiz #10

# PSYCHOLOGICAL FOUNDATIONS OF EDUCATION FOR PRE-SERVICE TEACHERS - EDCI 4124 CASE ASSIGNMENTS

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**Purpose:** The purpose of this assignment is to provide students with the opportunity to interact with real-world teaching scenarios with the guided assistance of practicing teachers. Pre-service teachers are often confused with regard to how to “handle” certain classroom situations. Engaging with the teacher scenarios and the practicing teachers will allow students to ask needed questions, gain perspective on the teaching profession, and learn how to think about the school environment through the lens of a teacher.

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**Rationale:** Thirty -50% of teachers leave teaching within the first 5-10 years (Darling-Hammond, 1997). Much of this attrition rate may be due to teachers who are under prepared to face the complexities of daily life in a classroom (Goodlad, 1994). Historically, teacher education programs have been based on the belief that learning to teach is simply a process of acquiring knowledge about teaching (Carter, 1990). Recent shifts in practice situate the individual in the center of the context of learning to teach. This pedagogical and curricular shift affords the opportunity for preservice teachers to construct their own knowledge within the authentic environment of the classroom (Borko & Putnam, 1996). Preservice teachers then can better understand the realities of practice and the ways that academic knowledge can transfer and facilitate their teaching success and satisfaction.

This perspective also assumes the importance of learning environments that allow the student to confront dilemmas and to problem solve and construct meaning for themselves within a social network of supportive others. In a survey conducted by Smylie (1989), teachers reported 'consultation with other teachers' as the most effective source of learning to teach second only to 'direct experience as a teacher.' The implications of this for teacher education would suggest that pre-service and/or novice teacher learning be supported by a social network of more experienced others guiding them in their development as new teachers.

The larger goal of this assignment is to provide opportunities for students to learn about teaching in the practice of teaching and to bring to life through practical application, the psychological theories and constructs learned in the course. More specifically, this assignment has three particular goals:

1. To increase the students' abilities to problem-solve in and about diverse and complex teaching situations.
2. To enhance the students' learning about the theories and concepts which are taught in the educational psychology course.

3. To help guide the students along the learning to teach continuum from novice to expert. Of course, it is not expected that the students will leave the course as expert teachers, but my goal is to foster and encourage development in learning to teach.

**Format:** The Case Assignment is really a series of four live-action video scenarios with five activities that revolve around the live-action video scenario. The five activities include:

1. *Online Chats:* There will be four online chats that will last for approximately 45 minutes each. Each online chat will occur the week following each case study. Students will be provided with choices regarding chat times and chat leaders (all chats will be moderated by a practicing K-12 teacher and a university professor of education). Students are responsible for engaging in the chats and contributing to the construction of meaning within the chat.
2. *Online Reflections:* There will be four online reflections that are to be completed the night of each online chat. Each reflection will be comprised of a series of questions and will be available online. The reflection questions will involve relevant content and processes, as well as self-reflection and self-questioning.
3. *Online Threaded Discussions:* There will be three online threaded discussions the week following the first three online chats. For each threaded discussion a question will be posted to begin the discussion. Students are responsible for reading the posts prior to their postings and responding to the discussion (i.e., posts should not simply address the question, but also students' prior posts).
4. *In-Class KWLs:* During the class period in which each case study will be presented, students will complete worksheets that probe (a) What do you already know about today's topic?, (b) What would you like to know about today's topic?, and following the case study and subsequent activities, (c) What have you learned about today's topic?
5. *In-Class Post-Case Observations:* During the class period in which each case study will be presented, and following the viewing of the case study, students will work in groups to investigate the questions, concerns, and solutions resulting from the case study.

Each of the four case assignments is comprised of a three-week cycle of activities. This cycle of activities is as follows:

The first week of a case assignment cycle:

- In-Class KWL
- In-Class Case Study
- In-Class Post-Case Observation (in groups)

Then, the second week of the cycle:

- Online Chat
- Online Reflection

Then, the third week of the cycle:

- Online Threaded Discussion.

This three-week cycle will be repeated four times during the semester. However, on the fourth cycle the online threaded discussion will not be completed.

**Grading:** Each Case Assignment activity will be graded using the following criteria:

6. *Online Chats:* Each online chat is worth 15 points based on the following:

15 Points: The student actively engages in the chat and contributes fully to the creation of meaning within the chat, as evidenced by numerous postings of insight and analysis.

10 Points: The student engages in the chat and contributes to the discussion, although provides little impetus into knowledge creation, as evidence by numerous postings.

5 Points: The student contributes little to the chat and to the construction of meaning as evidenced by few posting with little or no insight.

7. *Online Reflections:* Each online reflection is worth 15 points based on the following:

15 Points: The student provides a thoughtful and thorough reflection on the chat discussion, the content under consideration, and questions left to be answered as evidenced by synthetic and insightful statements.

10 Points: The student provides a thoughtful reflection on the chat discussion, the content under consideration, and questions left to be answer as evidenced by declarative statements, as opposed to insightful statements.

5 Points: The student provides little reflection on the chat discussion, the content under consideration, and questions left to be answered.

8. *Online Threaded Discussions:* Each online threaded discussion is worth 20 points based on the following:

15 Points: The student actively engages in the chat and contributes fully to the creation of meaning within the chat, as evidenced by numerous postings of insight and analysis.

10 Points: The student engages in the chat and contributes to the discussion, although provides little impetus into knowledge creation, as evidence by numerous postings.

5 Points: The student contributes little to the chat and to the construction of meaning as evidenced by few posting with little or no insight.

9. *In-Class KWLs*: Each in-class KWL is worth 15 points based on the following:

15 Points: The student actively engages in each aspect of the KWL providing clear, coherent, and thorough responses as evidenced by complete sentences and complete thoughts.

10 Points: The student engages in each aspect of the KWL providing sufficient responses as evidenced by complete sentences, but incomplete thoughts.

5 Points: The student engages little in each aspect of the KWL providing insufficient responses as evidences by incomplete sentences and thoughts.

10. *In-Class Post-Case Observations*: Each in-class post-case observation is worth 15 points based on the following:

15 Points: The student provides a thoughtful and thorough response to the post-case observation questions as evidenced by synthetic and insightful statements.

10 Points: The student provides a thoughtful response to the post-case observation questions as evidenced by declarative statements, as opposed to insightful statements.

5 Points: The student provides little response to the post-case observation questions.

**Timeline:**

See Syllabus.

**Honor Code:** The Honor Code will be strictly enforced on this assignment. Any suspected violations of the Honor Code will be promptly reported to the Honor System. Students are allowed to discuss with other students the nature of this assignment and their general thoughts regarding each activity. Students are not allowed to provide other students in the class with copies of his or her writing, nor should students discuss the specifics of what he or she intends to include in his or her writing. In addition to the above statements, the Honor Code general principles of cheating, plagiarism, and falsification are still applicable (see <http://filebox.vt.edu/studentinfo/ugradhonor/>).

## References:

- Borko, H. & Putnam, R.T. (1996). Learning to teach. In D.C. Berliner and R.C. Calfee (Eds.), *Handbook of educational psychology* (pp. 673-708). New York: Simon and Schuster Macmillan.
- Carter, C. (1990). Teachers' knowledge and learning to teach. In W.R. Houston (Ed.), *Handbook of research on teacher education* (pp.291-310). New York: Macmillan.
- Darling-Hammond, L., Wise, A., & Klein, S. (1997). *A license to teach: Raising standards for teaching*. San Francisco: Jossey-Bass.
- Goodlad, J. (1994). *Educational renewal: Better teachers, better schools*. San Francisco, CA: Jossey-Bass.
- Smylie, M. (1989). Teachers' views of the effectiveness of sources of learning to teach. *The Elementary School Journal*, 89(5), pp.543-558.

## APPENDIX P

### Email from Dr. Dawson to Teachers and Professors

Hello to All!

I wanted to write a quick email of clarification regarding some issues that have arisen during the latest round of chats and threaded discussions.

Some of you have noticed that there is a group of students within the class that have a very naive and restricted view of teaching (e.g., quiet classrooms are good, noise classrooms are bad; teacher control is good, student expression is bad). This view mirrors findings in a series of research domains related to expert versus novice teachers, the role of prior knowledge and experience in thought and action, and the building of communities of learners.

My goal for this email is to urge you to continue having frank and insightful conversations with the students and not to worry about stepping on my toes. Many of your concerns are my concerns also, and if they hear a diversity of opinions regarding various issues I see that as a positive sign. Some of the students in my class have heard only a single perspective for the past few years, and have worked only in small and intimate educational settings.

Thanks for participating and contributing to this endeavor. Your generosity and expertise are appreciated.

Tony

## APPENDIX Q

### Examples of Cognitive Levels in Reflection Rubric for Beginner Practitioners

#### **B1 – KNOWLEDGE – Describes relevance of evidence or artifact**

I also believe that teachers should "walk on the edge" and give students the best learning experience that they can offer. Even though the state has requirements that teachers have to meet, learning can still be fun and interactive. The SOL tests may be a tough hurdle, but we should always keep in mind that our main goal as teachers, is to help students learn and grow. Teachers should make their students feel comfortable in the classroom so they can get the most out of each lesson. The teachers that I admire most are the ones who don't really care about what looks good on paper, but what students can learn and use throughout their lives. Having a passion to teach and help younger ones is something that can outlive the complaints and downfalls of standardized tests.

*\* In this post, the student is explaining the importance (the relevance) of dealing with the SOLs and making learning meaningful for the students, but she does not integrate those thoughts with how they are involved in students' developmental needs or how she might address them in classroom instruction (both of which would have made it a level B2). She does not connect her comments with college course concepts she has learned in class (level B3). She is not coming from the teacher's perspective in her comments (B4) as she is really just using "platitudes" to back up her opinions. She does not mention any goals she has in mind for herself or any strengths/weaknesses she might need to work on (B5) and does not show any awareness of her professional growth as a teacher (B6)*

#### **B2 – COMPREHENSION – Understands student development and relevant instructional plans**

I agree with everyone else that in order to make learning meaningful in the classroom we need the students to be active participants. By that, not only must they feel free to share their thoughts, ideas and questions in front of the class, but that they are also involved in the structuring of the class (when applicable, of course). If the student is involved with creating the assignments or at least helping to make choices about the classroom they will feel a responsibility and ownership of the class. This can work in elementary classes all the way to courses in the universities. I had a history class in which each project for the class was a choice between 4 or 5 per unit. This way the students could choose which topic most interested them. I also agree that the teacher should individualize her plans for the class around the students that make it up. Every class will be different with different group dynamics and students from various backgrounds that will be going in all sorts of different directions in the future. The teacher should be open to finding out about these things and how they will affect the class as a whole. This will help in making the plans for class center around the students. The teacher should be learning along side of their students. We will never know all there is to know... so model this. Being excited and enthusiastic about your subject makes it relevant... and letting the students know that you're still researching and learning lets them know that life-long learning is important.

*\* In this post, the student demonstrates that she understands the students' needs and also discusses some ways she might address them in classroom instruction, which makes this post a t a level B2. She does not connect her comments with college course concepts she has learned in class (level B3). She is not coming from the teacher's perspective in her comments (B4) as she is mainly coming from the students' viewpoint. She does not mention any goals she has in mind for herself or any strengths/weaknesses she might need to work on (B5) and does not show any awareness of her professional growth as a teacher (B6)*

### **B3 – APPLICATION – Connects college coursework with classroom applications**

I think in order to make learning meaningful for students the teacher must let the students be active participants in the learning process. Every day in class the students should be able to make choices as to how they learn; for example: they get to choose which activities (group work, hands-on activities, reports, making posters, etc) from a list that would benefit them most. Also, students need to see how learning a particular subject is going to benefit them in the real world and put it to use. Take a Spanish class for example; they need to know that there is good reason to learn Spanish; by showing them the number of Spanish speakers in the U.S and where they live they can be more motivated to learn. One of my favorite Spanish classes here at Tech was Service Learning because we really got to put the language to use; twice a semester the entire class went to Roanoke and visited numerous Hispanic families and chatted with them and twice a week groups of two went to a particular family's house to teach them English. Service Learning made my learning experience much more meaningful; I learned more in that class about culture than any other culture class that I have had because I was learning first-hand instead of out of a book and my Spanish improved. I think that in order to make learning more meaningful the student must be more involved and must have more real life experience.

*\*In this post, the student connects her comments with college course concepts she has learned in class (level B3). She is not coming from the teacher's perspective in her comments (B4) as she is mainly coming from the students' viewpoint and from her own experiences. She does not mention any goals she has in mind for herself or any strengths/weaknesses she might need to work on (B5) and does not show any awareness of her professional growth as a teacher (B6).*

### **B4 – ANALYSIS – Shows evidence of taking a teacher's perspective**

I also believe that the students need to be as involved as possible in the choices made in the classrooms. As students, we know how we learn the best; and as future educators, I think we should allow our students to have a say-so in how they want the learning process to occur in their classrooms. When we allow the students to make decisions on how they want to learn, they will be more willing to learn. They will realize that their opinions do matter and hopefully they will want to put forth the effort to learn whether or not the subject matter is appealing to them or not. I realize that all students learn differently, but I feel like if the teacher uses different tactics, such as lecturing for one lesson, a hands-on experience for the next, and group work for another, most of the students will find a tactic that they excel in and learn the best with. And, no matter what we do as teachers, we are never going to be able to reach every student at one time. It is almost impossible to spark an interest in every student at one time, but over time, I think it is our goal to reach every student in our classroom. And, I think that is a very realistic goal as long as we keep our lesson plans flexible, allow for creativity in the classroom, and most importantly, let the students have a chance to voice their concerns and tell us how they feel they learn the best.

*\*In this post, the student is coming from the teacher's perspective in her comments by explicitly commenting on some of the things a teacher can do in her classroom to meet students' needs. Her focus is from the teacher's perspective more so than from the students' perspective. (B4) She does not mention any goals she has in mind for herself or any strengths/weaknesses she might need to work on (B5) and does not show any awareness of her professional growth as a teacher (B6).*

### **B5 – SYNTHESIS – Establishes short term goals based upon perceived strengths and weaknesses**

I'd ask Mr. Beaudin how he keeps his motivation up. Seven of my aunts and uncles are teachers and they always talk about how tired they get while teaching. It seems that would wear down on a teacher and they'd lose their motivation to keep and up-beat class like Mr. Beaudin did. Although he gets a new group of kids every year, he still teaches basically the same concepts. However, I'll be teaching high school agriculture where I'll often

teach the same class several times a day. How do I maintain a high level of energy and enthusiasm when I'm just doing the same thing over and over?

I know exactly what you mean! I've often wondered how I'll be able to keep enthusiasm in my agriculture classroom also. And, I guess the one thing that we should try to do is to maintain a variety of how we teach the classes. Even though we may teach the same class three times a day, we can still change the ways in which we teach the classes. And, students are going to handle the material we teach differently in each class and I think that will also aid us in keeping our enthusiasm during class. As long as we continue to want to learn ourselves and share our knowledge with our students, then I think we will be able to keep the enthusiasm needed in the classroom!

*\*In these posts, the students are indicating an awareness of themselves and their weakness in that they tend to get bored with repetition. They are thinking ahead (setting goals) on how they might prepare themselves to handle this. They do not show any awareness of their professional growth as a teacher however (B6).*

## **B6 – EVALUATION – Includes an awareness of their own professional development as a teacher**

In reading the threads that have been posted, it seems that everyone agrees that both direct instruction and guided discovery can be very effective methods of teaching and learning when they are used in the right context. I think that some lessons can be better executed by using direct instruction and other ideas provide an excellent opportunity to incorporate guided discovery. I also feel like much of the planning that goes into teaching is based on trial and error in the beginning, and then as we are able to see what works best under what conditions, we begin to make better decisions on how to approach teaching different topics. By becoming familiar with both of these techniques our teaching inventory is increased and hopefully, we will be able to incorporate each of these techniques into our classroom successfully so that all the children will have the best opportunity to find meaning in what they learn.

*\*In this post, the student indicates an awareness of her professional growth as a teacher (B6). She talks about what she has learned about these two teaching methods and indicates an awareness that she will continue to learn as she becomes a practicing teacher.*



## PROFESSIONAL EXPERIENCE

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- beginning 8/2003      ***Assistant Professor***  
Department of Curriculum and Instruction  
East Carolina University, Greenville, NC  
(Will teach courses in Language Arts Methods to pre-service teachers in the Elementary Education program)
- 6/2003-7/2003      ***Adjunct Professor***  
Virginia Tech, Blacksburg, VA  
(Planned and taught EDCI 4124 – Psychological Foundations of Education for Pre-Service Teachers)
- 5/2003-6/2003      ***Graduate Research Assistant***  
Department of Teaching and Learning, Virginia Tech, Blacksburg, VA  
(Responsible for evaluation of research project and dissemination of findings including presentations, publications, and written report to sponsor)
- 8/2002-5/2003      ***Graduate Research Assistant***  
Center for Excellence in Undergraduate Teaching and Department of Teaching and Learning, Virginia Tech, Blacksburg, VA  
Split appointment between CEUT and Teaching and Learning  
(Principal investigator on dissertation research-funded by grant within Department of Teaching and Learning - Responsible for data collection and analysis)
- 1/2002-5/2002      ***Graduate Teaching Assistant***  
Educational Psychology Program, Department of Teaching and Learning, Virginia Tech, Blacksburg, VA (half time appointment during Spring '02 in addition to my role at the Center for Excellence in Undergraduate Teaching)  
(Planned and taught one section of EDCI 4124 - Psychological Foundations of Education for Pre-service Teachers- for upper-level undergraduates and master's degree students)
- 8/2001-8/2002      ***Graduate Research Assistant***  
Center for Excellence in Undergraduate Teaching, Virginia Tech, Blacksburg, VA  
(Co-principal investigator on various research projects; Responsible for data collection and analysis; Responsible for dissemination of findings including presentations, publications, and written reports to Deans, Directors, and Department Heads; Created a Handbook for Early Career Faculty; Provided technology and office support)
- 7/2001      ***Adjunct Professor***  
Virginia Tech, Blacksburg, VA  
(Planned and taught EDCI 4124 – Psychological Foundations of Education for Pre-Service Teachers to a master's cohort group in the Elementary Education Alternative Certification Program)

- 5/2001-8/2001      ***Graduate Research Assistant***  
Center for Excellence in Undergraduate Teaching, Virginia Tech,  
Blacksburg, VA  
(Co-principal investigator on a college-wide study of teaching and the culture of support for teaching; Responsible for data collection and analysis; Data was provided to inform the development of a peer review and support system for untenured professors in the College of Human Resources and Education)
- 7/2000      ***Adjunct Professor***  
Virginia Tech, Blacksburg, VA  
(Planned and taught EDCI 4124 – Psychological Foundations of Education for Pre-Service Teachers to a master’s cohort group in the Elementary Education Alternative Certification Program)
- 8/1999-5/2001      ***Graduate Teaching Assistant***  
Educational Psychology Program, Department of Teaching and Learning, Virginia Tech, Blacksburg, VA  
(Planned and taught two sections of EDCI 3154 each semester – an undergraduate course in Psychological Foundations of Education)
- 8/1998-5/1999      ***Graduate Assistant - University Mentor for Year-long Student Teaching Model in Elementary Certification Program, Grades NK-5***  
Elementary Education Program, Department of Teaching and Learning, Virginia Tech, Blacksburg, VA  
(Responsible for organizing and conducting workshops for student teachers in the areas of developmentally appropriate practice and reading instruction and assessment; Provided weekly informal evaluations and oral feedback; Conducted quarterly formal evaluations; Responsible for lesson planning and implementation support; Communicated weekly with student teachers through a dialogue journal; Conducted year-end formal evaluations; Responsible for assignment of grades and recommendation to the state for professional certification to be issued)
- 1990 – 1998      ***Elementary Classroom Teacher***  
Currituck County Schools, Currituck County, NC  
Taught second grade (1996-1998), kindergarten (1995-1996) and fifth grade (1990-1995)
- 1989 – 1990      ***Middle School Classroom Teacher***  
Dare County Schools, Manteo Middle School, Manteo, NC  
(Taught seventh grade Language Arts in a block schedule)
- 1988 – 1989      ***Montessori Classroom Teacher***  
Rainbow Montessori School, Ashland, KY  
(Taught all subjects to a mixed grade level of grades one through six)

## PROFESSIONAL DEVELOPMENT

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2001-2002	<i>Teacher Education and Funds of Knowledge</i> , Faculty Study Group, Virginia Tech, Blacksburg, VA
2000-2001	<i>Multiculturalism and Diversity in the College Classroom</i> , Faculty Study Group, Virginia Tech, Blacksburg, VA
1997-1998	<i>Reading Renaissance Individualized Reading Programs and Use of Running Records</i> , Raleigh, NC
1997-1998	<i>Developmentally Appropriate Practices</i> , Norfolk, VA
1997-1998	<i>Core Knowledge in the Curriculum</i> , Atlanta, GA
1995-1998	<i>Multiple Intelligences in the Classroom</i> , Raleigh, NC
1995-1998	<i>A+ Training: Teaching Academics through the Arts</i> , Greenville, NC
1995-1996	<i>Authentic and Portfolio Assessments</i> , Currituck County, NC
1993-1994	<i>Modifications for the Struggling Learner</i> , Moyock, NC
1992 –1993	<i>Dimensions of Learning</i> , Fayetteville, NC
1992-1995	<i>Whole Language and Literacy Learning</i> , Houston, TX
1991-1992	<i>Cooperative Learning</i> , Currituck County, NC
1990-1991	<i>Teaching Higher Order Thinking Skills: A Leadership Retreat</i> , Williamsburg, VA

## PROFESSIONAL LICENSES

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1988-present	Elementary Education, K- 8
1988-present	Secondary Teaching Certification in English, 7-12

## PROFESSIONAL CONSULTING

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1/2000 – 12/2000	<b><i>Evaluation and Education Consultant</i></b> Margaret Beeks Elementary School, Blacksburg, VA and the Department of Human Development, Virginia Tech, Blacksburg, VA  Served as educational consultant to a partnership between a local elementary school and the university - designed to integrate arts instruction into the daily academics of elementary school students – a project funded by the Disney Foundation
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Responsible for organization and presentation of workshops on thematic planning and arts instruction for elementary school teachers

Conducted observations of, and interviews with, teachers

Responsible for evaluation of the implementation of the program

Responsible for data collection and analysis as part of the research process to inform the Disney Foundation

Collaborated on report to the sponsor

5/2000 – 5/2001

***Assessment Specialist***

Industrial Systems Engineering, Virginia Tech

Served as Assessment Specialist and Advisor on a NSF funded project to research the impact and effects of a web enhanced course on the learning outcomes of students in an introductory engineering course

Advised and collaborated on the research design and implementation of project

Advised the research team on the existing literature in the fields of undergraduate developmental education and web-enhanced courses

Responsible for statistical analysis of data and graphic representations of statistical results

Collaborated on report to the sponsor

Collaborated on the written dissemination of results for presentation and publication

**UNIVERSITY TEACHING EXPERIENCES**

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<i>Semester</i>	<i>Course</i>	<i>Student Rating</i>
Summer, 2003	EDCI 4124 Psychological Foundations of Education for Pre-service Teachers	in progress
Spring, 2002	EDCI 4124 Psychological Foundations of Education for Pre-service Teachers	4.0
Summer, 2001	EDCI 4124 Psychological Foundations of Education for Pre-service Teachers	3.4
Spring, 2001	EDCI 3154 Psychological Foundations of Education EDCI 3154 Psychological Foundations of Education	4.0 3.9

Fall, 2000	EDCI 3154 Psychological Foundations of Education	4.0
	EDCI 3154 Psychological Foundations of Education	4.0
Summer, 2000	EDCI 4124 Psychological Foundations of Education for Pre-service Teachers	4.0
Spring, 2000	EDCI 3154 Psychological Foundations of Education	4.0
	EDCI 3154 Psychological Foundations of Education	3.7
Fall 1999	EDCI 3154 Psychological Foundations of Education	4.0
	EDCI 3154 Psychological Foundations of Education	3.5
<b><i>Cumulative Rating</i></b>		<b>3.9</b>

### **TEACHER DEVELOPMENT WORKSHOPS CONDUCTED / INVITED PRESENTATIONS**

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2003	<i>Defending your Dissertation</i> Presented to Elementary Education doctoral students during a Doctoral Seminar at Virginia Tech, Blacksburg, VA
2002	<i>Qualitative Research in Education</i> Presented to graduate students at Virginia Tech, Blacksburg, VA
2000	<i>Thematic Planning</i> Presented to Margaret Beeks Elementary School, Blacksburg, VA
2000	<i>Integrating the Arts into Academics</i> Presented to Margaret Beeks Elementary School, Blacksburg, VA
1999	<i>The Use of Running Records in the Teaching of Reading</i> Presented to student teachers in the elementary education model, Virginia Tech, Blacksburg, VA
1998	<i>Thematic Planning and the Use of Multiple Intelligences in the Classroom</i> Presented to student teachers in the elementary education model, Virginia Tech, Blacksburg, VA
1998	<i>Promotion/Retention Issues and the Effects on Students</i> Presented to Currituck County's elementary school teachers, Currituck County, NC
1991	<i>Teaching Thinking Skills</i> Presented to Griggs Elementary School, Poplar Branch, NC

### **PROFESSIONAL ORGANIZATIONS**

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American Educational Research Association  
Association for the Advancement of Computing in Education

Association for Supervision and Curriculum Development  
Court Appointed Special Advocates of America  
Eastern Educational Research Association  
National Association for the Education of Young Children  
Phi Delta Kappa  
Society for Instructional Technology and Teacher Education  
Stand for Children

## **AWARDS AND HONORS**

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- 2002      *Faculty Campaign Graduate Student Scholarship*  
Awarded to recognize leadership potential in academia and research  
Presented by the Faculty of the College of Human Resources and Education, Virginia Tech, Blacksburg, VA
- 2001      *Outstanding Teaching as a Graduate Assistant*  
Awarded to recognize outstanding teaching as a graduate assistant  
Presented by the College of Human Resources and Education, Virginia Tech, Blacksburg, VA
- 2001      *Graduate Student Representative to the Board of Visitors, Finalist*  
Virginia Tech, Blacksburg, VA
- 1998      *Outstanding Performance in Reading Education*  
Presented by the Institute for Academic Excellence, Madison, WI
- 1994      *North Carolina Teaching Academy*  
Chosen as one of 75 teachers across the state of North Carolina to become the first members of the Teaching Academy - aimed at recognizing teaching excellence and leadership skills and at breaking down the walls between theory and practice

## **SERVICE TO UNIVERSITY AND COMMUNITY**

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- 2003      Graduate Student Representative on the Excellence in Education Review Panel, Virginia Tech, Blacksburg, VA
- 2002      Graduate Student Volunteer for New Graduate Student Orientation, Virginia Tech, Fall 2002
- 2002      Chair of paper discussion, Eastern Educational Research Association, Sarasota, FL.
- 2002      Reviewer of submitted presentations, American Educational Research Association, New Orleans, LA.
- 2001      Member of Executive Board of Phi Delta Kappa - responsible for newsletter production

- 2000 – 2001            Paper-based public relations coordinator, Educational Psychology Program, Virginia Tech, Blacksburg, VA
- 2000                    Graduate Student Representative on the Excellence in Education Review Panel, Virginia Tech, Blacksburg, VA
- 1999 – 2000           Graduate Research Day Planning Committee Member, Virginia Tech, Blacksburg, VA

## PRESENTATIONS

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- Greene, H.C., & Magliaro, S.G. (2003). Images of Teaching.  
*Paper presented at the annual meeting of the American Educational Research Association, Chicago, IL*
- Magliaro, S.G, Greene, H.C, Morgan-Fleming, B., Pinnegar, S., & Russell, T. (2002). Using Technology to Study Teacher Thinking and Development.  
*Paper session at The Invisible College, New Orleans, LA*
- Russell, T., Greene, H.C., Magliaro, S.G., Morgan-Fleming, B., & Pinnegar, S. (2002). Can CD-ROM Case Studies Support and Sustain New Perspectives on the Nature and Development of Teacher Knowledge?  
*Paper session at the The Invisible College, New Orleans, LA*
- Greene, H.C., & Magliaro, S.G. (2002). The Use of CD-ROM Video-Based Case Studies in Pre-Service Teacher Education.  
*Paper presented at the annual meeting of the Society of Information Technology and Teacher Education International Conference, Nashville, TN*
- Greene, H.C. (2002). To Teach or Not to Teach?  
*Paper presented at the annual meeting of the Eastern Educational Research Association, Sarasota, FL*
- Greene, H.C., Dika, S.L., Lubbs, G.T., & Magliaro, S.G. (2002). The Role of Dialogue in Professional Preparation Practices  
*Paper presented at the annual meeting of the Eastern Educational Research Association, Sarasota, FL.*
- Allen, M.T., & Greene, H.C. (2001). Sources of Teacher Stress: An Exploratory Study  
*Paper presented at the annual meeting of the Eastern Educational Research Association, Hilton Head, SC*
- Dika, S.L., Greene, H.C., Lubbs, G.T., & Magliaro, S.G. (2001). Preparing Tomorrow's Leaders through Self Study of Professional Practices  
*Paper presented at the annual meeting of the American Educational Research Association, Seattle, WA*

Dika, S.L., Greene, H.C., Lubbs, G.T., & Magliaro, S.G. (2001). Preparing Tomorrow's Leaders through Self-Study of Professional Practices  
*Poster presentation at the 2001 Graduate Research Symposium at Virginia Tech, Blacksburg, VA*

## **PUBLICATIONS**

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### ***Published Work***

Greene, H. C., & Magliaro, S. G. (in press). A Computer-Mediated Community of Learners: Theory Meets Practice in a Teacher Education Classroom. *Journal on Excellence in College Teaching*.

Abraham, J., Araman, J., Babinski-Reeves, K., Brown, M., Greene, H.C., Prouty, A., Watts-Reaves, Dixie, Wilkinson-Stallings, E. (2002). *Integrating Appreciation of Cultural Diversity into Teaching: A Guidebook to Creating a Welcoming Environment*. Blacksburg, VA: Virginia Polytechnic Institute and State University.

Greene, H.C., & Magliaro, S.G. (2002). A Technology Enhanced Field Experience: The Use of CD-ROM Based Case Analysis in Pre-service Teacher Education. *Conference Proceedings of The Society of Information Technology and Teacher Education*, Nashville, TN.

Magliaro, S.G., Dika, S.L., Greene, H.C., & Lubbs, G.T. (2001). *Preparing Tomorrow's Leaders Through the Redesign of Professional Preparation Practices*. Paper presented at the Annual Meeting of the American Educational Research Association, Seattle, WA, 27 pp. [Online]. Available: ERIC Document ED461651

### ***Papers Under Review***

Greene, H. C. (submitted). Images of Teaching. *ERIC Document Reproduction Service*.

Greene, H.C. (submitted). Those Who Choose to Teach. *College Teaching*.

### ***Manuscripts in Preparation***

Magliaro, S.G., Dika, S.L., Greene, H.C., & Lubbs, G.T. (Article). *Fostering Learning Organizations through Collaborative Action Teams*.

Greene, H.C. (Article). *Success Stories: The Class of 2002*

Greene, H.C. (Article). *The Role of Education in Families and Children from Poverty*.

## FUNDED RESEARCH

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Magliaro, S.G., Abraham, J., & Doolittle, P. (2002). *Creating Connections: A Computer Mediated Community of Learners*. Funded through the Center for Innovation and Learning, July, 2002 – June, 2003 for \$19,711.

*My role: Author, co-principal investigator, and coordinator* (I was primary author of this grant, which I wrote to fund my dissertation, but due to university regulations concerning graduate student authorship, I could not be listed as author.)

Magliaro, S.G., & Greene, H.C. (2001). *A Pilot Project to study a Computer-Mediated Community of Learners*. Funded through the College of Human Resources and Education and the Department of Teaching and Learning, August-December, 2001 for \$2,000.

*My role: Co-principal investigator and coordinator*

## RESEARCH EXPERIENCES

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**Case Study:** *Theory Meets Practice in Teacher Education: A Case Study of a Computer-Mediated Community of Learners*. Virginia Tech, 2002-2003

My role: Principal investigator and coordinator, responsible for coordination, implementation, data collection and analysis, and final report

**Oral History:** *Educational and Family Experiences of Successful High School Students from Families in Poverty*, Virginia Tech, 2002 (in progress)

My role: principal investigator, responsible for data collection and analysis, and final report

**Teacher as Researcher:** *Images of Teaching*, Virginia Tech, 2002 (in progress)

My role: co-principal investigator, responsible for data collection and analysis, and final report

**Mixed Methodology:** *CEUT Faculty Grant Recipients' Use of Funding for Future Research*, Center for Excellence in Undergraduate Teaching, Virginia Tech, 2002 (in progress)

My role: co-principal investigator, responsible for development of instrument, data collection and analysis, and final report

**Case Study:** *Exploring the Need for a Peer Support and Review System in the College of Human Resources and Education at Virginia Tech*, Center for Excellence in Undergraduate Teaching, Virginia Tech, 2001

My role: co-principal investigator, responsible for data collection and analysis and final report

**Case Study:** *Computer Mediated Community of Learners: A Pilot Study*, Department of Teaching and Learning, Virginia Tech, 2001

My role: co-principal investigator, responsible for coordination, implementation, data collection and analysis, and final report

**Teacher as Researcher:** *Undergraduates' Decisions to Choose Teaching as a Career: Who Chooses and Why*, Virginia Tech, 2001

My role: principal investigator, responsible for data collection and analysis, and final report

**Case Study:** *The Study of an Exploratory Interdepartmental Teacher Education Seminar to Prepare Future School Leaders*, Virginia Tech, 2000.

My role: co-principal investigator, responsible for data collection and analysis, final report

**School/University Collaborative Action Research:** *The Use of Arts in Academics*, Virginia Tech and Margaret Beeks Elementary, 2000

My role: educational consultant, data collection and analysis, collaborated on report to sponsor

**Quantitative:** *The Impact of a Web-Enhanced Course on the Learning Outcomes of Students in an Introductory Engineering Course*, Industrial Systems and Engineering, Virginia Tech, 2000

My role: Assessment specialist, conducted statistical analysis, collaborated on report to sponsor

**Survey Research:** *Sources of Teacher Stress: An Exploratory Study*, Virginia Tech, 2000

My role: co-principal investigator, responsible for development of instrument, data collection and analysis (multiple regression analysis), and final report

## RESEARCH INTERESTS

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Children and Families in Poverty

Development and Policy Issues/Social Change

Educational Experiences of Children from Poverty

Issues of Social Justice with a current emphasis on social class

Pre-service Teacher Education, Learning to Teach, and Mentoring

School/University Collaborations

Technology and Teacher Education

## SKILLS AND INTERESTS

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Working use of Microsoft Office, Microsoft Publisher, Power Point, Excel, digital camera, computer scanners and related computer multi-media

Skilled in the use of internet software

Working use of SPSS for Windows

Experience in web development and design issues

Proficient in the use of computer-mediated communication (maintaining websites, hosting chats and threaded discussions, video conferencing)

Proficient with the use of both Macs and PCs

Write children's literature

Speak some Spanish (currently continuing coursework with plans to become fluent)

## TEACHING COMPETENCIES

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Assessment (specifically portfolio, alternative assessments)  
Child development courses (cognitive, social, emotional)  
Developmental psychology  
Early childhood education methods courses  
Educational psychology – Cognitive Learning Theory, Constructivism, Behaviorism  
Literacy and reading instruction of young children  
Professional development of teachers  
Qualitative research - paradigms, perspectives, and methodologies  
Quantitative research - introductory courses  
Social justice issues (specifically, issues of social class)

## REFERENCES

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