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**An Examination of Email-Based Novice Teacher Mentoring:
Proposing a Practitioner-Oriented Model of Online Reflection**

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**An Examination of Email-Based Novice Teacher Mentoring:
Proposing a Practitioner-Oriented Model of Online Reflection**

by

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Dissertation

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Dedication

To my son, Kevin,
for four years of too much time in the library and not enough in the park

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**An Examination of Email-Based Novice Teacher Mentoring:
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This qualitative study examined how mentoring and reflection were enacted in the discourse between novice teacher protégés and their experienced teacher mentors in an online new teacher support program. Participants were members of six mentoring teams in WINGS (Welcoming Interns and Novices with Guidance and Support) Online sponsored by the University of Texas at Austin, a program designed to offer graduates of the university's teacher preparation programs protégé-driven just-in-time support. Novices who chose to participate were offered the opportunity to select an experienced teacher mentor with whom they could communicate via a facilitated private email list. The teams participating in this study had each communicated for at least one semester.

Data consisted of the email exchanges between mentors and protégés and the applications submitted at the beginning of the match. Qualitative analysis of the data

proceeded inductively. Methods of constant comparative analysis and microanalysis of discourse revealed the content, structure and patterns of the teachers' talk. Findings indicated that the teachers, who discussed many of the same issues previously identified with face-to-face mentoring pairs, focused much of their talk on storytelling. Although text-based, their stories did not assume the formal structure traditionally associated with written discourse. Instead, the teachers utilized an electronic equivalent of spoken conversational narratives. Narratives were fluid and reflective of the purposes they served, including: relating, illustrating, venting and reflecting. Reflective exchanges, a focus of the study, were initiated almost exclusively by the protégés and grounded in the problems they faced in their teaching.

Analysis generated a practitioner-oriented model of reflection categorized according to which aspect of the problem the teacher foregrounded. This model suggested a typical sequence in which new teachers told a story and examined one or more aspects of the problem posed. When these reflective bids received a response, the mentors' messages extended the reflection in a fluid process, shifting back and forth between different aspects of issues. Implications include recommendations for online teacher mentoring programs and a theoretical understanding of how teachers reflect on issues they consider important.

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CHAPTER I:

INTRODUCTION

Overview of the Issues

One of the most serious challenges facing the American educational system today is a growing shortage of qualified teachers. A nationwide survey conducted by the National Center for Educational Statistics predicts that the United States will need between 1.7 and 2.7 million new teachers by the 2008-2009 school year (Hussar, 1999; Hymes, 1994). One reason for this shortage is the troubling rate of attrition among teachers, especially those new to the field. On average, five percent of all teachers leave the profession each year (Hussar, 1999), and a full third of new teachers is gone by the end of their third year (Sweeney & DeBolt, 2000).

There is a clear need to improve conditions for new teachers in American schools, but how? To answer that question, one must first understand the needs of novice teachers and the challenges they face. As they graduate from college and enter the classroom, new teachers, many of whom may be living on their own for the first time in their lives, face the difficult transition from learning about teaching to learning to teach (Feiman-Nemser, 2001b; Gold, 1996). The difficulty of this transition is compounded by the traditionally isolated nature of teaching culture – although teachers see each other in the hallway or teachers' lounge, they face their students alone once the classroom door closes (Chubbuck, Clift, Allard, & Quinlan, 2001; Lortie, 1975). Their performance is judged by the same standards as their more experienced colleagues, yet much of the job of teaching is learned through experience (Lortie, 1975). The feeling of inadequacy this engenders is

aggravated in the situations in which novices are given the least prestigious, and often most difficult, teaching assignments (Chubbuck et al., 2001; Lortie, 1975; Tellez, 1992). Facing such a daunting task alone, it is not surprising that so many novices choose not to stay in teaching.

In an attempt to stem the tide of new teachers leaving the field, researchers have worked to identify the needs of new teachers and find ways to meet them. Novice teachers face a wide range of challenges of both a professional and personal nature (Gold, 1996). Some of the professional needs relate directly to fundamental issues of classroom instruction such as learning to plan, organize, and present curriculum, and assess students' performance (Gold, 1996). They must also learn the interpersonal communication skills needed to work with students, colleagues, administrators, and parents (Veenman, 1984). Other problems may arise from the school setting itself. In less affluent districts, the new teacher may be last in line to compete for limited resources and have to learn to "make do" with the inadequate or poor-quality teaching materials available to them (Gold, 1996; Odell & Ferraro, 1992).

The emotional needs of new teachers can be as challenging as the professional ones. They have been trained to expect many of the instructional issues they face, but the emotional toll they face when they realize that teaching is not what they expected often comes as a shock (Veenman, 1984). Unable to meet the expectations they had for themselves as a "good" teacher, many fear that their secret -- their inadequacy as a "real" teacher -- will be revealed if administrators or peers witness their performance in the classroom (Chubbuck et al., 2001). As a result, new teachers may feel threatened by the

idea of being evaluated, which heightens their need to feel professionally and emotionally “safe” with the people in whom they confide (Chubbuck et al., 2001).

Mentoring is one way schools have found to meet the professional and emotional needs of new teachers (Abell, Dillon, Hopkins, McNerey, & O'Brien, 1995; Wildman, Magliaro, & Niles, 1992). It is difficult, however, to describe the "typical" mentoring program or the role of a "typical" mentor. Beyond the fact that all are intended to support novices in one way or another, new teacher mentoring programs are amazingly diverse in purpose, design, and format. Program sponsors range from single school districts and universities to statewide consortiums (Abell et al., 1995; Chubbuck et al., 2001; Feiman-Nemser, 2001a). Mentors, in turn, have a wide variety of positions and expectations. Some are full-time employees in charge of overseeing a large number of new teachers, while others are unpaid experienced teachers who have volunteered to help a new teacher down the hall (Hawkey, 1997). The goal of some programs is simply to reduce attrition, some are intended to make new teachers more effective, and others have been put in place as part of an overall induction and assessment program (Abell et al., 1995; Chubbuck et al., 2001; Gold, 1996).

In spite of the differences, mentoring programs of all shapes and sizes exhibit some of the same limitations because of their face-to-face format. First, there is the issue of time. Most mentors and their novice teacher protégés (sometimes called mentees) have difficulty finding a time to meet at school (Gratch, 1998). In programs where full-time mentors are charged with overseeing the new teachers, they are often asked to work with so many protégés at one time that each new teacher receives little one-on-one time with

his or her mentor (Feiman-Nemser, 2001a). Next, there is the issue of professional and personal (emotional) safety. If mentors are supervisors, the difference in power may prevent open communication on the part of a new teacher who views mentoring as yet one more opportunity to be found incompetent (Chubbuck et al., 2001). Micropolitical or interpersonal tensions may also pose a problem for co-workers who are mentor and protégé (Hawkey, 1997).

In the past several years, teacher training and development programs have turned to online mentoring (sometimes called “telementoring” or “e-mentoring”) as a way of avoiding some of the problems associated with face-to-face mentoring. There are four key arguments in support of online reflection. First, communicating electronically is more flexible in terms of time. Email and other forms of asynchronous computer-mediated communication like electronic bulletin boards allow new teachers and their mentors to communicate at different times and avoid the scheduling headaches associated with arranging meetings at during school hours (Hawkes & Romiszowski, 2001; Seabrooks, Kenney, & LaMontaigne, 2000). Second, online relationships allow protégés increased access to mentors. In situations where protégé and mentor do not teach in the same school, the additional time flexibility allows mentoring teams more frequent opportunities to engage in dialogue more meaningful than greeting each other in the hallway. The knowledge that a mentor is only an email away can reduce novices’ feelings of isolation (Babinski, Jones, & DeWert, 2001; Nuernberger, 1998). Third, new teachers may perceive online mentoring as “safer”. When protégé and mentor do not teach at the same school, the micropolitical tensions that arise in some mentoring relationships are no

longer a problem. Researchers have found that the perception of privacy in email messages leads many people to share feelings and information they would be uncomfortable revealing in person (Baron, 1998b; Harasim, 1993). With less fear of reprisal, protégés are more likely to share the burden of their feelings of frustration or inadequacy with their mentors (DeWert, Babinski, & Jones, 2003). A fourth argument in favor of online mentoring programs is that communicating electronically may promote reflection among participants.

Many researchers argue that mentoring at its best involves reflection on practice (Reiman, 1999; Seabrooks et al., 2000; Wildman et al., 1992). Other research suggests that asynchronous online communication facilitates reflection in a wide range of other teacher education and training contexts (Barnes, 1998; Honeycutt, 2001; Romeo & Caron, 1999; Russell & Cohen, 1997; Seabrooks et al., 2000). Strategies that have proven effective in eliciting reflection in these contexts include interactive or collaborative journaling (Bean & Stevens, 2002; Maloney & Campbell-Evans, 2002; Russell & Cohen, 1997) and reflective group dialogue using an electronic bulletin boards or email lists (Bean & Stevens, 2002; Hawkes & Romiszowski, 2001; Romeo & Caron, 1999). Online mentoring, which affords aspects of both journaling and dialogue, is set to take advantage of the benefits of both strategies.

Researchers on teacher preparation have found that reflection during online activities – just as in face-to-face interactions – is neither automatic nor guaranteed. For example, Harrington and Hathaway (1994) studied reflection among a class of preservice teachers enrolled in their first semester of education courses. They concluded that even

when provided opportunity and scaffolding for reflection, some students lacked the maturity to do so. Thus, research, while suggesting that the dual nature of online communication may promote reflection, also indicates that support or scaffolding is necessary to make it happen (Bean & Stevens, 2002).

However, much of the research done on reflection in online contexts has either been conducted at the preservice level or has been based on the assumption that there were few differences between preservice and inservice contexts. Practicing teachers face challenges that are very different than their preservice counterparts.

The study presented here expands the research on the connection between online communication and mentoring in an inservice context by examining the email messages exchanged by experienced teacher mentors and novice teacher protégés. Cases come from among participants of university-sponsored online support program for novice teachers. In this voluntary program, new teachers who are soon to graduate or have recently graduated teacher preparation program at the university select and correspond via email with experienced teacher mentors from around the state. (While eligibility extends from the final semester of preservice training through the end of the second full year in the classroom, novice teachers included in this study began communicating with their mentors near the end of the semester or after graduating. This means that the great majority of the novice's talk assumes perspective of a practicing teacher.)

The overarching question I designed this study to address was how mentoring was enacted through the teachers' talk. Based on the literature that suggests that online communication may support reflection, I examined how and to what extent they

incorporated reflection into that talk. Before describing how I approached these questions. I first clarify the theoretical assumptions upon which they were based.

Theoretical Foundations:

This study is based theoretically on the work of Lev Vygotsky (1978) and other proponents of a sociocultural model of learning (Wells, 1999; Wertsch, 1991). From this perspective, knowledge is not viewed as a property possessed by a single individual or a thing transmitted from one person to another. Instead, knowledge is socially constructed - it arises through the process of joint activity (Wertsch, 1991). Knowledge is never context-free; because knowledge construction takes place in and is shaped by a particular cultural, historical, and institutional milieu, any examination of the learning process must include a consideration of the context in which it occurs (Wertsch, 1991).

According to Vygotsky, the internalization of socially constructed knowledge is a central key to learning (Wertsch, 1991). The currency of learning is language. As individuals interact with the people around them, they talk to each other, negotiating a shared understanding through talk (Wells, 1999; Wertsch, 1991). Over time, the learner internalizes this understanding and dialogue. In turn, this internalized learning/dialogue influences future interactions. Vygotsky (1978) referred to the process as moving from the "intermental/interpsychological" plane to the "intramental/intrapsychological" plane. He emphasized the profound importance talk has on a child's development, saying that "language arises initially as a means of communication between the child and the people in his environment. Only subsequently, upon conversion to internal speech does it come to organize the child's thought..." (Vygotsky, 1978, pg.89). Jerome Bruner (1990)

expressed a similar opinion, asserting that "the child does not enter the life of his or her group as a private and autistic sport of primary processes, but rather as a participant in a larger public process in which public meanings are negotiated" (pg. 13).

The zone of proximal development is another idea relevant to this study put forth by Vygotsky. Receiving the support from a more experienced other allows a novice to work at a level of competence they would not be able to attain on their own. This creates a *zone of proximal development*, defined by Vygotsky (1978) as the "distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers" (pg. 86).

A third important construct in the sociocultural theory of learning is the notion of mediation. Vygotsky claimed that "higher mental functioning and human action in general are mediated by tools (or "technical tools") and signs (or "psychological tools")" (Wertsch, 1991). Semiotic mediation is important to discourse in that actors use language to share meaning, but at the same time, language shapes the activities they engage in and their interpretations thereof. The well-known colloquial expression "if all you have is a hammer, you treat everything like a nail" serves as an analogy to the concept of semiotic mediation. Language is the tool with which meaning is constructed, but the character of the tool shapes the resulting construction; just as a hammer implies the use of nails rather than screws or pegs, the ways languages and other symbolic systems organize ideas imply the kinds of knowledge that is constructed (e.g. if one talks about numbers in only in terms of Roman numerals, the Arabic concept of zero does not follow).

Wells extends the discussion of mediation to include modes of communication, contrasting the characteristics and functions of spoken and written text (1999). He argued that the second order symbolism of written text in combination with the relative permanence of written artifacts contribute to the "relatively great abstractness of writing" (Wells, 1999, pg. 141). He characterized written text as exemplifying second order symbolism because in writing, letters stand for words and the words in turn stand for ideas. He argued that the longer time required to produce written texts means that they are well suited for use in individual reflection, but the dialogic exchanges in speech, with their quick production and response are better suited for use in collaborative action (Wells, 1999). It stands to reason that electronically-mediated communication, whose nature falls somewhere between formal writing and informal speech depending upon the context in which it is used (Ferrara, Brunner, & Whittemore, 1991), would support both reflection and dialogue.

"Reflection" is a term notorious in the teacher education literature for being difficult to define - a "blurry" and "difficult concept to grasp and hold on to" (Roskos, Vukelich, & Risko, 2001, pg. 599). Modern discussions of reflection are based on the work of John Dewey (1933), who saw reflection as the "active, persistent, and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it, and the further conclusions to which it tends" (, pg. 6). Fifty years later, Schon (1983; 1987) expanded on the idea of reflection and combined it with his model of *knowing-in-action*. He studied the practice of professionals (including architects, lawyers and teachers) and concluded that rather than basing their decisions on an organized set of

codified rules, expert practitioners draw on a pool of tacit knowledge beyond that which they can easily articulate (Schon, 1983). By revisiting previous experiences in making decisions while an activity is still ongoing (reflection-in-practice) or after a project is complete (reflection-on-practice) practitioners are able to make tacit professional knowledge explicit and available for examination or critique (Schon, 1983; Zeichner & Liston, 1996).

Reflective discourse is often organized into a three or four-tiered hierarchy (depending on whether one considers non-reflective discourse to be part of the hierarchy) (Roskos, Vukelich, & Risko). The first level of reflection is what Van Manen (1977) referred to as *technical reflection*. In this form, reflection is a basic component of a problem-solving process; after the activity is complete, the individual or group evaluates the success or failure of its various aspects in order to improve the effectiveness of the next implementation (Hatton & Smith, 1995; Sparks-Langer & Colton, 1991; Van Manen, 1977). The second level is *practical reflection* in which the goals and underlying assumptions are judged in addition to the effectiveness of actions and the success of their outcomes, those reflecting reexamine their goals and underlying assumptions. *Critical reflection*, the most sophisticated form of reflection, calls for “considerations involving moral and ethical criteria... [and] judgments about whether professional activity is equitable, just and respectful of persons or not” (Hatton & Smith, 1995, pg. 35).

Research Questions

With a sociocultural foundation in mind, I return to the study outlined here. Olshtain and Kupferberg (1998) proposed that the "study of teacher's discourse provides

us with a peephole into the practitioner's ongoing narrative thinking, illustrating how knowledge develops and becomes evident in reflective-narrative discourse" (pg. 195). This is exactly the approach this study takes. By focusing on the discourse in which experienced teacher mentors and their novice teacher protégés engage in this context, I hoped to move the discussion beyond the promise of online mentoring to the process of online mentoring. An improved understanding of what happens when new teachers communicate with experienced teacher mentors online is important to the planning of programs designed to support novice teachers. This knowledge should allow those who plan and oversee these often multi-million dollar programs to make more informed decisions about incorporating an online component in their support strategies.

Below are the questions I addressed in this study:

1. How is mentoring enacted in the talk taking place between mentors and protégés in this online context?
2. To what degree, in what ways, and to what effect is reflective talk incorporated in the talk taking place between mentors and protégés in this online context?

Organizational Framework

The rest of discussion is organized into four chapters. In the next chapter, I look at the previous research that has been done on novice teachers, mentoring in face-to-face and online contexts, computer-mediated discourse, and reflection. In Chapter 3, I explain the approach I used in interpreting the data, provide a description of the research site and participants, and outline the methods I used to gather and analyze the data. In Chapter 4, I discuss my findings and the conclusions I drew from what I found. In Chapter 5, I

summarize the study, examine its theoretical and practical implications, and explore potential directions for future research.

CHAPTER II

LITERATURE REVIEW

A discussion of reflection in online mentoring speaks to several lines of research including new teachers' needs, mentoring novice teachers, computer-mediated communication and discourse, and reflection. The line of reasoning my argument follows is this. New teachers are leaving the profession in high numbers because they face a number of challenges as they transition from student to teacher. Mentoring is an effective way of addressing those needs, but face-to-face mentoring poses some challenges that may keep mentors and protégés from engaging in the reflective dialogue that characterizes the best mentoring relationships. Proponents assert that online mentoring overcomes issues of time, place, and politics. In addition, research on computer-mediated discourse suggests that online communication encourages participants to engage in reflection. Studies done on the impact that online communication has on teacher education seem to support the claim that teachers will engage in reflection on online mentoring. However, they also serve to caution against the assumption that because online communication supports reflective discourse, teachers will automatically engage in reflection in this context. Therefore, the appropriate question to ask in this case then is not "can they?", but "do they?"

New Teachers' Needs

During their initial days as full-fledged classroom teachers, novices traditionally experience a "reality shock" as their idealistic views of the profession collapse under the "harsh and rude reality of everyday classroom life" (Veenman, 1984, pg. 143). Well-

known among practicing teachers who often say "I didn't learn anything about teaching in college," the disconnect between preservice training and inservice demands puts a great deal of strain on new teachers (Wideen, Mayer-Smith, & Moon, 1998); they are expected to perform two jobs at once: teaching and learning to teach (Feiman-Nemser, 2001a). At the same time, these new teachers enter a highly unique professional context in which they are not only expected to perform at the same level of competency as their more experienced colleagues, they are also left largely on their own to sink or swim (Lortie, 1975). There are a number of aspects of teacher culture that lead to this situation. Teachers, who face the students alone once they close their classroom doors, are often isolated from their peers, and it is considered bad form for one teacher to criticize the work of another (Chubbuck et al., 2001; Lortie, 1975). New teachers are sometimes given the worst assignments teaching the most alienated students with inadequate resources upon which to draw (Chubbuck et al., 2001; Tellez, 1992).

Researchers have looked at many of these issues to uncover the areas in which new teachers can benefit from receiving support. To understand why these issues are important, one must first understand the concerns of new teachers. In 1969, Francis Fuller opened a discussion of the concerns of new teachers and found that they tend to go through three developmental stages. During the student teaching/intern period in which novices are still working within the university framework under the supervision of an experienced teacher, they experience little concern - this is what Fuller (1969) referred to as the "non-concern" stage. Fuller (1969) posited that once new teachers are on their own in the classroom, they enter a "concerned with self" period in which they are able to

concentrate on little more than their own performance . This parallels what Veenman (1984) identified later as a survival stage. With time, new teachers may reach a point at which they can think outside of their sphere of self to consider the institutional context in which they teach, and begin to address the concerns of students as individuals (Fuller, 1969; Veenman, 1984).

Although the concerns and needs of new teachers change over time, most need ongoing support dealing with the same instructional challenges that face all teachers. The kinds of instructional issues they tend to find difficult include classroom management and lesson planning (Veenman, 1984). Other needs depend on the school context in which the new teachers find themselves. If novices are teaching a subject in which they lack expertise (e.g. a life science teacher teaching language arts), they may need additional subject matter knowledge resources to supplement and support their understanding of the topics at hand (Schulman, 1987). Access to resources is another potential obstacle. The problem may be as simple as knowing where and how to make copies or as difficult as "making do" in a science classroom without microscopes (Gold, 1996; Veenman, 1984). The interpersonal skills of dealing with individual students and their parents can also prove difficult for new teachers (Wildman et al., 1992).

Transitioning from student to teacher is a stressful process (Chubbuck et al., 2001; Feiman-Nemser, 2001b), and novices need all of the emotional support they can get (Gold, 1996). Above all else, new teachers need to feel emotionally and professionally "safe" (Chubbuck et al., 2001). Especially in the initial stages of professional development, new teachers may feel inadequate - they worry that their colleagues will

somehow discover their incompetence (Chubbuck et al., 2001). As a result, they may fear confiding in their colleagues (Chubbuck et al., 2001). When they need help, new teachers may opt to try to work out problems on their own rather than seek outside help (Lortie, 1975). Those who do seek help tend to avoid the hierarchical support system of supervisors, administrators, and the like, preferring instead the informal support of peers (Lortie, 1975, pg. 72).

Mentoring New Teachers

Beginning in the 1980s, school districts across the country began to turn to mentoring as a strategy for reducing attrition among new teachers (Little, 1990; Wildman et al., 1992). Mentoring programs have proven successful at responding to the changing concerns and needs of beginning teachers (Abell et al., 1995). As word spread of initial successes, a whole range of institutions - from school districts to regional and state educational authorities to universities - began to offer mentoring programs for new teachers (Abell et al., 1995; Chubbuck et al., 2001; Feiman-Nemser, 2001b). These program agendas tend to fall into three groups: those that aim solely to reduce teacher attrition, those that try to improve the practice of new teachers, and those whose purpose is to improve the practice and evaluate the new teacher.

Mentors in these programs take on a variety of roles. The role most often mentioned is that of a trusted colleague or confidant (Abell et al., 1995; Head, Reiman, & Thies-Sprinthall, 1992; Williams et al., 1998). Others include parent figure (Abell et al., 1995), role model (Little, 1990; Williams et al., 1998), and scaffolder (Abell et al., 1995). In the role of scaffolder, mentors use their experience as a conceptual scaffold to support

the new teachers as they learn planning and problem-solving (Abell et al., 1995, pg. 182). Wang and O (Wang & Odell, 2002) begins with a similar premise, holding that mentoring is a form of assisted performance in which novice teachers, working with a mentor, are able to work within their zone of proximal development as they learn to teach.

A similar role mentors may assume is that of coach who provides feedback (Head et al., 1992). In some cases, feedback may be more formalized and come in the form of official assessment or evaluation (Abell et al., 1995; Williams et al., 1998). The role of assessment is an ongoing debate within the new teacher mentoring literature - some argue that mentors are not able to work well in the dual role of evaluator and supporter (Abell et al., 1995), while others believe that assessment is necessary for new teachers to improve their practice (Feiman-Nemser, 2001a). Wildman et al. (Wildman et al., 1992) argue that despite the long list of potential roles for mentors, mentoring is still a highly personalized process in which roles cannot be prescribed, but need to be defined by mentors and protégés for themselves.

What kinds of support do new teachers receive from mentors? Research indicates that most new teachers receive much-needed emotional and personal support from the one-on-one relationship (Abell et al., 1995; Hawkey, 1997; Williams et al., 1998). When mentor and novice work on the same campus, the new teacher can receive the kind of logistical support that will help her become oriented to campus (Head et al., 1992). Socialization into the culture of teaching is another benefit novices receive from mentoring (Colwell, 1998; Little, 1990). This can prove beneficial when new teachers

gain professional knowledge from their mentors, or negative if the novice is initiated into a culture of mediocrity (Colwell, 1998).

Mentoring at its most ideal creates an environment that encourages new teachers to reflect upon their initial teaching experiences (Reiman, 1999). This kind of reflection develops from the interactions between mentor and protégé that encourage them to think about what they are doing and become actively involved in their own learning (Williams et al., 1998). Sharing their stories of experience helps mentors make their tacit professional knowledge explicit and accessible to novices and encourages novices to reflect on their own practice and their understanding thereof (Abell et al., 1995). However, the ideal of mentoring is not always the reality of the mentoring experience.

Part of the explanation may be found in the environment in which mentoring takes place. The face-to-face context of most programs presents difficulties and limitations that may prove problematic for new teachers and their mentors. Time is the enemy of on-site mentoring. Teachers, especially those in elementary schools, have little time to meet with one another during the busy school day (Gratch, 1998; Head et al., 1992; Wildman et al., 1992). Interpersonal issues can also stand in the way of effective mentoring relationships (Hawkey, 1997). Novices who teach alongside their mentors may be competing with them for limited resources, the most prestigious teaching assignments, or position in the school social hierarchy - this may lead to micropolitical tensions that undermine the trust vital to mentoring relationships (Achinstein, 2002; Stanulis & Russell, 2000). Relationships may become especially problematic and issues of power arise when protégés are assigned to work with mentors who are school administrators or

other supervisory personnel (Chubbuck et al., 2001). If they develop a close relationship without establishing a climate in which the protégé feels free to make her own choices, the mentor may give advice that the protégé feels she must follow whether or not she agrees with it (Maynard, 2001).

Online Mentoring

Online mentoring offers a support option that overcomes some of the difficulties that may arise in face-to-face contexts. Programs first emerged in the early 1990s (Merseeth, 1992), but only began to proliferate as home Internet access became commonplace. Like their face-to-face counterparts, online mentoring programs assume a wide variety of forms. One large-scale program is part of the Novice Teacher Support Project, jointly sponsored by the University of Illinois and a number of local, regional and statewide education offices (Klecka, Clift, & Thomas, 2002). In the online component of the NTSP, designed to supplement the existing face-to-face activities, new teachers are given the opportunity to work with experienced teachers using an asynchronous electronic conferencing system (Klecka et al., 2002). A second program which is newer and more large-scale is the e-Mentoring for Student Success (eMSS) program -- a partnership between the National Science Teachers Association, the New Teacher Center at USC Santa Cruz and Montana State University (*eMSS e-Mentoring for Student Success*). The eMSS program has been in place since 2003, and the goal is raising middle school and high school science achievement through improving the practice of novice teachers. They have a network of support that includes experienced science teachers, scientists and school administrators in both face-to-face and online roles

(*eMSS e-Mentoring for Student Success*). Other programs, like Education Minnesota's e-mentoring program, are much more informal in nature. In this program, new teachers use email to communicate with experienced teachers throughout the state (*eMSS e-Mentoring for Student Success*). The goal of the Education Minnesota's program is to give new teachers access to information that the experienced teachers had learned (*eMSS e-Mentoring for Student Success*). In a much smaller-scale program at Southwest Texas State University new teachers exchanged email messages with a faculty member in support of action research projects they were conducting in their classrooms (Davis & Resta, 2002).

Asynchronous formats such as e-mail, listserv, and electronic conferencing/bulletin board systems give teachers much more flexibility than they have in traditional mentoring (Harasim, 1993; Hawkes & Romiszowski, 2001; Seabrooks et al., 2000). Being able to send and receive messages whenever it is convenient for them allows participants to avoid having to find a time that both of them are free to meet and a place in which to do so (Harasim, 1993; Seabrooks et al., 2000). Knowing that a mentor is only an email away can also reduce the isolation they feel in the classroom (Nuernberger, 1998).

Research on the nature of computer-mediated communication as well as some new research on online teacher education suggests that this type of online dialogue may support and encourage reflection among participants (Romeo & Caron, 1999; Russell & Cohen, 1997; Seabrooks et al., 2000). Studying reflection among preservice teachers in an online mentoring program, Seabrooks and colleagues (2000) found that the "Internet

relationship [among mentors and novices] provides opportunities for mentorees to reflect on and receive feedback regarding the classroom events in which they are observing or participating" (pg. 223). Romeo and Caron (1999) examined the listserv messages exchanged as part of a graduate course in literacy and discovered that the most frequent kind of talk was telling stories. Students held telling stories in great importance, and Romeo and Caron (1999) concluded from looking at their discourse that telling the stories served as a form of reflection and increased their understanding of teaching practices.

Computer Mediated Discourse

The research on the communicative limitations and affordances of computer-mediated communication (CMC) dates back to the 1980s. Early CMC discussions concentrated primarily on the limitations of the medium (Hancock & Dunham, 2001). Researchers argued that because CMC lacked non-verbal social context cues, it was task-oriented and depersonalized in nature (Liu, Ginther, & Zelhart, 2002; Sproull & Kiesler, 1986). These researchers suggested that email was ill-suited for developing supportive relationships such as mentoring (Nuernberger, 1998; Riva & Galimberti, 1997).

As work continued, researchers began to question these arguments. Some argued that email and other forms of CMC were neither information rich nor lean; instead, the richness depended on the context in which it was used (Lee, 1994). Others took the model a step further, saying that CMC was hyperpersonal (Walther, 1996). Their research suggested that CMC interactions in some cases were in fact more socially-oriented than those in face-to-face contexts (Hancock & Dunham, 2001; Walther & Burgoon, 1992).

Users compensated for the missing cues by inventing new ones. They developed emoticons (smileys) to convey tone, used ellipses to indicate pauses, and capitalized letters analogous to volume (Hancock & Dunham, 2001; Liu et al., 2002). Message duration and frequency also told the message recipient the interest level of the sender (Lee, 1994; Lengel & Daft, 1988).

Much of the ambiguity associated with our understanding of CMC arises from its relative novelty. Computer mediated discourse is still an emerging form of language, and exhibits features of both speech and writing (Baron, 1998b; Davis & Brewer, 1997; Ferrara et al., 1991). It can have the informal and ephemeral feeling of conversation, but maintains the permanence of written text (Rheingold, 1993). Depending on formality of the context in which it is exchanged, a message can have characteristics more akin to letter writing or spoken conversation (Connolly & Pemberton, 1996). Baron (1998b), comparing the emergence of email with the early days of the widespread use of the telephone, proposes that it is going through a maturation process. As people become more comfortable with its use, the technology becomes more "transparent" and less intrusive in the process of communication (Russell & Cohen, 1997). Some of the early non-verbal cuing strategies like emoticons have become less common as users learn to read between the lines in email messages (Baron, 1998b), and the usage norms computer-mediated discourse originally lacked are in the process of becoming conventionalized (Ferrara et al., 1991).

One of the most significant aspects of asynchronous computer-mediated communication (such as email and electronic bulleting boards) in terms of an educational

context is the reflective discourse associated with its use. Two central aspects of the nature of this medium encourage users to reflect. First is its written nature. Written text can be used not only to convey what one already understands, but also to build knowledge through the composition process itself (Wells, 1999). The longer production time of written discourse and the lack of physical presence of the recipient (reader) mean that the writer needs to translate his commonsense understanding into a form the reader will understand (Wells, 1999). Journal writing, in which the writer is treating himself as the recipient, is good for such a purpose, but it lacks the sense that one is writing for an interested audience (Wells, 1999). When applied to an asynchronous electronic context, these "others" are available to reflect and build upon the sender's ideas (Mitchell, 2003). A second aspect of asynchronous electronic discourse that contributes to reflection is the time lag between exchanges. This delay gives the recipients time to read and reflect what they have read, and they have an opportunity to rethink and revise their responses before sending them (Babinski et al., 2001; Honeycutt, 2001; Scardamalia & Bereiter, 1994).

Reflection

Researchers have assigned the notion of reflection a wide array of meanings. It is a concept that is notorious for making intuitive sense, yet very difficult to define in specific terms (Roskos et al., 2001). However, getting a sense of the thread that ties together is made easier because most treatments of reflection trace their origins back to the work of two theorists: John Dewey (1933) and Donald Schon (1983; 1987). Thus, an examination of their frameworks for understanding reflection sheds a great deal of light

on current discussions. In the next section, I look at the perspectives of reflection promoted by Dewey and Schon as well as the discussions that grew out of them.

Foundational Models

Dewey: Thoughtful consideration

The foundation that underlies most frameworks for understanding reflection is Dewey's (1933) definition of the term as the "active, persistent, and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it, and the further conclusions to which it tends" (1933, pg. 6). He viewed reflection as having two dimensions as both an attribute and a skill. As an attribute, reflection implies that an individual is open-minded, responsible, and wholehearted (Dewey, 1933). Reflection also requires the skills of keen observation and reasoned analysis (Dewey, 1933). Both play an important role in Dewey's understanding of reflective action. His five-step model portrays reflection as a way of solving problems. It involves a series of decisions shaped by the open-mindedness, responsibility and wholeheartedness and actions based on keen observation and reasoned analysis. The Deweyan process of reflection is initiated by a feeling of uncertainty that leads an individual to stop to analyze experiences. Once a problem is perceived, it is located and defined. Next, a potential solution is suggested, followed by a reasoned analysis of the implications and possible outcomes of the suggestion. After continued observation and experiment, the solution is either accepted or rejected (Dewey, 1933).

Schon: Reflective practitioners

Donald Schön is a second central figure in the reflection literature. He based his model on a concept he called *knowing-in-action*, arguing that "knowledge is ordinarily tacit, implicit in our patterns of action and in our feel for the stuff in which we are dealing"(Schon, 1983, pg. 49). He contrasted this understanding of knowledge derived from practice to the "technical rationality" arising from the artificial division between theory and practice that values one over the other (Schon, 1983). According to positivist epistemology, problems should be solved and decisions based on context-free scientific knowledge and empirical evidence. The resulting theories are then explained to professionals for them to use in their practice (Schon, 1983). Schon questioned the notion that theory should be imposed from an outside "scientific" source. After spending a great deal of time watching, listening, and talking to professionals at work in a number of different fields, he concluded that the day-to-day decisions these experts make about their practice are informed by their experience rather than determined by "rational" scientific theory (Schon, 1983). Over time, accumulated experience forms a repertoire from which professionals draw during practice. In turn, reflection is the means by which tacit professional knowledge is surfaced (Schon, 1987; Schulman, 1987). He spoke of two kinds of reflection: *reflection-on-action*, and *reflection-in-action*. In the first, a practitioner or a group of practitioners look back upon a past project or situation and "explore the understandings they have brought to the handling of the case" (Schon, 1983, pg. 54). This process allows them to use the knowledge they have accumulated through experience to "reframe" their perception of an issue or problem (Schon, 1987). The second form of reflection – reflection-in-action -- occurs in the midst of carrying out a

project or an activity. When done alone, reflection-in-action is similar to what is known colloquially as "thinking on your feet"; as issues arise during practice, the practitioner reflects for a moment and applies what she knows from experience to her decision making (Schon, 1983). Reflection-in-action among a group involves dialogue and debate about the nature of decisions, the value of the goals behind them and the implications of actions (Schon, 1983; Sparks-Langer & Colton, 1991). The notion of reflection revolving around discussions of practice introduces the discussion of the practical knowledge of teachers. While this literature does not focus explicitly and exclusively on reflection, it has made significant contributions to models of reflection. Thus, before turning to look at the models of reflection, I touch on the work of Shulman (1987), Clandinin and Connelly (1996a), and others who have described teachers, their professional knowledge, and the ways they share that knowledge, primarily through storytelling (Elbaz, 1988; Zeek, Foote, & Walker, 2001).

Professional Knowledge

Shulman's model of teacher expertise was also founded on the presumption that experienced teachers possess a wealth of wisdom gained through practice (1987). He argued that though gathered through experience with individual cases, there is knowledge base for teachers that can be codified into a series of categories including content knowledge, general pedagogical knowledge, and "knowledge of educational ends, purposes, and values" (Schulman, 1987, pg. 12). Clandinin and Connelly (1996b; 1995) argued that teachers' knowledge arises not only through professional experience, but personal experience as well. In their discussion of teachers' personal practical knowledge,

Clandinin and Connelly (1996b; 1995) emphasized the important role of stories. They argued that teachers not only tell stories, but they also "know their lives in terms of stories" (Clandinin & Connelly, 1995, pg. 12). This means that they "live stories, tell stories of those lives, read tell [*sic*] stories with changed possibilities, and relive the changed stories" (Clandinin & Connelly, 1995, pg. 12). Narrative thus allows teachers to articulate and share their personal practical knowledge as well "reflect upon their teaching and confront their values as they develop and change during their professional career[s]" (Ambrose, 1993, pg. 274).

Current Approaches to Reflection

Three perspectives underlie current discussions of reflection. They include cognitive, narrative and critical approaches (Sparks-Langer & Colton, 1991)

Cognitive

The cognitive approach follows Dewey's (1933) framework and treats reflection as a decision-making process. Reflection is seen as thoughtful action that considers the justification and consequences it may have (Calderhead, 1989; Grimmett, MacKinnon, & Erickson, 1990). According to this model, reflection is associated with metacognitive processes such as comparison, evaluation, and self-direction (Calderhead, 1989), and is often instigated by disruptive events or feelings of uncertainty (Tsangaridou & O'Sullivan, 1997). The goal of cognitive-model reflection is to help teachers follow the teaching practices that research has found to be effective (Grimmett et al., 1990). This approach is often taken by those who work in preservice teacher education as they seek to

teach students to apply the theory they have learned in classes to their developing practice (Cruickshank, 1987)

Narrative

Sparks-Langer and Colton (1991) refer to the second perspective as a narrative model of reflection. Schon's (1983, 1987) work is the basis for the narrative model. From this point of view, reflection is seen to emerge from everyday practices and experiences in the classroom (Calderhead, 1989; Tsangaridou & O'Sullivan, 1997). Engaging in reflection-in-practice, the teacher frames and reframes problems as they arise, watching for surprises that result from previous moves and responding with new moves that "give new meanings and directions to the development of the artifact" (Calderhead, 1989, pg. 31). Coaching is one way to help the less experienced practice reflection; with a more experienced peer available to model reflective discourse and scaffold the novice's attempts to engage in it, the novice is able to gain greater access to tacit knowledge than she could alone (Calderhead, 1989; Roskos, Boehlen, & Walker, 2000).

Critical

Critical frameworks build upon the writings of critical theorists such as Habermas (1974) and Freire (1970) and advocates reflection as an emancipatory activity through which the teacher reconstructs experience and its interpretation (Calderhead, 1989; Grimmett et al., 1990). Calderhead (1989) described critical reflection as the "process of becoming aware of one's context, of the influences of societal and ideological constraints on previously taken-for-granted purposes" (pg. 44). The reconstruction process of reflection may mean that the teacher focuses on aspects of a situation or activity to which

she has not attended before, or it may imply more in-depth consciousness-raising as the teacher reexamines the cultural milieu in which she is working or the taken-for-granted assumptions she has about teaching (Grimmett et al., 1990). Critical reflection has a more ambitious aim than the other two models; supporters of this approach do not see improved practice as the ultimate goal of reflection. Instead, they hope that teachers who engage in critical reflection will contribute to change in the wider educational system to make it more equitable (Francis, 1995; Grimmett et al., 1990).

Reflective Hierarchy

Not all reflection is created alike. Examining the sociopolitical dimensions of a school's organizational structure is certainly quite different from deciding whether or not (or how) to change a classroom seating chart. To deal with the range of possibilities, Van Manen (1977) created a three-level hierarchy that has since become the standard for considering the depth of reflection. The lowest level in the hierarchy is technical reflection, above that is practical reflection, and the highest form of reflection is critical reflection (Van Manen, 1977). Technical reflection requires a consideration of both the efficiency and effectiveness of an action, but does not examine its goals. Practical reflection includes a consideration of efficiency and effectiveness and in addition questions the goals themselves. In Van Manen's (1977) framework, critical reflection includes technical and practical issues and also considers the moral and ethical criteria by which goals are set and decisions made.

It is useful to point out that the definition of critical reflection varies considerably depending on the perspective of the researcher. From one point of view the notion of

critical has social, cultural and political overtones - it implies an emancipatory event (Grimmett et al., 1990). Another way of seeing it is as a "critical examination of experiences, knowledge and values, an understanding of the consequences of one's teaching, the ability to provide heartfelt justifications for one's beliefs and actions and a commitment to equality and respect for differences" (Zeichner & Liston, 1996, pg. 48). Critical reflection can also be associated with reframing - the process by which a practitioner examines and reconstructs past understandings and appreciating aspects that were previously ignored or viewed as unimportant (Grimmett et al., 1990). As a way of gaining a handle on this somewhat slippery concept, Harrington and Hathaway (1994) proposed a list of four central characteristics of critical reflection. It involved:

1. recognizing limitations in sociocultural, epistemic, and psychological assumptions
2. acknowledging and including multiple perspectives
3. considering the moral and ethical consequences of choices
4. clarifying reasoning processes when making and evaluating decisions

Others have added to Van Manen's (1977) hierarchy. Zeichner and Liston (Cruickshank, 1987; 1996) include a level of "routine" action below technical reflection. They asserted that routine action loses sight of possible alternatives, and it is "guided primarily by impulse, tradition, and authority" (Cruickshank, 1987, pg. 9). Hatton and Smith (1995) added a level to the top of the hierarchy called "contextualization of multiple viewpoints" that is a form of reflection-in-action in which the teacher applies the appropriate level of reflection in activities as they take place.

Reflective Teaching

Amidst all of the excitement about reflection and the value of reflective practice for teachers, one must consider the meaning of reflective teaching, what reflective teaching looks like, and how teachers learn to reflect. A number of researchers have critiqued the widespread enthusiasm for encouraging teachers to reflect without first identifying what they should reflect about or what quality they should aim for (Calderhead & Gates, 1993; Zeichner & Liston, 1987). Zeichner and Liston (1996) identified five key features of reflective teaching. These features include examining, framing and looking for solutions to dilemmas in classroom practice, questioning one's values and assumptions, consideration of one's institutional and cultural contexts, involvement in school change, and responsibility for one's own professional development (Zeichner & Liston, 1996).

Drawing from their personal practical knowledge, practicing teachers usually focus on a concrete event when they reflect (Tsangaridou & O'Sullivan, 1997). Preservice teachers who are lacking experience reflect on theory and on their prior beliefs; to help them learn to engage in reflective practice, they need authentic classroom experiences (Tsangaridou & O'Sullivan, 1997). Field experience, ethnographic case studies, and action research projects are three activities that have been shown to be effective in providing preservice teachers the necessary fodder for reflection (Hatton & Smith, 1995; Sparks-Langer & Colton, 1991).

Peers also play an important role in teaching reflection on practice. In the same way that working with peers allows learners to work in the zone of proximal

development, peers can help "stretch the limits of their colleagues capabilities of reflection" (Pugach & Johnson, 1990, pg. 16). Reiman (1999) referred to this as the teacher's "zone of proximal reflection." Collaborative dialogue also makes important contributions to developing reflective skills. Narrative is the central means by which tacit understandings can be made specific and open for consideration and improvement (Zeichner & Liston, 1996), and the feedback from peers as stories are told and retold and experiences are relived and reexamined (Clandinin & Connelly, 1996b). There is one important caveat about feedback: when feedback assumes the form of prescriptive advice, it can actually discourage future reflection (Pugach & Johnson, 1990). Journaling is a very popular strategy for encouraging reflective practice among preservice and novice teachers (Bain, Mills, Ballantyne, & Packer, 2002; Francis, 1995; Ross, 1990). Loughran (2002) proposed a variation on journaling in which students are encouraged to write in the form of anecdotes. In this activity, the author "constructs a personal account of a situation from his or her perspective as a central figure in a way that creates a sense of understanding of the given situation" (pg. 36).

Online Reflection

Researchers of online discourse say that the hybrid characteristics of this format make it especially well suited for supporting reflection. Some of the ways in which online communication has been used to promote reflective practice include electronic discussion boards, email, computer conferencing, and online reflective journals. Russell and Cohen (1997), university colleagues from Australia and the United States, found that they benefited a great deal from using email because it allowed them to collaborate with

someone who acted as a "critical friend and reflective colleague". Harrington and Hathaway (1994) used computer conferencing, Bean and Patel Stevens used discussion boards (2002) and had students create electronic reflections that were stimulated by cases. With the exception of the university email correspondents, each activity experienced negative as well as positive outcomes.

Difficulties in Teaching Reflection

Research has shown that providing teachers the opportunity to reflect does not mean that they will choose to do so (Maloney & Campbell-Evans, 2002; Reiman, 1999). One reason may be that reflection is not always automatic or even easy - it does not "just happen" (Wildman & Niles, 1987). Even in those cases in which preservice teachers are required to participate in reflective activities, they may reflect only superficially, treating this as yet another classroom requirement (Bean & Stevens, 2002; Cruickshank, 1987; Risko, Roskos, & Vukelich, 1999). Critical reflection is especially tricky because students are not "easily moved to incorporate the moral and ethical criteria or the social dimensions of the discourse of schooling into their reflection" (Francis, 1995, pg. 234). Why might this be the case? Harrington and Hathaway (1994) postulated that some students may not be developmentally ready to make use of the opportunity to reflect. The culture and organization of teaching may also contribute to the situation. First, reflection is not generally associated with being a teacher. Teaching is traditionally seen as a pragmatic, rather than theoretical, enterprise in which teachers learn from direct experience (Calderhead & Gates, 1993). Once in the classroom, teachers also have little time at school to spend reflecting (Wildman & Niles, 1987).

Addressing the Challenges

Scaffolding reflection and providing high quality feedback appear to overcome some of the problems faced when trying to teach reflection. Because reflection practice is an activity, one must not only learn about the outcome, but the "how to" as well. Careful scaffolding helps ensure that the teachers are engaging in the process to the desired extent and depth (Bean & Stevens, 2002). Another strategy is to provide students with detailed and clear feedback on the activities designed to elicit reflection (Bain et al., 2002; Roskos et al., 2001) Bain and colleagues (2002) argued that for reflective journaling, the use of guidelines and feedback on the process of recording one's thoughts is actually more effective and transferable than feedback focused on the teaching issues themselves. Practicing teachers have an additional need that if met will help address the problems with reflection - they need time to reflect (Pugach & Johnson, 1990).

It is clear that new teachers, faced with the multiple demands brought upon them by the difficult transition from sitting in the back of the classroom to standing in the front of the classroom, need support. Mentoring has proven to be a very good way of meeting these new teachers' needs and thus reducing the rate at which they leave the profession. Because face-to-face mentoring has a few clear limitations, some have offered up online mentoring as an alternative or a supplement to on-site mentoring. The argument often made is that asynchronous electronic discourse promotes reflection among users, but the research done on online activities which are intended to promote reflection (primarily in the context of preservice education) indicates that this is not always the case. In the next

chapter, I describe and discuss the methods I used to examine the connection between online mentoring and reflection.

CHAPTER III

METHOD

Paradigm

The research design for data collection and analysis in this study is based on an interpretivist paradigm. The roots of interpretivist research trace back to German neo-Kantian philosophers and social scientists. At the beginning of the 20th Century, in reaction to positivism, these theorists created a model that argued that *Verstehen* (understanding), rather than *Erklären* (explanation), should be the goal of the “human sciences” (Schwandt, 2000). Early proponents argued that “what distinguishes human (social) action from the movement of physical objects is that the former is inherently meaningful” (Schwandt, 2000). Thus, to understand human action requires interpretation of its meaning.

Over time, the *Verstehen* approach developed into what is now known as the interpretivist paradigm. A paradigm is a set of beliefs about the nature of reality (ontology) and the relationship between knower and known (epistemology). A researcher’s paradigm informs the methods he/she employs and shapes the research questions he/she poses. Interpretivists posit a notion of reality as existing outside of the individual. They view understanding as an “intellectual process whereby a knower... gains knowledge about an object” (Schwandt, 2000, pg. 194). The fundamental goal of interpretivist research is to “unearth the meaning” of human action (Schwandt, 2001). Interpretivist researchers make the ontological assumption that human social action is

intentional and inherently meaningful (Schwandt, 2000). They believe social action is meaningful only as it fits into the larger system of meanings in which it operates (Garfinkel & Sacks, 1970; Outhwaite, 1975); once an action is removed from its context, it becomes pointless. Schwandt (2000) stresses the importance of context, saying that "one must grasp the situation in which human actions make or acquire meaning to say one has an understanding of the particular action" (pg. 193). Because the purpose of social research is gaining insight into the meaning of actions, and meaning is best interpreted as part of a larger system, the clearest "understanding comes... from the act of looking over the shoulders of actors trying to figure out (both by conversing and observing) what the actors think they are up to" (Schwandt, 2000, pg. 192).

The Decision to Use the Interpretivist Paradigm

The nature of my data (electronic discourse) and the sociocultural theory that inform my focus led me to position my research in the interpretivist paradigm. I was interested in the ways the teachers constructed shared knowledge as they engaged in the joint activity of mentoring. Interpretivist methods and analytic tools helped me gain access to the meaning of their actions. The interpretivist emphasis on contextualizing research in the larger system fit well with my view of action as situated in and mediated by the social, historical, and political context in which it takes place.

Site Selection

The experienced teacher mentors and their novice teacher protégés whom I invited to take part in this study are former participants in the WINGS Online program. I selected WINGS as a (virtual) field site because of my previous experience with the

program. WINGS is an online mentoring program intended to support novice teachers through the transition from student to teacher. It was initiated in the fall of 2000 and jointly sponsored by the Colleges of Education, Liberal Arts, and Natural Sciences. The program was not designed specifically to improve practice or evaluate novices' performance; instead, WINGS was intended to support new teachers in any way they needed. An overarching goal of the program was to reduce the attrition rate among new teachers.

In WINGS, novice teachers who had graduated or were soon to graduate from the university's teacher preparation programs selected volunteer mentors who were experienced teachers from throughout the state of Texas. (Mentors received a small stipend each year). Participation by preservice teachers and new teachers was voluntary, and most were recruited through presentations by members of the WINGS staff during classes or other meetings. Others chose to join because of recommendations made by classmates or friends. Mentors were recruited in much the same way as protégés – through presentations at workshops or by word of mouth. Those interested in joining were directed to the website where experienced teachers could apply to serve as a mentor, and new teachers could select a mentor from the database of applicants according to information provided by the experienced teacher. Information in the database included mentors' teaching background and experience as well as their answers to a series of questions intended to elicit their philosophy of teaching. The information new teachers provided in their mentor application form included their current teaching assignment,

projected teaching assignment, and questions intended to uncover their perceived support needs and expectations of a mentor.

I served as a program facilitator from the initial implementation of WINGS in Fall 2000 until August 2003. As a facilitator, my primary role was to help participants deal with any technical problems that arose and support ongoing communication. After I received the information about the match from the director, I messaged the potential mentor with information about the novice's teaching background, perceived needs and expectations (all information from the mentor request form) and asked if he or she would agree to serve as this new teacher's mentor. If the experienced teacher agreed to work with the protégé, a private email list was created for them to use to communicate with each other.

The email lists operated in the following way. To send a message, the writer addressed it to an email list account located on the university email server; the server archived a copy of the message and then routed it to everyone on the list (mentor, protégé, and myself) and to the archive.

As the email list was being created, I sent the mentor and protégé a series of introductory messages. One explained how to use the private email list. A second described my role as their facilitator. A third provided tips on effective email communication, and a fourth that clarified my expectation that participants would message each other at least once per week. I then introduced myself to the participants and invited them to do the same. Once the introductions were complete, and the team began exchanging messages, I remained in the background. Teams knew I was able to see

their messages and occasionally addressed me in their messages, but the large majority of my messages were reminders sent to both members of the team via the email list or directly to the email account of a single participant who was particularly slow to respond.

Pilot Research

I carried out three preliminary studies with WINGS mentor/protégé teams prior to the current study. In the summer of 2002, I conducted a qualitative thematic analysis of samples of talk taken from the messages in which three teams engaged with the goal of learning more about the kind of support protégés received from mentors and the ways in which teammates created a shared understanding in an online context. The findings of that research suggested that although the content of the talk differed from team to team, all three spent time sharing stories of classroom experiences and engaging in dialogue about the practice of teaching.

In the fall of 2002, I completed a microanalysis of discourse of a single critical incident of the most prolific of the three teams included in the first study. The data consisted of ten messages exchanged over a two-week period. The study highlighted the various discursive strategies this team employed to maximize the coherence and continuity of their dialogue. The findings showed how this mentor and protégé created a conversation-like dialogue in a context that is not usually seen as conducive to such talk.

Finally, in August 2003 I completed a study with four other teams to examine changes in their talk over time. I found that each team's message exchange patterns followed a communicative life cycle, usually beginning with a flurry of messages near the beginning of the match and gradually tapering off as the protégé gained more

experience. However, the way the mentor and protégé talked to each other tended to be consistent over time. Although this project was not intended to be a comparison, as I looked at the messages to examine changes over time, I noted a striking dissimilarity between teams. The talk of some teams looked similar to the conversation-like communication I saw in the previous microanalysis project; they engaged in regular turn taking, and messages that initiated a topic usually received a response. In other cases, the patterns appeared more report-like. One team member would tell a story and invite comments (either explicit or implied), and the other either did not respond at all or replied to the message without addressing the information contained in the previous message. What were differences between the messages that received responses and those that did not? Under what conditions did the teams choose to reflect together? I was intrigued and anxious to learn more.

Sampling Decisions

I asked both partners of the mentoring teams included in the previous pilot projects to participate in this study. For those earlier studies, I had selected the teams according to the following criteria. First, each was a team for whom I had served as a facilitator, thus affording me an emic vantage point. Having the perspective of an insider allowed me to achieve a greater depth of understanding than if I worked with teachers with whom I was unfamiliar. This perspective permitted me to create the kind of "thick description" that is of central importance to interpretivist research (Geertz, 1973). Second, the teams selected had to have communicated actively with each other for at least a semester. I included this criterion to ensure that I was able to collect enough email

data for each team to be able to discern patterns within their discourse as well as make comparisons with other teams. Third, I only included teams in which both members had agreed to participate in the study. Because my research focused on the joint construction of meaning, it was necessary for me to look at both team members' talk.

Participants

Below are brief descriptions of the seven teams who were invited to participate in this study (for more detailed case histories, refer to Appendix A).

Elizabeth and Michele

Elizabeth was a member of the first group of WINGS participants in the fall 2000 semester. The WINGS website was not yet posted online, and the mentor database had not been completed, so she was assigned a mentor rather than choosing one for herself. Michele, her mentor, was a math teacher and department chairperson in a suburban Texas school district. When Elizabeth graduated in December, she found a position teaching first year Algebra. The classes had been overseen by several substitute teachers in the fall semester; the students had learned very little by the time Elizabeth arrived--she had a very challenging first semester. In her first full year, Elizabeth seemed to have many of the classroom issues under control, but still questioned whether teaching was the right profession for her. She found motivating her students to be especially frustrating. In addition to receiving support from her online mentor, this new teacher had an extensive informal support network made up of math teachers at her school.

Laura and Angie

Laura began working with Angie, her mentor, a few weeks before she graduated from the university in Spring 2001. At the time, Angie had taught elementary school art for ten years in both public and private schools. In late June, Laura found a position teaching art at two different elementary schools. For the first four to five months, Laura and Angie messaged each other frequently, needing few reminders to prompt them. At that point, my email account was removed from the team's email list for a few weeks as part of an experiment into how much facilitation was necessary for teams to remain active. This meant that although I did not receive the messages Laura and Angie sent to one another, I was able to access the WINGS email message archives to see if the mentor and protégé continued to maintain active communication without my virtual presence. During that period, the team's exchanges became less frequent and irregular; as a result, my account was returned to their email list. They continued to communicate a few times each month - usually after a prompt from me - until Laura reached the end of her second year in the classroom..

Kim and Matthew

Kim joined the WINGS program as she began her first year as a full-time classroom teacher in fall 2001. She had worked as a permanent substitute teacher for the previous semester and considered herself to be a second year teacher. She taught middle school art in a suburban school district. She had been a non-traditional university student, returning to college after her children were out of elementary school; as a result, she was in her mid-forties when she began teaching. Matthew was a high school English teacher with over twenty years of classroom experience. Kim and Matthew were far more prolific

writers than any of the other mentoring teams in the WINGS program. Whereas most of the other teams in my research exchanged fewer than a hundred messages throughout their entire match, Kim and Matthew exchanged more than two hundred messages in less than four months. They continued to communicate on a regular basis even after the end of Kim's official participation in the program.

Elena and Margaret

Elena selected a mentor halfway through her student teaching in Spring 2002. She chose Margaret, who was a third grade ESL (English as a Second Language) teacher in an "at risk" school in a mid-sized Texas city. Margaret had worked for seven years at the school. Elena had done her student teaching in a third grade bilingual classroom. At the end of the semester, she found a job teaching in a first grade classroom. Elena had grown up in South America and was a native speaker of Spanish. During the late fall, Margaret was diagnosed with a serious illness and was forced to have surgery; they exchanged no more than one or two more messages after that. In the five months they worked together, Elena and Margaret exchanged thirty-four non-administrative messages.

Nancy and Charlotte

Nancy chose a mentor early in the summer of 2002, a short time before she found a position teaching social studies in an affluent middle school. The first mentor she selected was unavailable to work with her. The WINGS mentor database did not have middle school social studies teachers who were available to work with Nancy, and I was unable to find another mentor for her until the end of July. A lengthy series of technical difficulties in creating the team's email list prevented them from communicating until the

beginning of October. Charlotte, Nancy's mentor, had taught several different courses in high school history for seventeen years, and had a total of 30 years experience in the classroom including middle school social studies. Curriculum, usually activities in Nancy's classroom, was the primary focus of most of this team's messages. Nancy was more confident than many of the other protégés and often referred to having a good day before going on to talk about something about the day that had proven problematic.

Heather and Mary

Heather joined WINGS in mid September of her first year as a teacher. She was teaching seventh grade life science at an "at risk" low income middle school in Central Texas. She had completed a postgraduate teacher certification program, but had not yet taken the teacher certification exam, and she was working under emergency certification when she began. She entered the classroom three weeks after the school year had begun. Her mentor, Mary, taught seventh grade science and eighth grade physics and chemistry at a math, science, and technology magnet school in a medium-sized town in east Texas. She had taught for 23 years. Technical difficulties also led to a delayed start for Heather's match. Once they began communicating, Heather tended to write more often than her mentor, and on a number occasions, Mary either did not respond to one of Heather's messages or did not address some of the questions Heather had asked.

Data Collection and Organization

Primary data sources for this study included email messages for six mentoring teams exchanged over periods ranging from five months to two years, application forms

for each team, and member checking interviews. In this section, I describe how I compiled and organized this data.

I began by collecting and organizing teams' email messages. Because many of the messages had already been archived as part of the previous studies, this primarily involved collecting messages that had been exchanged after the pilot projects were carried out. In addition, I spent time identifying and locating a few missing messages as well as several messages that had been archived out of order because of problems with the internal clocks in the users' computers (the time stamp on messages reflected the sender's computer rather than the actual time it was received). In addition, I collected information from the initial application form submitted by each mentor (see Appendix B) as well as the mentor request form submitted by the new teacher (see Appendix C).

The bulk of my efforts prior to analysis was spent organizing the information. These organizational strategies reflected the experiences gained during the preliminary research projects. I placed the email messages in chronological order and reformatted them for easy reference to header information including date and time sent, sender, recipient and subject line. I coded each message by team order (how many total messages has been exchanged prior to the message) and sender order (how many messages the sender had sent previously). This recording system allowed me to track message exchange patterns by date, sender, and whether the message initiated a new discussion or responded to something included in the previous message (see Appendix D for a sample formatted email message and a key to the identifying codes, and see Appendix E for an example of an exchange pattern chart).

Since the previous projects had shown that my introductory and administrative messages had little impact on the teachers' interactions beyond prompting them to communicate with their partners, and my focus was on the talk in which the mentor and protégé exchanged, I created a second set of data where only the teachers' messages were included. I also made note of messages that were sent after a prompt from me. A large majority of the analysis was based on this second set of data because it facilitated greatly the processes of coding and pattern identification.

Data Analysis

My approach to data analysis was informed by grounded theory with the expectation that theory would emerge from a careful consideration of the data (Strauss & Corbin, 1998). My analysis proceeded inductively and utilized techniques of constant comparative method and microanalysis of discourse to interpret my data. As part of the process of constant comparative analysis, I read and re-read the messages, classifying segments of talk by content. As codes accumulated, I grouped them into broader categories and reorganized them when I found data that did not fit into existing categories. I continued to work, and rework, rereading data and refining categories until no new information emerged (Strauss & Corbin, 1998). I used methods from microanalysis of discourse to refine further the categories and analyze the structure of the teachers' talk. It was important to focus on structure because "how something is said is part of what is said" (Hymes 1994, pg 17). This approach permitted me to examine both what teachers said and how they said it. My use of microanalysis of discourse was informed by the work of Neil Mercer (1995), who looks at language as a means of

constructing shared knowledge and engaging in joint activity; and conversation analysts, who look at how talk-in-interaction (everyday talk) is used to create social realities and relationships (Sacks, Schegloff, & Jefferson, 1974). Thus, my analysis did not proceed in two distinct phases. Instead, there was a great deal of overlap between the two stages. This allowed me to use the two approaches to inform each other to a great extent. So while the microanalysis of discourse helped me refine the categories that were emerging from the data during constant comparison, the categories in turn helped me determine which aspects of the discourse I would focus on most closely in my microanalysis.

Analytic Process

Stage 1

I began the analysis process by creating open codes for the topics discussed by the participants in their messages. Working with one team at a time, I created and refined the categories into which the various topics fell. I then constructed a scheme that organized the codes into categories and subcategories. Each time I began work on a new team, I made notes of the codes that needed to be added and categories that needed to be expanded or collapsed to fit the data better. I then used those changes to refine the coding scheme. I decided to leave the messages from Kim and Matthew, the most prolific team, for last in order to use their messages to check and finalize the overall scheme.

As the coding process proceeded, I made the decision to remove one team from the analysis. Below is an explanation for removing them from the analysis

Anne had begun working with her mentor, Jennifer, a few weeks before she began student teaching, but after Anne completed her student teaching semester, she was unable

to find a teaching job. There were two problems with the data from this team that led me to this decision. The first had to do with the quality of the data, and the second relates to the comparability of this team to the others included in the study. The first problem this team's inclusion posed resulted from the fact that a number of the protégé's messages from the second half of the match were missing from the program's online archive and my personal archive. When I asked the teammates if there were any messages that they had exchanged without using the email list, both said that they had not. With the protégé's consent, I asked the mentor to forward me the messages she had saved. She agreed to send me all of the messages, but these did not include any from the protégé during the period in question. The mentor sent messages to their e-mail list regularly that responded to specific questions that her protégé had raised in previous discussions, but there were no messages from the protégé that preceded them. A second reason I decided not to include the team rather than attempt to reconstruct the missing messages from the mentor's responses, was the difference in their situation and those of the others. Whereas most teams had begun working together in the last few weeks of the novice's student teaching, this protégé began working with her mentor a few weeks before she began student teaching. Unfortunately, the protégé was unable to find a classroom teaching position, so all of this team's talk reflected her position as a student teacher. The two discussed issues that were very different from those exchanged by practicing teachers. For example, whereas the other protégés discussed issues of classroom management that had arisen in their classes, this team discussed the protégé's interactions with the cooperating teacher and her approaches to classroom management. In addition, they spent

a good deal of time discussing the pressures Anne felt as she took a class during her student teaching semester. Therefore including this team in category formulation would not have contributed to the further refinement of the categories but would have instead detracted from it.

I completed the first stage in the analysis with an examination of messages from the prolific team. While they structured their messages in unique ways, the topic categories held up to this scrutiny (for a chart of the topic coding scheme I developed, see Appendix F).

Stage 2

Early in the process of constant comparative analysis, it became apparent that storytelling played an important role in the teachers' communications. This led me to begin the second stage by looking at the forms of talk and creating an alternative set of codes focused on forms. Codes that emerged included description story, direct advice, and other related issues. In the refinement process, it became apparent that the use of narrative would become a central issue in the analysis, so in the next step in the analytical process, I worked to clarify a definition of "story" that fit what I was finding and was informative in terms of questions in which I was interested. During this stage, I spent a long time reading and rereading the messages to formulate categories. Form in a message is much more subtle to find than topic, so this was a time-intensive effort.

Having gained close familiarity with the data through the various stages of coding, I decided to return to the data and delineate what I meant by story by examining the patterns that emerged. I marked all of the passages that I considered to be stories and

then worked backward to clarify the attributes that were characteristic of stories, ultimately using the broad working definition of story as "talking about something that happened." I then open-coded the narratives by type. While I was looking at the narrative data, I marked instances of reflection for future reference. As I progressed, I came to realize that the problem of definition arose because there were no clear distinctions between stories and non-stories. As I continued to struggle to find a definition that included the various forms and permutations, I decided to take another approach.

Stage 3

I extracted all of the narratives by printing all of the passages that included at least one of the following three criteria: a description of a specific event or series of events, actor(s), and things that happened in conjunction with that event. I then attempted to sort them into three stacks: "definitely a story," "definitely not a story," and "maybe a story." This did little to clarify the matter; virtually every story ended up in the "maybe" stack. However, in organizing the messages, I began to notice other patterns. Instead of three stacks, I ended up with six categories based on structure. These included: event, event and related observation, event and nonspecific description of subsequent events, non specific description of an event (lacking detail about a time in context in which it occurred), and scenario (a nonspecific description of typical events or activities). To test the descriptive power of these categories, I returned to the transcripts and coded narratives and potential narratives according to this new scheme.

Stage 4

In the next stage, I returned to the instances of reflection I had marked and highlighted all of the passages I considered to evidence reflection. I turned to the literature on narrative and found a definition of spoken conversational narrative that closely mirrored what I was finding in the written discourse. Taking my definitions from Norrick (2000), I treated narratives as two or more coherent narrative elements, or "past tense clauses describing an action or change of state" (pg 28). Using this definition as a foundation, I formulated a model of the types of talk in which the teachers engaged. The model included four basic categories, one of which was reflected narrative. Because I was most interested in reflection, I decided to select representative examples of the first three kinds of talk to show the distinction between and the variability within those categories to concentrate much more fully on reflective narratives and subject these to microanalysis.

To determine the criteria I would use to select narratives to include in the microanalysis, I returned to the literature on reflection. I soon found that although my data did not contradict the three-tiered (or four-tiered, if one counts non-reflective talk) hierarchy models of reflection (Van Manen, 1977; Zeichner & Liston, 1987). They did not directly address the issues emerging from my data. Through further constant comparative analysis, categories related to the purpose of reflection began to emerge. From these, I built the eight-category framework discussed in Chapter Four.

Stage 5

I next selected representative samples of email exchanges that include reflective narratives based on the eight categories and the six teams. That is, I selected a total of

twelve stories that included messages from all six teams and focused on each of the four levels in my model. I later decided to exclude three of the stories that I had originally categorized as reflective because they could also be characterized as another kind of narrative. During microanalysis, I realized that the exchanges in which the narratives were embedded were more complex than could be portrayed by identifying the entire message as one kind of reflection. Thus, I decided to code statement by statement. This allowed me to examine the flow of reflection as the teachers shifted from one kind to another. To gain insight into these patterns I created a chart of each reflective exchange that mapped the transitions from one kind of reflection to another (see Appendix I for an example of a reflective exchange chart).

Stage 6

For the final stage of the analytical process, I returned to a broader view of the data and examined the distribution patterns of each type of narrative and each kind of reflection across the six teams. This afforded me a final opportunity for me to check my hypotheses and provided additional information for me to include in my description of the online mentoring process.

Trustworthiness

I employed the following analytic techniques to help safeguard the trustworthiness of the study. First, to promote dependability, I maintained a log that included both methodological decisions and served as a record of themes and hypotheses emerging during analysis. Second, I carried out an intensive review of the data midway through the study, reading through the analytic log and creating a detailed theoretical

summary of my working hypotheses. I submitted the review to the chairs of my committee for feedback. Their feedback and the resulting refinement, helped strengthen the confirmability and dependability of my analysis and interpretations. In addition, the questions that they asked gave me an idea of how much information needed to be included in the presentation of findings to create the kind of thick description that allows readers to determine the transferability of my conclusions. Fourth, I met with a peer debriefer throughout the project who looked at my data, listened to my hypotheses, and provided feedback that proved very helpful in refining and redirecting the inquiry process. In a similar manner, I met with my committee chairs and another committee member on a regular basis to discuss my methodological decisions and current hypotheses. They served as expert debriefers, and they were often able to suggest analytic techniques to better uncover the pattern in which I was interested. Fifth, I collected an audit trail of my research process that included the email archives, application forms, and all of the notes, memos, and concept maps created during the research process in order to increase the dependability of my study. As I proceeded, I looked for negative cases that pointed out the need to reorganize the coding systems and reconsider hypotheses.

To promote credibility, I sent participants an email messages that included a summary of my conclusions and asked for their feedback in order to test my hypotheses against their own interpretations of the data. Two participants, Elizabeth (Michele's protégé) and Charlotte (Nancy's mentor) were not included, because I was unable to contact them after the initial pilot studies. I believe both had moved; in addition, their email addresses no longer functioned. Thus, although I had permission to use their

messages, I was unable to include them in the member check interviews. I used their feedback to refine my descriptions of the teams' case histories, but none of the participants expressed clear disagreement with my analysis. (For a more detailed description of the member check interviews and the teachers' responses, see Appendix H.)

CHAPTER IV

FINDINGS AND CONCLUSIONS

In this section I look at the findings of this study and the conclusions I have drawn from them. I have organized the findings according to the questions that guided my research. I open with the more general question of how mentoring is enacted in the talk of these teachers. This is a question that required a two part approach to analysis. First I investigated what the teachers said by examining the content of the teachers' email messages, and then I looked at how they communicated by focusing on the organization and structure of their email exchanges. I addressed the question of how reflection is incorporated into the teams' talk by building on the knowledge gained during the initial topic analysis, and then I added a microanalytic layer to increase the depth of my understanding and the richness of the description I offer to the reader.

Findings

I have divided the discussion of the findings into three sections: the first section looks at the topic themes in the teachers' talk, the second examines the structure of the teachers' talk and their use of narrative, and the third section looks at the way teachers dealt with reflection.

Themes in the Teachers' Talk

During the topic analysis, a number of themes emerged from the data. Topics were typically initiated and centered on the needs of the protégés. Classroom management was the most commonly-discussed subject. This was not a surprise because this is a very common pattern among all new teachers. For the most part, these

discussions concentrated on strategies for maintaining order in the classroom. Often closely associated with discussions of classroom management, teachers frequently included descriptions of the way classes or groups of students had acted. Descriptions of interactions with individual students were much less common; supporting existing research suggests that new teachers are usually unable to concentrate on the individual needs of new students until late in their first year in the classroom (Fuller, 1969; Veenman, 1984). In this study, the teachers tended to discuss students' individual needs only when those posed an immediate problem to instruction. However, variation existed between the protégés. For example, Kim, who was beginning her second year in the classroom, was more attuned to individual differences, and often told her mentor stories about her interactions with individual students.

A second common theme was less predicted by the literature, but not particularly surprising considering the context of this program. Four out of the six teams spent a good deal of time discussing teaching assignments. They not only talked about teaching assignments when the novices looked for and found teaching positions, but also returned to the theme later in the year as the new teachers looked forward to more prestigious teaching assignments. For instance, Elizabeth was very enthusiastic when she discovered that she might be assigned to teach a statistics class for the upcoming year, and talked about how much "fun" it was going to be to teach more than just Algebra I all day. Nancy was just as excited when the exact opposite situation happened to her and she was only going to be asked to teach one subject.

Teaching materials and resources was a third common theme for the protégés who had limited access to resources. As an art teacher working with another art teacher, Laura turned to her mentor for ideas in finding materials for activities, organizing them for easy access, and keeping students from wasting limited resources (e.g. paints). Heather dealt with a severe shortage of lab equipment and other materials as a science teacher in a low-income middle school. She turned to Mary to find ways of obtaining materials through grants and other no-cost sources, and she also wrote a great deal about maintaining enough control in her classroom to keep students from breaking those materials that she did have.

Other themes appeared often in the discourse of some of the teams, but did not cross all teams. For the pairs in which mentor and protégé taught exactly the same subject, including Heather-Mary and Laura-Angie, lesson and activity planning was a common theme. Kim and Matthew, who were both married parents in their late forties, discussed the challenges of balancing work, family, and self.

In sum, mentors and protégés discussed a variety of topics -- many, but not all, were similar to those reported in previous mentoring research. The way the mentors and protégés dialogued about these topics is the subject of the next section of this discussion.

Structures in the Teachers' Talk: Narrative

Midway through my analysis of the topics, it became apparent that these teachers devoted a great deal of time to storytelling. Over two-thirds of their messages to each other included storytelling of one sort or another. At the same time, the narratives I saw did not always resemble the formal, structured, and monologic stories traditionally

associated with most written discourse (Baron, 1998b). Instead, they often appeared fragmentary, generalized (i.e. having no specific actors or setting) or scattered seemingly piecemeal over several messages. I was unsure if these quasi-narrative passages were instances of failed stories, or if there was another explanation for the pattern.

As I began the next phase of analysis in which I examined the structure of teams' talk, I began to generate a definition of story or narrative that accounted for what I was seeing in the data. I found that these teachers' talk was an electronic parallel to the conversational narratives associated with spoken storytelling (Norrick, 2000). Norrick's (2000) understanding of conversational narrative is based on a definition of narrative as a coherent set of "past tense clause[s] describing an action or change of state" (pg. 28).

Norrick (2000) argued that these narratives emerge from the stories told as part of everyday talk (as opposed to the more formal rhetoric of oratory or traditional written stories). As with all everyday talk, these narratives are often imperfect or incomplete, replete with interruptions, corrections, repetitions, and disfluencies (Norrick, 2000). Nonetheless, listeners who share a common understanding with the teller are able to read between the lines and distill coherent meaning from what has been said (Norrick, 2000; Polanyi, 1985). Also, like everyday talk, conversational storytelling involves strategy on the part of the teller. That is, the person relating the narrative does so with a purpose in mind (Norrick, 2000; Polanyi, 1985).

These features - imperfect or incomplete form, distilled meaning from partial content, and purposive nature - closely paralleled the stories told in the online discourse of the mentors and protégés in this study. One of the most useful concepts arising in the

discussion of conversational narratives proved to be the description of a diffuse story that "bubble[s] up and recede[s] back into turn-by-turn talk" (Norrick 2000, pg. 168). I based my analysis of these teachers' talk on the conversational narratives arising in the everyday telling of stories. For ease of reading, I use the term "story" interchangeably with "conversational narrative" in this discussion.

Functions of Narratives

In these online interactions, the mentors and protégés used conversational narratives that served four different functions: relating, venting, illustrating, and reflecting.

Relating Narratives

The teachers used relating narratives as a foundation for all of the other kinds of talk. They can be divided into two subcategories, phatic and grounding. The first are phatic narratives: stories that serve to build and cement the interpersonal relationship between protégé and mentor. Phatic communication, both in the form of a narrative and in greetings, closings, and other "social" talk, serves an important function in discourse although they may at first appear to be idle chatter. The term *phatic*, a term based on Malinowski's (1923) concept of *phatic communion*, refers to that aspect of discourse that allows us to "read between the lines" to interpret meaning. This kind of talk is often used to manage interpersonal relationships and help discussants not only develop shared assumptions, but to know that they share those assumptions - they create a "mutual cognitive environment" (Zegarac & Clark, 1999, pg. 325). Among the WINGS mentors

and protégés, phatic narratives usually involved a single message, often used as conversation starters to open messages that initiated a new conversation.

In the first example below, Michele's phatic narrative makes up almost the entire message. In it, the mentor sends a message to her protégé after a month-long pause in communication and uses a story to open a conversation and encourage a response.

(Note than in the interest of clarity, I have excerpted the text in the messages that related to the discussion. Where I have removed unrelated passages, I have used ellipses to indicate the missing of the messages. All other aspects of the messages, including spelling remain in their original format. I have retained the dates so that readers can get an idea of the pace of turn-taking in the exchanges.)

Thu, 4 Apr 2002 - Michele [mentor]

How was Spring Break? We made a quick trip down to Austin on Saturday morning March 16th. We had a great time although the weather was not fantastic. We got to go to the Texas History Museum on Sunday. It is very nice. We also toured the capitol building. My daughter is 16 and she has never seen it. I'm such a bad mom. She really enjoyed it much more that I expected.

Type to you later.

She uses this personal story as a conversation starter. Not having a previous recent message to respond to, Michele relates a story that Elizabeth might find interesting.

The second example comes from Kim and Matthew and shows how a phatic narrative can be used to open a message. Unlike Michele, Kim is not using the narrative to re-start a conversation after a lengthy pause in communication. Instead, it serves as a

lead in to the expressed purpose of the message - touching base and thereby maintaining ongoing contact with her mentor.

Tue, 23 Oct 2001 - Kim [protégé]

Today was a rather good day, I am trying to teach my kids to draw. We are beginning the dreaded blind contour technique this week, which gives way to the dreaded shading project next week! Hope all is well, I just wanted to say hello. The volunteer coordinator has located two possible volunteers to hang my student's art. Oh happy day!

And on an artistic note, I painted yesterday. I broke out the oils and put color on three canvas panels that will be part of a grouping in my dining room. The color on canvas is in the style of Mark Rothko. Very minimalist, just color on canvas. I am so excited. Will keep you posted.

The phatic narratives in the representative examples above illustrate how this kind of language in general and this kind of storytelling in particular played an important, yet subtle, role in the talk of these teachers. By sharing personal stories, they were able to get to know each other better in this electronic context that does not offer the visual and nonverbal cues that are available in a face-to-face context.

The second kind of relating narrative grounds the communication between mentor and protégé. The concept of grounding comes from Clark and Brennan's (Clark & Brennan, 1991) discussion of the hierarchy of communicative processes. They argued that by reaffirming common experiences, people are able to build a shared set of knowledge, but without some knowledge that they can assume the other person also

knows, people "cannot even begin to coordinate on content without assuming a vast amount of shared information" (Clark & Brennan, 1991, pg. 127). Thus, the teachers used grounding narratives to create or reinforce the shared understanding between sender and recipient by drawing on experiences that they had in common. Thus, grounding narratives allow writer and reader to spend less time and energy on message production, thereby promoting faster and easier exchanges of messages as well as less chance for misinterpretation.

In the excerpt below, Angie discovers that her protégé, Laura, had substitute taught for one day in the classroom next door to hers the year before.

Fri, 08 Jun 2001 - Laura [Protege]

I subbed at Jackson one day- I was there for the library book parade. What a weird coincidence because "the other art teacher" sent some kids over to borrow some ceramic clay while I was there.

Fri, 8 Jun 2001 Angie [Mentor]

So close yet we did not meet. I was the one who sent them to get the clay. There teacher sent them to me and all I had was unopened bags and I remembered seeing one in Pitman's room. I was right there on the portable steps passing out the awards for the book parade. ...

This exchange took place in early June when Laura and Angie were still getting to know one another – they had only communicated with each other for a few weeks. They shared common experiences through telling grounding stories frequently during this time period,

and this allowed them to tell stories later on with little context or explanation and still have them be understood.

The second example of a grounding narrative also demonstrates how stories become diffuse. After her initial presentation of the story, the teammates made periodic references to the car, and Kim shared occasional narrative updates to the story for several months.

Fri, 11 Jan – Kim [protégé]

... I got my Beetle, it's a red one. He put the key in a Barbie Beetle and had me take it outside like it was remote control and it was sitting in the driveway with a big green bow on the hood! What a sweetheart. It is the BEST car in the WHOLE world. It is a joy to drive and even sit in traffic in. I have my vintage music that I listen to while I'm driving it and it's like a time machine. Because of the way the windows are designed and the sun roof, you have the sense of being in a bubble. It runs so smoothly that you can't even feel the motor running. It alters my mood just to sit in the car. Even if it isn't possible to buy one you should go test drive one. Let your wife test drive too, maybe she'll fall in love with them too! You really MUST go drive one especially if you're going to be buying a new car soon. They are a blast to drive. Even my husband who isn't really a "bug" person, loves driving my car. My daughter wants one but doesn't want to be a "copy cat" so she's probably going to get a Jetta. My son who wanted no part of it before has even asked when I'm going to teach him to drive it!...

Mon, 14 Jan 2002 Matthew {mentor}

... We are looking at the Honda Civic EX...I got Ginny to get a sunroof so I feel I
am ok. ...

Tue, 15 Jan 2002 Matthew [mentor]

... Still envious about the red VW...mine will be yellow and I like the ideas of
putting a seasonal flower in the vase. Bluebonnets are coming!

Wed, 15 Jan 2002 – Kim [protégé]

News about the beetle...I have been trying to decide on a name for "her". I am
torn between "Lady" a term of endearment from my daughter and also "Lady"
bug!! or Roxanne from the song by Police that brings back special memories for
my husband and I or Roxi for short, to alter Jimi Hendrix's "Foxy Lady" so she
would be "Roxi Lady". I'm more inclined to name her the last choice. I'm even
going to look into the possibility of having personalized plates for her! And yes, I
am going to do seasonal flowers. So February will be a red rose, March a
bluebonnet, April spring flower and on and on! It is just the coolest car I've ever
owned or driven. I don't think I'll ever want another car!

The passage below marks the transition to a diffuse narrative.

Fri, 25 Jan 2002 – Kim [protégé]

... Have you guys gotten your new car yet? You still need to go to the VW dealer
and just test drive a beetle! It's fun! ...

Throughout the year, Kim and Matthew periodically referred back to the car and continued to send messages frequently, but the car story became a topic they referred to only occasionally.

Although the representative examples I include here are very different in terms of length and structure, both point out how important creating common ground is to building shared knowledge. Through sharing these stories, teachers were better able to gauge what they would be able to leave out in future messages. This strategy was very beneficial to communication because it allowed teachers to spend less of their limited time writing messages while mediating the disadvantage of not sharing experiences on a daily basis. Some teams shared very little grounding narrative in this context, so although this strategy offered the possibility of creating shared understanding, they did not always choose to employ it. The teams that did not do so were forced to write messages with more detail and level of completeness in order to ensure the partners' comprehension.

Venting Narratives

Venting is the focus of the second category of narrative. I speak of venting in the usual sense of the word: the sender shares a narrative about an event or circumstance that she feels strongly about but afterward does not continue to discuss it or ask for feedback. (As the reader will see in a later section of this discussion, if the sender continues to talk about the issue, the function of the narrative is not venting, but reflection.) While these teachers occasionally responded to or commented on their partners' venting narratives, they did not use them as springboards for reflection.

Katie writes the first example of a venting narrative after a difficult day at school. The e-mail message excerpted below clearly conveys her obvious frustration.

Wed, 20 Nov 2002 - Nancy [protege]

I got so overwhelmed today with behavior. It mounted on top of each other. Fifth period I escorted a special ed kid to one of his teachers. I informed her that he was a distraction to the rest of the class, came unprepared everyday and that I would not want him back until he has met with the counselor and the AP and with a parent conference scheduled. The next period we had a debate between Patriots and Loyalists and it BOMBED! My other class did so well, and I was so discouraged and I had one of my problem students act out again and I escorted him to the counselor, wrote a referral and he got suspended and he is now out of my class (thank God!).

It was a student that I have busted my ass trying to get to and he refused to cooperate (and apparently he like me)....

After telling the story, Nancy does not follow up, and Charlotte does not respond to it. Instead of leading to further discussion, this venting narrative offered the new teacher an opportunity to get the frustration "off her chest" by talking about the day and how it made her feel. However, the final sentence in the narrative provides a hint of reflection as she reveals puzzlement about why the student acted as he did if he liked her. Nancy's story points out one aspect of the functions of narratives that I have not mentioned until now. There is often a very fine line between the different kinds of narratives, and sometimes

the interpretation depends on a shade of meaning in a word or phrase. This leaves room for misinterpretation by the recipient.

In a second example of venting, Kim is also feeling frustrated at school, but this time, the mentor responds to his protégé's message.

Wed, 24 Apr 2002 - Kim [protégé]

... This week has been awful. Acutally, I think it's just me. I have absolutely no patience and zero tolerance for any infractions. I let an AP know today that if she hears rumors about me they're true! Today as I was giving a brief refresher on Rousseau and my expectations for the current project, some students (who don't get it anyway) were talking while I was trying to give them the information they needed to be more successful. I just pulled the cord on the overhead screen and let it go, the screen went up and made such a noise that the teacher next door came over to make sure I was ok! I felt badly that I interrupted her class, although she has had similar experiences in her room. I walked back to my desk and told them since what I had to say didn't interest them they were on their own with the project. The room was dead quiet for the next half hour. No sooner than the bell rang did I have students coming in asking me what happened. One of my lovelies said "Hey Mrs. Stan I heard you went crazy!" I told her "No, that I had not, I was just making a point and I had had it up to my eyeballs with rude students."...

Thu, 25 Apr 2002 - Matthew [mentor]

I threw a stapler across the room yesterday. The karma is wretched. We all suffer through these weeks.

Thu, 25 Apr 2002 Kim [protégé]

Thanks for sharing!! So it's not just me!

Kim and Matthew's exchange highlights several important issues related to narrative. First, Kim was the most expressive storyteller among the teachers in this group. Her style was lengthy and very detailed in comparison to Nancy's message as we saw earlier, but the style had little impact on the function of the story. Second, venting narratives - when interpreted as venting narratives - sometimes lead to responses, but they are not contemplative. Matthew's response simply showed his empathy. The third issue this exchange raises is important to keep in mind throughout any discussion of teacher storytelling. Experienced teachers, even master teachers like Matthew, who has been recognized as an outstanding teacher, sometimes tell stories or make suggestions that are far from pedagogically commendable. They are sharing personal practical knowledge that is often imperfect and telling stories that show their fallibility. Email provides a safe forum that allows them, as well as their protégés, to show their weaknesses as well as their strengths should they choose to do so.

Illustrative Narratives

Teachers employed a third kind of narrative to illustrate a point or provide a concrete example of a concept. These *illustrative narratives* are not themselves reflective in nature - they explain or clarify something rather than pose questions or offer up issues for reflection - but they are sometimes embedded in a larger reflective discussion. When embedded, they are distinguishable from the reflective narrative in that the illustrative

story does not address the subject under consideration. With one or two exceptions, mentors told all of the illustrative narratives in this study.

The example below comes from a discussion Elizabeth and Michele, her mentor, were having about ways she might solve the problem of students being tardy to class. Responding to a question from Elizabeth, Michele uses the illustrative narrative to explain her technique for starting classes as soon as the tardy bell rings.

Wed, 25 Apr 2001 - Michele [mentor]

We complete a warm-up at the beginning of class. Picture this: The bell rings and I close and lock the door. The tardy people wait until I come over and let them in. I greet everyone in the room, get them going on the warm-up and hand out the coupons while I am talking. I have them presorted by rows or groups so that it only takes about 1 minute to hand them out. Then I walk over and let the tardy people in. They have to sign in when they are late. I reduce their points by 1/2 as they are signing in. You're done.

The benefits of a reward system are worth the time it takes to implement. In my Math Lab (TAAS Remediation Class, I collect the points after the students receive 4 coupons. I count it as a Class Participation grade. When I taught Algebra II, the coupons could be stapled point for point to an assignment. If a student made a 70 on an assignment and stapled 30 points to it, then that student made a 100. If a student made a 70 on a test they could staple 30 points to it and make an 85. The points counted 2 for 1 on test. Generally the students accumulated 150 points a six weeks, with a maximum of 30 points (1/2 of 60) to

be added to tests. However, in Algebra II, the students totally forfeited their points when they were tardy. ...

As is frequently the case when mentors share illustrative narratives, Michele's story provides her protégé an indirect suggestion about how to solve a problem. Strong and Baron (2004) reported a similar pattern among face to face mentors who went to great efforts to avoid giving direct advice and instead provided indirect suggestions.

Reflective Narratives

A fourth way in which the mentoring teams use stories is reflective narrative. As the name suggests reflective narratives serve to initiate reflection. Their content and form do not differ significantly from other kinds of narratives; the factor that determines whether a story is reflective or not is its association with other reflective discourse. Before beginning a discussion of the fourth kind of narratives, I must clarify for the reader my understanding of the terms I use and explain why I have chosen to use them in this way.

Definitions

First is the question of reflection. The meaning of reflection has long been a subject of debate, and it has become famous for being a "blurry" concept among the many different groups of researchers that use the term to mean a myriad of different things (Roskos et al., 2001). For this study, I followed Dewey's (1933) treatment of reflection as a consideration of knowledge and the grounds on which it is supported, and Schon's (1983; 1987) notion of reflection as a process of revisiting previous experience and making knowledge explicit. My intention was to find a definition broad enough to

capture what was going on in my data. In the way that conversational narratives include seemingly imperfect versions of stories, my experience with the data led me to suspect that there might also be seemingly imperfect (i.e. very shallow) instances of reflection that a narrow definition might obscure. So, informed by Dewey and Schon, I defined reflection broadly as the consideration of a past event and reviewed my data for instances of this. As I reviewed the data, it was clear that this definition could be refined to fit this data set. Both mentors' and protégés' reflection focused primarily on the problems the new teachers encountered in their classrooms. Instances of reflection fell into eight categories according to which aspect of the problem the teacher foregrounded. In the eight categories, there were instances of reflection in which the teacher focused on:

- *solution* - how to solve the immediate problem described by the protégé
- *strategy* - how to approach problems like the one described by the protégé
- *proximal cause* - what caused this particular problem or led up to this event
- *underlying cause* - what causes these kinds of problems
- *consequences* - what is likely to happen as a result of this situation
- *implications* - what these situations usually lead to
- *interpretation* - what he or she thinks this issue means
- *ethics* - how this issue fits into his or her ethical or moral framework

Because the identification of narrative as reflective is dependent upon the reflective discourse with which it is associated, I need to distinguish some of the terms I use in describing the different kinds of reflective talk. These include:

- *reflective narrative* - a narrative distinguished by its association with reflective talk
- *reflective statement* - a sentence that manifests consideration of a problem, event or issue and its solutions, causes and effects, or meaning
- *reflective bid* - initiated by a reflective narrative and associated reflective statement; as the name suggests, reflective bids invite reflection or feedback from the teammate
- *reflective uptake* - a response in which a reflective statement is related to the preceding reflective bid
- *reflective exchange* - includes the reflective bid and any other associated bids or updates

As in everyday spoken conversations, the structure of these teachers' discourse was highly complex and fluid in nature. The reflective narratives included in their messages mirrored that complexity, coming in the same wide variety of shapes and sizes as the other three types of narratives. The reflective exchanges initiated by the reflective narratives mirrored the fluidity of conversations. The fundamental pattern upon which most reflective exchanges were based included a reflective bid by the protégé, who would tell a story and then step back to explore some of its aspects. Then, the mentor would pick up on the reflection and explored the matter further. The chart below illustrates the reflective exchange pattern in its simplest, most fundamental, form.

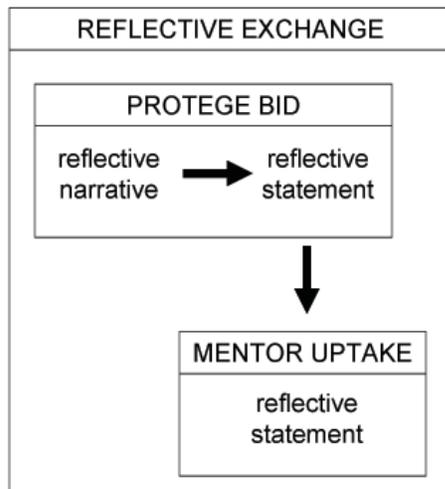


Figure 1. A reflective exchange in its simplest form.

However, like the stories in conversational narratives that teachers modify to suit their purposes, reflective exchanges were rarely as simple as this chart might seem to suggest. Instead, they used the key elements of reflective bids and reflective uptakes to engage in a moment-to-moment (statement-to-statement) form of reflection, shifting rapidly back and forth between the various kinds of reflection to consider different aspects of a problem. In the next section, I provide the reader nine examples of reflective exchanges whose structures run the gamut from relatively simple to highly complex. I examine each example and highlight the different ways teachers adapt narratives and the reflective exchanges in which they are embedded in order to show how they use them to explore the issues of teaching.

Moment-to-Moment Reflection

Because my intention is to look at the complex nature of the teachers' online discourse, I have chosen to organize the presentation and discussion of the reflective exchanges into holistic excerpts that include entire exchanges rather than extract

individual statements. Thus, while I have identified eight categories of reflection, I do not discuss them a category at a time, but instead attempt to provide a view of the reflective statements in context and thus, the categories of reflection as they arise in the discourse.

Example 1: A Typical Reflective Exchange

The first example of a reflective exchange follows the typical reflective bid - reflective uptake pattern often seen in these teachers' talk. Elena initiates a discussion of discipline by telling a generalized story about her students behaving badly and not being motivated to perform academically.

Thu, 10 Oct 2002 - Elena [protégé]

... I always remember your words about discipline and discipline. Boy, that is the hardest part, Some kids mind, but other gosh, I don't know how they do at home, because they are terrible, but you see academically, they can perform better, they just don't want. Any ideas on how I can motivate them, besides punishments, time outs or thinks like that. Positive encouragement, so they can work as they should and can.

Here. Elena touches on the question of cause when she attributes their lack of achievement to their unwillingness to learn, but then shifts back immediately to consider what she likely sees as her most pressing concern: finding ways to get her students to meet her academic expectations (solution). Margaret begins by telling about her own experiences with unmotivated children and the frustration she feels when trying to teach them.

Thu, 17 Oct 2002 - Margaret [mentor]

Ways to motivate children who can but don't.....that is exactly the thing I'm going thru this year. I've got several kids who have no problems, more that can but don't and the most just can't because of language problems. The ones that have the potential and don't are the ones that frustrate me the most. She then tells about the lesson she learned from one case in which one of her students suddenly became less academically successful.

First, make sure nothing is going on at home or in their personal lives that is keeping them from succeeding because you can't deal with school issues if they cant deal with home issues. For example, I have a little girl who made all A's last year and is very smart, but she isn't doing homework and her class work is on the down hill side. I did a little digging and found out that her brother that I had last year beat up his mom this past weekend, and has been hitting on and threatening this little girl. My girl had to help pull her brother off her mom. In the passage above, Margaret shifted Elena's discussion of a solution to an examination of the cause behind the girl's behavior at school. She then shifts to consider the probable consequences of the situation, and ultimately takes it back to the consideration of Elena's question (solution).

So, in this case, she's not going to get better until things at home calm down. All you can do is lots of TLC and understanding on her work. Elena and Margaret's reflective exchange shows the usual pattern of protégé reflective bid followed by mentor reflective uptake, but it also highlights the complexity of the reflection included. We see that Margaret took Elena's story and examined different

dimensions of the issue rather than the straightforward problem-solving in which Elena appeared to be interested. This is a fluid process of moment-to-moment reflection as also evidenced in the rest of the examples.

Example 2: A Mentor-Redirected Reflective Exchange

In the second example, Nancy engages in a similar dialogue with Charlotte about students who are failing to meet her academic and behavioral expectations. In this exchange, the new teacher is frustrated by her students' performance in a class debate. She begins by describing her discussion-centered activity and then tells her mentor that students are having problems dealing with this non-traditional approach to instruction.

Wed, 12 Feb 2003 - Nancy [protégé]

... We have been talking about the Constituion and analyzing principles of the Constitution. I love this part of the curriculum, but my students have to get it beat into them. we have been discussing, analyzing, debating, etc and they still don't "get it" unless I am at the front of the room and it is skill and drill.

She continues with a look at the reading difficulties of this group of students.

And today, we were analyzing primary sources and they CAN'T read! It was terrible. It was supposed to be a warm up activity, but it ended up being a lesson. It took them 40 minutes (and me holding their hand) for them to answer 4 questions.

I know what we are going to be working on.

This last sentence serves as a reflective statement, but a very shallow one on which she does not elaborate. She shows that she is thinking about the problem, and hints that she

has an idea about how to address it (solution). She does not, however, move toward any possibilities for alternate plans. Her mentor, Charlotte, responds.

Tue, 18 Feb 2003 - Charlotte [mentor]

... I agree that students who cannot read are a real problem. There is no easy solution to this. If your school has a reading specialist, you might want to contact him/her for some suggestions. Some of your students might need to be referred.

Still situated in a problem-solving mode, Charlotte shifts the focus of reflection from Nancy's specific problem to a more general strategy for dealing with students who have reading difficulties. While Charlotte encourages her protégé to think about her teaching in a more abstract manner, she does not make use of an opportunity to move to an interpretation of the issue. This example highlights two important points. First, experienced teachers are able to redirect the focus of reflection via the reflective uptake. Second, mentors' interpretations come from the perspective of expert practitioner, but this does not mean that the things they advocate are sound practices.

Example 3: A Highly Grounded Reflective Exchange

Teachers who engage in frequent exchanges of relational narratives with their partners are able to reflect together with surprisingly little detail in the narratives. Their shared understanding allows them to fill in the missing pieces of the story and make it coherent. Laura and Angie are one such team. By the time of the following message, mentor and protégé have known each other for six months and have exchanged over fifty previous messages. Moreover, their email messages are often characterized by much phatic and grounding dialogue. Laura opens the brief discussion when she mentions that

some of her students have been sent to the district's alternative campus (presumably for problem behavior).

Fri, 16 Nov 2001 - Laura [protégé]

Printing with the 5th graders turned out to be OK. I had a few less in each class because of absences and some kids getting sent over to Spencer.

I'm not sure what a kid does to get sent to that alternative campus, and I don't know what happens while they're over at Spencer.

Here, Laura takes a step back to reflect on the alternative school and its impact on disruptive students' behavior (interpretation).

The kids don't necessarily behave better after they get back-- but it definitely seems more peaceful while they're gone.

Her mentor, Angie, takes up Laura's reflective bid.

Sat, 17 Nov 2001 - Angie [mentor]

I had a few who were sent to Spencer many times and it made no difference. It seems that would have told the district something.

Angie's response is very brief, but because she and Laura already have a well grounded understanding of each other's context, and they have both had the experience of their students being sent to the alternative campus, her one reflective sentence conveys a great deal of meaning. Thus, in two brief statements, she is able to communicate her questioning of the effectiveness of the alternative school (interpretation). This affirms Laura's position. Further, she broadens the reflection beyond the results of sending

students to the alternative school, questioning the district's understanding, or even awareness of the problem (ethics).

Example 4: A three-message exchange with independent reflection.

Heather is the source of the next example. Like Kim, Heather has an effusive writing style, and she includes a great deal of detail in her descriptions. In this series of three messages, Heather faces a problem similar to Nancy's – her students do not perform well during class reading assignments – but she communicates this problem in a very different way. In contrast to Nancy's single-topic message, Heather presents a reflective narrative that is part of a much larger discussion of the multiple obstacles she faces. Whereas Nancy began telling her story in the second sentence of the message, Heather opens the message with a detailed contextualization of her situation and perspective.

Tue, 14 Jan 2003 - Heather [protégé]

It is the second half of the year, and I still feel lost. I have not gained control of my students. They do not take me seriously. I do not have a mentor on campus. I should be getting a new one. It looks like they are assigning me the actually coordinator of recruitment and retention, but he hasn't contacted me. I am glad you are here for me. I just have had so much going on, I have not faithfully been communicating with you. Partly, I feel so alone and like a failure. I don't know how to say this in a way that can make you feel like you can give me advice. I don't know what to ask.

Heather's brief anecdote about an encounter with an assistant principal provides Mary with additional information about her point of view. Heather does this in the form of a venting narrative.

My principal is supportive, but the assistant principal over the 7th graders does not always get along with me. I was written up for being late again, and she told me this in front of my students. I had to deal with this all day because one of my students heard. She asked if I was going to get fired or quit, etc. I didn't need to deal with that. I am so frustrated. I talked with my principal and that assistant principal, so I think that issue is taken care of now.

When Heather ends her venting narrative by saying that the issue is taken care of, it serves as a signal indicating to the mentor that this is not an issue with which she needs specific help. Considering the length of the background information, the reflective narrative about reading is in fact quite brief.

We are talking about ENERGY right now. I tried to get them to read aloud. That doesn't work.

In the reflective statement that follows, she thinks about why that approach does not work (cause), and she considers what might be a more productive approach (solution).

Some really want to do that, but I can't keep the rest of the class quiet. Others do now care to pay attention. I am thinking of skipping reading all together and just give them notes.

At this point, Heather shifts the focus of her reflection to a more general consideration of her teaching methods and the limitations her students' behavior places on what and how she can teach (interpretation).

I do not trust my students with labs and controlling their own actions. Our class seems so boring. I want to have a fun class, but I just do not trust them. Some of my classes are sooooo big.

I don't know.....I search and search for fun activities, but we do not have supplies or the manpower or something. I feel like I waste time searching on the internet.

I am really tired. I will continuer this later

Heather seems to be desperately searching for ideas. She is reflecting back on her teaching and trying to think of new ways to engage students (solution). However, she struggles to land on any ideas that seem workable, and she ends the message before she has time to settle on a potential solution. Mary responds with the illustrative.

Tue, 14 Jan 2003 - Mary [mentor]

... Even this year after 25 years of teaching I tried something new. I had the worst class I've ever experienced. They were so immature and self-centered they didn't think the rules applied to them. They didn't think I meant them when I asked the class to stop talking. So, I took away their right to talk and they had to earn it back. I told them that the state requires all students to have the opportunity to learn. They may not keep me from teaching or keep others from listening and learning. It is everyone's right to get an education, it is not their right to casually talk in class and disturb others. From the moment they entered the room they

could not talk (or make distracting noises). They had to write down questions or answers. No talking period.

In the next section of the story she presents some very specific instructions about how to use this strategy.

This is how they earned back their right to speak. I told them they had to earn 100 points as a class before they could talk again. Everyday I automatically gave them 20 points at the beginning of class. A point was taken away every time someone talked. I just had a big piece of paper with a big 20 written at the top (or use your whiteboard) and I'd cross out the 20 and write 19. You don't even have to say anything to the person who talks just keep right on teaching. If they keep talking cross out 19 and write 18, etc. Pretty soon the rest of the kids will be getting that person to be quiet. I also had a graph so they could see how many points they had earned up until that day. The first time we did it, it took about 2 weeks for them to earn 100 points (it could have been 5 days if they would behave) . After they earn their right to speak, you stop playing the game until they get out of control and then bring the game back again. I only had to use it 2 or 3 times and now they are one of my favorite classes.

At the end of the story, Mary stops for a moment to consider some of the potential implications of using this approach and the reasons it worked for her. This might encourage Heather to think about how it might apply to her situation.

You may want to try it only on your worst class to start with. And then word will travel! Or maybe you have too large of a school for that to work and you would

need to use it for more than one class. The kids love to play games and didn't seem to be all that upset about not being able to talk. I think it made them realize just how noisy they had been and how quiet it could be.

In closing the message, Mary is even more explicit in encouraging Heather to think about how she might adapt the strategy to fit her own situation.

Sorry to ramble. Hope this will help or maybe you can change it up to work for you. Just be firm, make sure the kids know what is expected of them and the consequences, and then follow through, even if you feel like the meanest teacher alive.

Heather initiates a new exchange on the same subject five days later. This time, her narrative is more specific about what is happening in her class during time that she has allotted for reading activity.

Sun, 19 Jan 2003 - Heather [protégé]

... Reading does not work with my students. Reading silently does not work at all.

As she writes, she stops periodically to consider why the activity is unsuccessful (proximal cause).

Some students like when we read aloud, but the whole class does not benefit.

There is not complete participation. Some students do not listen, pay attention, or attempt to even follow along.

Next she weighs the alternative of teacher-led reading and whether this is the best solution to the problem.

If I read to them, that is sometimes more effective, but not necessarily. There is still lots of student talking, wondering eyes, closed books, heads on desks, etc. I am not to the point that I can wonder around the room effectively and read at the same time. After reading, I pause and stress important sentences. When the students read, it is harder to stress the words that I feel are important. It gets done, but not as effectively.

While she reflects on her own teaching practice, she stops short of an in-depth examination about the role she should take as a teacher in the classroom. She is thinking in terms of solving the problem (solution). Heather next shifts toward a consideration of the cause of her students' problems.

My students do not want to take a book home. Family life for them does not permit them to all do homework. Some can, but do not wish to. Others probably do not have a positive home environment to do homework.

In thinking about the cause of the students' problems, she thinks in terms of her understanding of the lives of the low-income students at her school (underlying cause). In another shift, Heather returns to her immediate problem (solution).

I have a hard time getting students to take long notes. I am thinking of trying to skip the reading of the text. Plan on doing hands on activities if I can find any, and try to just get them to learn a definition and a few concepts through each lab, each day.

Here she is reflecting on what she can do differently in her teaching (solution). In the passage that follows, Heather continues to reflect.

This may be a better way to teach these students. Little pieces at a time. They are very bright students especially in street smarts. So, short notes inside the labs may work better. Also, my warm-ups will stress the previous ideas or topics that we discussed or previous lessons that they had difficulty with....

This time she considers both the cause of the problem and how that should inform her approach (interpretation). The results are some concrete ideas that she plans to try in her class. She closes her message with an explicit bid for feedback from Mary, but receives no response.

...Any advice????

One important contribution this example makes to this discussion is the way it highlights the fluidity of both narrative and reflection. Just as she changes rapidly from topic to topic in her first message, Heather moves from reflection type to reflection type in the second message. Within a matter of a few paragraphs, Heather considers immediate causes, potential solutions, and societal dimensions of the problems she has encountered. She is more adept at independent reflection than many of her peers, and abstracts broader issues from her personal experience. This is fortunate. Although Heather closes her message with an invitation for feedback, Mary's message does not arrive until two weeks later (after the Thanksgiving break), when she initiates a new discussion instead of responding to the issues Heather raised in this message. As this set of exchanges illustrates, the online discourse in which these teachers engage is far from

perfect. It is difficult to say whether Heather was already inclined to reflect independently or whether she has learned to do so in response to the lack of interaction. (see Appendix I for a chart of this complex exchange).

Example 5: An Adapted Reflective Exchange

An exchange between Elizabeth and Michele shows how some participants can manipulate the structure of the message to suit their goals or purposes. Whereas most teams tell a story and follow up with reflective statement, Elizabeth reverses the order and introduces her narrative with a reflective statement. The conversation begins in response to a reminder message, and she opens with an explanation of the delay.

Mon, 29 Oct 2001 - Elizabeth [protégé]

I have not been writing as much because I honestly don't know where to begin asking for advice.

In the next statement, she is assuming that Michele, who has also taught first-year Algebra will understand what kind of problems she is referring to.

I think a lot of my problems (at least what I can gather from other teachers I ask) is that my kids lack motivation because I have the "low-end" freshmen (I teach only Algebra I this year).

Like Heather, Elizabeth's exploration into the question of why her students are unmotivated leads directly to grouping them into a single stereotype (underlying cause). Unlike Heather, Elizabeth appears to have picked up that stereotype from her colleagues at school. Her next shift is to a description of her own attempts to solve the problem.

I have tried doing a bunch of things to pad their grades, but all of my efforts rely on the assumption that they want to learn and that they want to pass, neither of which seems to be the case for a good deal of them.

At the same time, she begins to express her emotional reaction to the situation and how she has tried to deal with them.

I am just so frustrated that I don't know how to begin thinking about how to make things different.

I have tried focusing on the ones who are trying, and I think that I am getting better at it. It's just that I look at the grades they are making and take home their tests to grade...I don't even want to look at any of it because it makes me sick to my stomach.

In the final section of the message, Elizabeth considers her values as a teacher and in closing invites Michele to join in her reflection (ethics).

I know I could just give them the grades like a lot of the other teachers do, but I don't think I could live with myself. I feel like I am wasting my time...how have you dealt with this for so many years?

As she does on other occasions, Michele reacts to Elizabeth's distress with quick offer of emotional support.

Tue, 30 Oct 2001- Michele [mentor]

Ohhhhhhhhhh...I wish I were there to give you a big hug.

She follows with an illustrative story that describes her experiences of teaching Algebra I.

I have been there. We have 3 teachers teaching groups like you have now. I know how discouraging it can be. How big are your classes? Mine were small, but it was like putting out 17 fires all at once constantly. My kids loved games. I could have them do a regular worksheet of say evaluating problems, then they would choose a card from a deck of cards. If they selected a red 3 they would substitute a neg 3 into the problem. I had everyone do they same problem but select their own card. Then the person with the highest answer won that round. I had to look for ways similar to this to make a contest out of regular stuff. The winner at the end would get a Blow pop or some little something. They will work for food! I had to have some kind of game or activity everyday to keep them interested. I covered them up with all the praise I could muster! My biggest problem was attendance. If I could get them to class I could get something out of them. They would even work for a silly panther paw stamp on the back of their hand.

The illustrative narrative above serves a dual purpose. First, it establishes a sense of empathy; and second, it gives Elizabeth an indirect suggestion about how to solve her problem.

She closes message with a brief reminder to Elizabeth about why her role as a teacher is important (ethics).

Just remember that these kids deserve a good teacher. They are our most at risk students. Someone must help them be truely successful with HIGH expectations. Give them something to be proud of.....but make it fun. ...

Elizabeth's initial message is an especially interesting one. By opening with a reflective statement and then moving to tell the story, she reverses the usual pattern of reflection among these teachers so the reflective narrative in this case does not spark the reflection as much as explain the reason for it. The rest of the message provides the context to help Michele understand the question that closes it. In contrast to Laura and Angie, this team does not spend much time and effort on grounding their communication in shared understanding. This means that although Elizabeth can assume that Michele understands the experience of being an Algebra teacher, the rest of the message needs to be contextualized for her to be able to interpret it. Elizabeth has not gotten to know Michele well enough to be certain that she will be able to read between the lines if some of the details have been omitted, so she has to spend more time writing the message than she would have if they had already determined the things they had in common and build meaning on that foundation.

Example 6: A Failed Reflective Bid

The next example shows how longer reflection does not always lead to deeper reflection. Heather's discussion of an interaction with an abused student shows how a reflective narrative can transition into a venting narrative.

Sun, 24 Nov 2002 - Heather [protégé]

... I did a warm-up and one student wrote something that triggered me to talk to the CIS/social worker. She talked with my student per my request and found out she was being abused. The social work told the student that she had to notify CPS and explained this to the student. The student said she was glad that something was

going to be done because she wanted this to stop. So the social worker told me I made a difference in this child's life. This little 7th grader is so sweet.

Heather stops to consider the wider issue of abuse and what implications this has for her as a teacher (ethics).

This brought this idea of abuse to a reality. I know this goes on, but I can't save the world, and I am having a hard time dealing with all this classroom management stuff and taking care of my students' extra needs like this. Other problems are the ESL student modifications. I have 18. Then I have about 20 special ed. They keep adding them. The paperwork is killing me. I have to call all of the students that are absent second period. Book checks are done every 3 weeks. How do I find time for all of this? I must be doing something wrong.

In the middle of excerpt above, Heather shifts from reflection on her role as teacher, saying that she "can't save the world," to a venting narrative in which she lists the things that make it impossible for her to do this with no further discussion afterward. In this case, instead of using a consideration of her responsibilities and role as teacher to deepen or expand her reflection, Heather moves in the other direction to express her distress over the situation. There is a gap in communication following this message. The timing of the message (close to Thanksgiving) makes it difficult to say whether Mary read this whole message as a venting narrative, did not take the time to respond, or simply forgot to respond in the rush of preparing for the holiday.

Example 7: A Diffuse Reflective Exchange

In stark contrast to this single-message unsuccessful reflective bid there are those stories that spark an ongoing discussion about an issue. Kim and Matthew, the most active team in the study, do this more often than others, but they are not alone in their practice of beginning a discussion with a specific narrative and maintaining the subject in a diffuse story for a long series of messages. By diffuse story, I mean a narrative that partners revisit occasionally as new related events take place or similar issues arise. Kim begins one such conversation about meeting students' individual needs and motivating them to work in her elective art class by telling a very detailed story about an event that occurred in her class.

Fri, 05 Oct 2001 - Kim [protégé]

...Your e-mail came at a good time today, I was rather frustrated by students in my second period class that as a result of learning disabilities, have severe difficulty listening to and following directions, staying on task, finishing projects (on time or at all), keeping up with handouts and keeping a journal.

She then describes to Matthew her first attempt to find a solution to the problem.

In speaking with a counselor I was told, "You just have to keep in mind what their capabilities are." "It would be nice if you had classes where the only students you had are those that wanted to be there." "To expect more from these kids is like beating your head against the wall." (Which I seriously considered, even before I went to visit her!) "Are the journals really necessary?" I just decided that I wasn't getting any support there so I left.

Dissatisfied with the counselor's response, she begins reflecting about how to solve the problem on her own (solution).

I am trying to decide what is the best way to meet their needs but not at the expense of the other 22 students that do try. It is very difficult to oversee these three students and dispense points, supervise projects, aid in problem solving. A special ed tracking teacher came in Wednesday to observe one of the students and offered praise in what I'm doing and my methodology. She also offered some very good suggestions for helping keep those guys on track.

Kim feels validated by the feedback she received from a special education teacher. She goes on to describe the next strategy she adopted and express the frustration she feels because it has not had the desired effect.

I broke the tasks down and gave these students a check list to help them stay focused. Today one of them couldn't even find it after I had punched holes in it and told him to put it in his journal folder. I refuse to put it in there for him!!

She closes the discussion and expresses gratitude for Matthew's support.

Anyway, thanks for the letter of support, sadly before I got it I was questioning why do I even try, why do I want to do this and is this as good as it gets!?! Its difficult to see the forest for the trees some days.

Matthew responds very quickly by abstracting Kim's story into a general consideration of his experience with special needs students.

Fri, 5 Oct 2001 - Matthew [mentor}

It is the problem or the disabled students who I enjoy the most. They teach me a patience I did not think I ever had.

Several years ago I had a muscular dystrophy students who had limited movement and limited speech but she had a beautiful outlook and a smile on her face. My initial reaction was horror as I wondered what I could do to help this student. She taught me the world. When she graduated she asked me to escort her to the stage rather than her father. It was an honor I hold dear in my heart.

He follows with general advice on how to deal with this kind of problem (strategy).

Rejoice in even the handicaps as they build humility in all of us. Do you have a written contract with the students. Sometimes with these basic classes I have their parents sign an acknowledgement of the projects their children are expected to do in the course of each semester.

Kim sends the next message in rapid succession (approximately half an hour after Matthew sent the previous one.) After a brief "thank you", she launches into a story that parallels Matthew's. In it, she describes a very positive relationship she has with another student in her class who has a physical disability.

Fri, 05 Oct 2001 - Kim [protégé]

Thanks again for the encouraging words. In that same class, I do have yet another "special" student, he has CP. He struggles daily to walk, attempt to talk or make his needs known and he works very hard. I love him to pieces. For his limited capabilities he does extremely well, he has the desire to learn and do.

When she returns to the original subject of the three students who do not stay focused in class, Kim's description of the situation is more positive.

Sadly the three that struggle to stay focused, need someone to keep them focused and on task which is not a problem, if it's just the four of us. Trying to keep them focused and on task, pour paint (they pour more than they'll ever use if left to do it on their own and more paint goes down the drain than on any project!) and answering questions of those in need of direction during their creative problem solving process makes me feel pulled in too many directions (Stretch Armstrong is my hero!).

Kim is still frustrated, but she is now able to step back and examine her feelings as arising from a temporary situation which is likely to improve over time (interpretation).

I like to think of myself as a patient person, almost to a fault. But something about eighth graders and immature seventh graders seems to sap my reserves!! I do realize as I grow and become thicker skinned and become more confident things will get easier. As for the three special guys in second period, I'm getting a student aide. She's a former student and will be the perfect extra hands and eyes I need to help keep these guys on track...

Matthew's response validates Kim's feelings. He reframes her experience to the level of all teachers and reflects about the cause of their frustration, which he attributes to the way society treats schooling and the rearing of children (ethics).

Mon, 8 Oct 2001 - Matthew [mentor]

We all feel out of control at one time in the week or another. Consider that we daily have other people's problem in our class for a certain amount of time each day....then they pay us minimum wage to correct their mistakes and instances of poor parental choices. So many kids either lack proper direction or as in the case of many students at our school, they have been indulged and pampered.

In an relatively uncommon move – unless a related new event takes place, most reflective exchanges last no more than two messages – Kim extends Matthew's discussion and tells how his input helped her think in more general terms.

Mon, 08 Oct 2001 - Kim [protégé]

... I enjoy having a fresh perspective to help me see the whole picture. "So many kids either lack proper direction or as in the case of many students at our school, they have been indulged and pampered." This statement describes the students at my school to a "t". They're not held accountable for too much except being "Little darlings!"

This message is especially interesting because it stands as a clear example of a reflective exchange that does not become deeper through extended consideration. Based on Matthew's feedback, Kim thinks from a broader perspective, but continues to think in stereotypical terms (implications). By the end of the message, Kim's reflection has turned to venting. This time she tells the story without following up on it. Perhaps reading her statement as venting, Matthew does not respond to this aspect of their discussion. After this, the narrative becomes diffuse, assuming a highly abbreviated form.

Tue, 09 Oct 2001 - Kim [protégé]

...All's well today - my SpEd students second period are moving right along - at a snail's pace - but they're focused...

Tue, 9 Oct 2001 – Matthew [mentor]

Snail pace is better than no pace...

When there is a change in behavior, Kim sends a more detailed report of the students' progress.

Wed, 10 Oct 2001 – Kim [protégé]

... My "snails" are pulling it up from behind!! They may actually finish the project (a color wheel, which they have had to mix and paint a selected shape 12 times to represent the basic colors on the wheel) and turn it on time. The first time this year!!

Kim attributes the students' progress to her efforts to help them to stay organized and keep focused (solution).

So my diligence is paying off. I also finally got my student aide to help them and that took a load off. Now I can do my art teacher things, answer questions, make my way around the classroom and check on them as I make the rounds without having to be grounded trying to do it all from one place....

The next day brings a final update in the ongoing story. In the end Kim attributes the students' success to her hard work (solution).

Thu, 11 Oct 2001 – Kim [protégé]

Another day on the roller coaster of life! My snail's finished the race!! Diligence pays off. ...

This series of exchanges is not only interesting because of the sheer volume of the discussion, but it also exhibits a number of additional interesting characteristics. Some are common among all of the teams, while others are unique to Kim and Matthew. First, as with the other teams, the reflective exchange is sparked by the protégé's reflection on a problem, and it ends with a return to the solution. Along the way, mentor and protégé make reflective statements that move the focus from one aspect of the issue to another. Most of the time the mentor moves the protégé to take a broader, if not deeper, view of the issue than the single instance in question. The unique aspects of this series of exchanges include Kim's effusive writing style and the rapid pace of the exchanges. This is especially impressive if one considers the fact that the entire episode lasted less than a week.

Example 8: A Second Diffuse Reflective Exchange

Another example of a story that becomes diffuse over time comes from Laura and Angie. This time, the discussion is not as complex, but the theme the teachers present of dealing with the difficult 5th graders lasts quite long as well. Laura begins with a story about the problems she has been having with her 5th grade class not cleaning up their art supplies after they have finished an activity. She turns to Angie, her mentor and a fellow art teacher, for ideas.

Wed, 21 Nov 2001 – Laura [protégé]

Well, 5th grade did make it through block printing, and then we did suminagashi and they made some beautiful marbled papers-- but they were horrible at cleaning up! There were tons of supplies out. Everyone has their own pan of water, two

dishes of ink and two brushes. Plus there was colored chalk and pencils and scissors at each table. I told them for clean up to put their water, the ink dishes and the brushes into a bucket I gave them and stack the pans. Everything went into the buckets- chalk, pencils and all, and kids were making more messes during clean up-

Dealing with hundreds of students a semester, one of the major challenges the two teachers faced was keeping materials organized. Laura is a new teacher who does not have all of the materials a more experienced teacher would have on hand; this makes conserving what she does have more important. Angie, on the other hand, knows the tips and tricks for keeping organized.

Laura next relates a tale of an interaction she had with the students' regular classroom teacher.

So I told their teacher they were horrible during clean-up. she said that was just the way 5th graders are. She told me 4th graders who were good at cleaning up would turn rotten at it next year.

Then she steps back from the narrative to speculate on why the teacher might not be willing to help (cause).

So I guess that means she doesn't want to back me up with any kind of consequences on her end for the crap they pull in my room at the end of class. Maybe she has to use all the consequences she has just to get them to act right for her.

Laura alludes to another discussion with a different teacher, but chooses not to explore the issue or compare the teachers' reactions.

Oh well. At least I have one fifth grade teacher willing to help me with this stuff.

...

She goes on to engage in what seems to be the electronic equivalent of thinking aloud (interpretation).

Now I need to figure out what to do with them. My original idea was to have kids work together to make an underwater scene collage. I don't know if I should make an example of a collage - I don't want to see a bunch of collages that look like mine! But I think if they don't see an interesting finished product, they won't want to cut their prints....

This is an interesting move because it is a reflective bid although a very weak one. In the last statement in the passage, she comes close to answering her own implicit question as far as answering the question. The evidence for this lies in the openings of the last three sentences: "I don't know... I don't want... I think...". She moves from sounding very unsure to sounding like she has an answer (solution).

Angie's response focuses primarily on the difference in behavior between 4th and 5th grade students and the problem 5th grade students have cleaning up their art supplies.

Wed, 21 Nov 2001 - Angie [mentor]

They really do seem to change from 4th to 5th grade. The teachers at my school want me to let them know if any of the changes I make with 5th work, so that they can try it out. Clean up seems to be the worst part of 5th grade.

She then mentions one strategy she plans to use to solve a similar problem she is having with some of her classes.

I am going back to assigning 3-5 students to clean it all up. That seems to cut down on the extra mess and finding supplies in interesting places!

Using an illustrative narrative in the final section of the message, Angie describes her way of teaching with examples and her justification for doing it that way.

As for showing an example. I only leave it up during the introduction part of the , then I take it down, so that I do not end up with a lot of copies.

This exchange points out the gray area between reflective narrative and illustrative narrative. Both mentor and protégé talk about the same issues – messy 5th grade students and using examples to show students how to complete art projects – Laura does so in a reflective manner, while Angie does not. How are their messages different? First, Laura not only describes what she has already done to try to improve the situation, but she also goes on to consider why this solution did not work. Angie describes what she plans to do, but when she says that “clean up seems to be the worst part”, she is describing an observation rather than allowing room for other possible explanations. Laura also talks about planning as a process with more than one possible direction and Angie does not. This may be due to the nature of Laura's bid. With a weak bid, it is difficult for her mentor to know if she is hoping for feedback or was just using the email message to think through the issues herself. As time passes, Laura and Angie continue to refer occasionally to the rowdy 5th graders, but once the narrative becomes diffuse, it loses its reflective aspect.

Example 9: A Mentor-Initiated Reflective Exchange

Based on the previous examples, one sees that there are a number of flexible and tacit norms for engaging in reflection in this online context. First, the protégé initiates the exchange. Second, the exchange centers around something, usually a problem, the protégé has encountered in her classroom. Third, when communication is coherent, individual reflection, not narrative alone, invites joint reflection. Fourth, reflective exchanges involve two messages (a bid and an uptake) or, if they are multiple messages, they are exchanged over a matter of a few days.

However, Matthew and Kim, the most prolific and reflective of the mentoring pairs, break all of these norms at the same time on at least two occasions. Matthew, the mentor, initiates the reflective exchange. He focuses on a problem he is having with some football players in his class. The story begins when one player informs Matthew that he has decided to remain in his class.

Thu, 17 Jan 2002 - Matthew [mentor]

... Kim, my day was fine until the last minute of the last block yesterday. Our prize quarterback informed me that he was staying in my class. I wondered why he would tell me that as I had assumed he would. Our head "jerk" coach is non-accessable to anyone. We have seen him on campus only three times in the last two years. We call it the Fuller watch and it is ongoing. He asked the student what classes he had as he was concerned about the clearinghouse process all star athletes must go through before they can be recruited. Seems this student has a 2.1 average on a 5.0 scale.

Obviously his [the student's] education was not emphasized. He continues to tell the story and begins to express his anger with the coach's behavior. At this point, Matthew has moved from a reflective stance and started venting – he is no longer talking about the deeper or wider issues, but is using this opportunity to share his feelings with Kim.

When told that I am his English teacher, the coach, who I have never met told him that I had the worst reputaion on the campus and that he would surely fail if he were in my class. This is not the fiorst time he has maligned a teacher as TEA sanctioned him last year for sexual harrassment of a female coach. He called her terrible names in front of other coaches. Names I could not repeat.

I went to the principal and voiced my anger. ...

Matthew's next statement demonstrates how he and Kim are able to communicate in a very abbreviated format because they share a well-grounded understanding of each other's perspective and experiences.

The coach on our campus has only to answer to his New York GIants playing buddy.....the superintendent. ...

In this single sentence, Matthew is conveying multiple embedded meanings. First, (from "has only to answer") he does not think the coach on campus should have that much power through his relationship with the superintendent. Second, (from "playing buddy"), he thinks it is inappropriate for the superintendent to place great value on sports to the detriment of academics. He is taking an ethical stand in support of academic integrity. He does not have to provide more context because he and Kim have discussed their views on

the importance of emphasizing academic learning on a number of occasions. As Matthew has done for her on a number of previous occasions when she has had a problem with a colleague or supervisor, Kim opens with a show of emotional support and begins reflecting on the broader issues Matthew has raised

Thu, 17 Jan 2002 - Kim [protégé]

Go get'em Matthew!! Makes you wish you were a black belt in Karate and you could go take out his knees!

First she considers the relationship teachers should have with their colleagues and overemphasizing sports among young people (ethics).

It amazes me how we are supposed to be a "family" of sorts and be supportive of each other, but then again dysfunction does tend to affect even the best of families.

Coaches should be more concerned with the overall athlete/person as opposed to just focusing on athletic ability. Furthermore, how can these parents not do more to promote education as well as athletics? One injury in college could end a sports career, then what happens to the poor student who isn't prepared to do anything else beside play football?

In the next sentence, Kim makes an abrupt topic shift to an event that occurred in her class the day before. The discussion of the student athlete becomes diffuse at this point, arising again only when Matthew has a negative encounter with other athletes in his class. Although Matthew and Kim communicate on a near-daily basis, the topic does not appear again in their messages until a month later.

As in the previous series of exchanges, Matthew opens the new round of reflection with the latest story about what has happened in his class.

Tue, 12 Feb 2002 15:21:49 -0600- Matthew [mentor]

I have three athletes in one class who think that everything deserves a smirk or a smart ass remark.

One notes that in this opening, Matthew prefaces his story by contextualizing the interaction. It has been a month since the team last discussed this issue, and the preface serves to remind Kim of the situation.

He then lays out the story.

I moved them today and then talked to each of them in the hallway and told them yet again that I was the King of my domain.

Not the Seinfeld episode...I hope you understand.

It has really irked me that after 4 weeks of class they should still be trying my patience. I don't send students to the office as it undermines my power and authority over them. Next on the agenda is a call to the parents. Two of them continue to fail the class and one is the star quarterback....a real lug. ...

Kim begins her response by reflecting on the situation. This is a highly unusual occurrence. Not only is this a case of a protégé responding to a mentor's story, she reflects on a story that the mentor himself has not reflected on. She begins by talking about students who do not value academic learning (underlying cause). This is different from the team's earlier discussion of the societal and parental overemphasis on athletics,

and results from Matthew's change in focus in the previous message to the behavior those students were exhibiting in class.

Tue, 12 Feb 2002 - Kim [protégé]

What I don't understand about athletes is why are they intent on remaining uneducated. Has the thought ever occurred to them that there is life after high school? What do they intend to do for a living?

In the next part of the message, Kim returns to the previous theme of parental irresponsibility (underlying cause).

I don't understand how parents can sit back and let them skate on their athletic ability. My in-laws were such people. My husband's deceased step-dad was all state athlete football, basketball and track in the late 50's and early 60's. He was drafted to play pro for the Oakland Raiders. He played one season and they traded him to Denver. He was so full of himself he declined to play for "a scrub team in Denver"! As a result he worked briefly as a social worker (that's a joke!) before becoming a contractor. He eventually turned to drinking to massage his deflated ego. As an educator I'm sure you know the rest of the story - alcoholism, mental and physical abuse aimed at his step-sons. They were valued more for their athleticism than their intelligence and were held to his standard, which was impossible for them to attain. Sick, sick, sick. My son plays ice hockey and LaCrosse, both sports not recognized in the state of Texas as having any merit. But school comes before sports always at our house.

In the passage above, Kim fails to adhere to another norm: mentors tell illustrative stories, protégés do not.

Matthew's response broadens the discussion to include the values of the educational system as a whole (ethics).

Wed, 13 Feb 2002 - Matthew [mentor]

I hear stories like this so often. We certainly need to reprioritize our basic beliefs in the educational system. We need to require more of our students and quit finding excuses for their perceived shortfalls. We need to limit testing for 504 and content mastery to only include those who are most needy, and teachers need more of a say in the administration of the school. Site based meetings accomplish nothing and the rule is always put down by the administrator who often does not know the needs of the student. I believe in straight talk in the classroom and do not tolerate laziness. They know that I am in charge from the first day of class.

He then closes the series of reflective exchanges on a positive note with good news about the story.

The situation with the jocks has improved. They sought my help this morning on a writing assignment and did this before school when I really had time to spend. Things are looking up.

Kim and Matthew's occasional flagrant "norm-flaunting" is interesting because it shows the flexibility of storytelling and reflection in this variety of online mentoring.

There are patterns in the ways that teachers usually engage in reflection, but they are able to adapt the communicative context for their own use.

Conclusions

The findings of this study suggest that in terms of the content of teachers' email messages, the discourse in which mentors and protégés engage is much the same as it is in a face-to-face environment. They discuss issues that have been commonly identified as some of the concerns of novice teachers (Chubbuck et al., 2001; Feiman-Nemser, 2001a; Fuller, 1969; Veenman, 1984), including classroom management and student behavior, accessing materials and resources the new teacher can use in their classrooms, and balancing the demands of work and personal life.

The communicative context of this version of online mentoring, however, places different demands upon the participants than they would have had in a face-to-face context. While they are given more time to produce and interpret the talk, they are not experiencing the same day-to-day events, and they do not work in the same context. This means that to communicate effectively, online mentors and protégés have to expend more effort creating and maintaining interpersonal relationships and shared understanding than their face-to-face counterparts. Thus talk that appears to serve a solely social function may actually be the interpersonal glue that holds the relationship together.

Like most teachers, the online mentoring teams share their professional practical knowledge through storytelling (Clandinin & Connelly, 1996a, 1998). Although they are text-based, the teachers' online narratives more closely resemble the conversational narratives of spoken discourse than the formal stories associated with written discourse.

Email is a distinctive form of discourse, exhibiting some characteristics traditionally associated with written and spoken language, and in this context of informal and frequent exchanges, the electronic narratives function like the stories that arise in everyday talk. This form of storytelling has several implications for the nature of the online discourse. First, the online conversational narratives are often non-specific or fragmented, based on the teacher's assumption that his or her partner will be able to "fill in the blanks" in the story by building on their shared understanding of the context. This spotlights the significance of the effort teachers expend in grounding conversations.

Second, the online conversational narratives are purposive. Teachers tell stories for a reason, and they make strategic decisions about the content and form of their messages. Thus, the structure of a message indicates a great deal about the intentions of the teacher who wrote it. For example, in venting narratives, the protégés do not follow up on their stories with further discussion. This suggests that as far as the protégé is concerned, there is no need to extend consideration of what happened in the story. This is apparently the way mentors interpret that structure because they almost never offer reflective statements about stories upon which the protégé has not reflected earlier. This is not to say that each time a teacher tells a story, it functions as she intends. Disruptions in the coherence of a conversation, what would constitute regular turn-taking, often spells a quick end to dialogue. In addition, narratives that are open to the interpretation of the part of the reader are also open to misinterpretation by the reader. Once again, grounding serves an important function as it reduces the potential for misunderstanding what the other person has said.

Third, the electronic conversational narratives are fluid in nature. Flexible structure and purposeful storytelling combine to create a context in which topics often shift in the space of one or two sentences, and different aspects of a story may be explored before the end of a single message. For analysis, this means that rather than identify an entire exchange or message by a single label, it is more accurate to think in terms of teachers making decisions about what to talk about on a sentence by sentence level.

Fourth, the online conversational narratives sometimes become diffuse. Diffuse narratives start out just as any other narrative, related by one person who provides the other with sufficient information to render it comprehensible. Then over time, it becomes a fragment of narrative that threads through the talk visited and revisited by both participants as related issues arise. With the combination of a grounding framework and the phatic “glue” that holds the story together, the fragments are woven by the users into one ongoing, comprehensible narrative.

The teachers use online conversational narratives that perform four general functions. Through their use, teachers can: establish and maintain an interpersonal relationship with common ground from which to share experiences (relating), illustrate a point or example made by the sender (illustrating), express frustration to another person who empathizes with their situation (venting), and present information for discussion and consideration (reflecting). Figure 2 below illustrates the four functions of narrative.

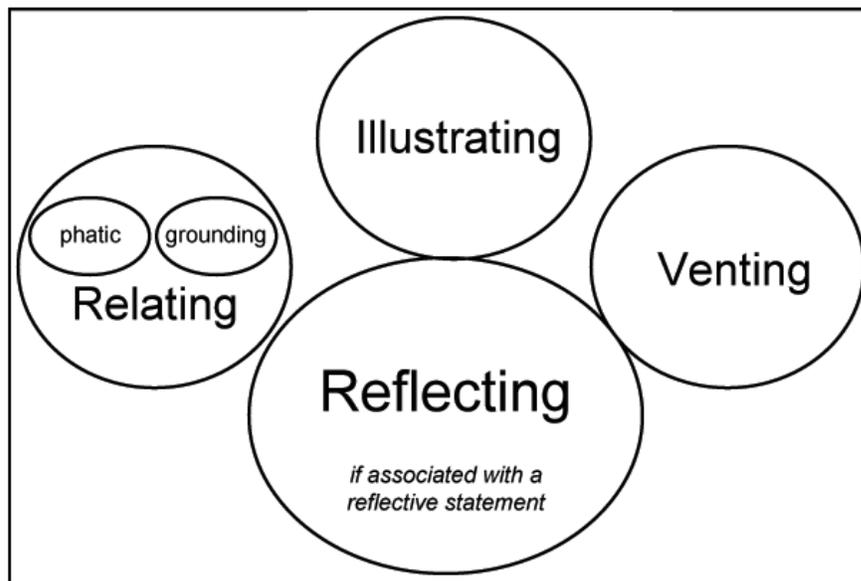


Figure 2. Functions of electronic narratives.

For researchers interested in the role online communication plays in teacher reflection, it is the fourth type of narrative that is most interesting.

Narrative becomes a jumping off point for reflection when it is used in conjunction with reflective statements. When these teachers tell stories accompanied by reflective statements that manifest the consideration of a problem, event, or issue, and its solution, cause, or interpretation, it serves as a catalyst for further reflection. In most cases, the protégé initiates the exchange by telling about an experience she has had in school and then discussing one or more aspects of the problem it presents. This individual reflection serves as a bid that invites a reflective response from the mentor. When a mentor takes up the bid, she extends the protégé's reflection. This reflective exchange usually includes two messages – a bid and a response – but occasionally extends over a series of several exchanges if the issue is ongoing. The protégé's reflective statement, rather than the narrative itself, appears to trigger a reflective response from the

mentor. In the absence of those statements, mentors virtually never offer a reflective response. Instead, they treat the narrative as if it were a case of venting or relating that does not need to be addressed further.

From a practitioner-oriented vantage point, these teachers' reflective statements fall into three classes: problem solving, cause/effect, and interpretation. Within each class, individual statements are situated on a continuum from specific/concrete to general/abstract. This results in eight different categories of reflection, each of which addresses an implicit question from the perspective of the teacher. Figure 3 below outlines those categories.

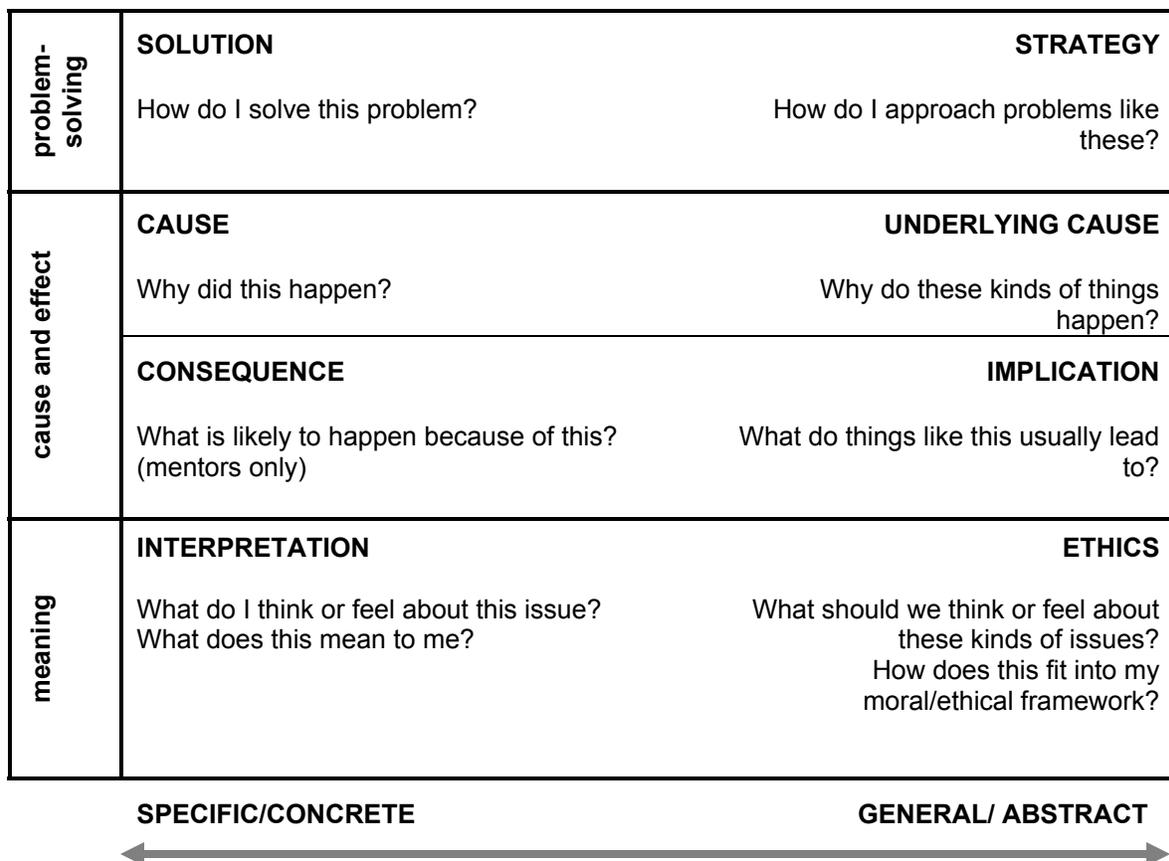


Figure 3. Practitioner-oriented model of reflection.

Looking at the teachers' reflection on a statement by statement level, one sees that the mentors and protégés shift back and forth between the different kinds of reflection, often covering several facets of a problem in a single exchange. In general, the reflective exchanges begin with an attempt by the protégé to solve a problem she has encountered in her classroom. Much of the time, the mentor's uptake closes with a suggestion (usually indirect in nature) for a strategy for solving the problem. However, along the way both mentor and protégé move the reflection from one aspect of the issue to another. Mentors tend to shift toward more generalized or abstract issues, but it is not the case that they always move the protégé toward deeper, higher quality reflection. It is very uncommon for them to engage in what most researchers consider to be critical reflection.

The myriad of ways in which teachers adapt their use of reflection range from very simple to highly complex and mirrors the fact that their reflection is purposeful. Just as the teachers tell stories a certain way for a reason, they make choices about what aspects of an issue merit reflection. In the context of the WINGS Online program, the protégés, through choosing which stories to tell and how to tell them, determine which problems they want to discuss. Their reflective bids show which aspect(s) of the problem are most important to them. When the bid succeeds, the mentor picks up the reflection and shifts the focus to the aspects he or she sees as most important. Thus, by looking at their reflective exchanges, we gain new insight into the novice teachers' and experienced teachers' understanding of teaching.

CHAPTER V

DISCUSSION

The study discussed here took place in the virtual environment associated with an email-based online new teacher support program. It consisted of six experienced teacher mentors and their novice teacher protégés and addressed the central question: What is the nature of the mentoring process in an online context? The specific questions addressed by this study follow. First, how is mentoring enacted in the talk taking place between mentors and protégés in this online context? Second, to what degree, in what ways, and to what effect is reflective talk incorporated in the talk taking place between mentors and protégés in this online context? This chapter summarizes and interprets the findings in regard to these two questions, discusses the theoretical and practical implications of those findings, and makes recommendations for future research.

Summary of the Study

The works of sociocultural theorists including Vygotsky (1978), Bruner (1990), Wertsch (1991), and Wells (1999) frame this research. The sociocultural perspective views knowledge as socially constructed through joint activity in a particular cultural, historical, and institutional setting (Wertsch, 1991). Socially constructed knowledge is negotiated through language and dialogue (Wells, 1999; Wertsch, 1991). The Vygotskian model holds that learning involves a process of internalizing the dialogue of shared meaning (Bruner, 1990; Vygotsky, 1978). This makes it possible for a novice to work with a more experienced peer and achieve a level of competence he or she could not reach independently (Vygotsky, 1978). This is known as working in the zone of proximal

development (ZPD) (Vygotsky 1978). Sociocultural frameworks also highlight the importance of semiotic mediation. That is, the idea that the nature and form of language and other symbolic systems have a profound impact on the knowledge that is constructed through them (Wells, 1999). Therefore, according to this perspective, various modes of communication such as written and spoken discourse foster different kinds of meaning making. Wells (1999) makes a convincing argument that while the rapid exchanges supported by spoken discourse promotes dialogue and collaboration, the slower production time and second order symbolism of written language lead to more reflective discourse. Thus email, which permits the rapid exchanges of speech and the second order symbolism and slower production time of written discourse, is likely to support both dialogue and reflection (Ferrara et al., 1991). This study examines the process of meaning making as it is manifested in the online talk of mentor and protégé pairs.

Mentoring programs provide educational institutions opportunities to support and retain new teachers (Abell et al., 1995; Chubbuck et al., 2001; Feiman-Nemser, 2001b). Traditional (face-to-face) mentors can provide the emotional, instructional, and professional assistance they need as they face the early challenges of classroom teaching (Gold, 1996), but limited time and difficult interpersonal relationships can become problematic (Chubbuck et al., 2001; Gratch, 1998). The distance and asynchronous nature of online communication make it an attractive alternative or supplement to onsite mentoring programs (Baron, 1998a; DeWert et al., 2003; Hawkes & Romiszowski, 2001; Seabrooks et al., 2000).

Online communication provides teachers the (virtual) time and place to join with colleagues to talk about their experiences and reflect on their practice, challenges, and their perspectives on the educational context in which they work and live (Russell & Cohen, 1997). Shared reflection makes the tacit craft knowledge teachers gain through experience available for examination and critique (Clandinin & Connelly, 1998; Schon, 1987). By working with a more veteran colleague, new teachers are presented with an opportunity to draw not only on their own limited experience, but also on the experience and professional knowledge of their mentors. Nevertheless, researchers have found that in most cases online reflection is far from automatic, and novices' reflection may lack depth (Bean & Stevens, 2002; Cruickshank, 1987; Risko et al., 1999). Is this true for novice teachers participating in a email-based experienced-teacher/novice-teacher mentoring program, or is there something unique to this context that supports reflection in a different way? In this study I examined the nature of teams' online talk an email-based mentoring program and the role reflection played in it.

I positioned my research within the interpretivist paradigm because I believe that social action is meaningful, intentional and reflective of the social setting in which it occurs (Geertz, 1973; Schwandt, 2001). I was interested in exploring mentoring as a joint activity in which participants construct shared meaning; interpretivist research methods allowed me to look over the participants shoulders and unearth the meaning of their actions (Schwandt, 2001).

The data included in this study came from email messages exchanged by six mentor/protégé teams during their participation in a university-sponsored online new

teacher support program. In order to assume an emic perspective, I chose to invite teams for whom I had served as a facilitator as part of the program. For further depth of understanding and richness of description, I selected teams who had taken part in one or more of the pilot research projects that preceded this study.

Grounded theory informed my approach to analysis as I operated with the expectation that through a process of close examination and careful consideration, I would see theory begin to emerge from the email messages themselves (Strauss and Corbin 1998). I began by using the constant comparative method to uncover the general themes that emerged from the data, and when patterns began to appear, I turned to microanalysis of the discourse to look at the structural features of the talk (e.g. the organization of message content and the message exchange patterns). These analyses led to the themes and hypotheses discussed in this and the previous chapter. Before summarizing and discussing the findings of the study, I point out its limitations.

Limitations

The hypotheses and implications of this research have to be contextualized within the interpretivist paradigm. Specifically, because it was a small scale study conducted among participants in one online novice teacher mentoring program, these findings may not generalize to other settings. However, I have attempted to provide a sufficient description of the teachers' electronic talk so that readers can make decisions about the comparability of this setting to other settings. Thus, because ensuring the generalizability of findings is not appropriate to the research paradigm which I have used, I have made efforts to maximize the transferability of these findings.

Second, I included members of teams for whom I had served as facilitator, and I left my position at WINGS Online in Fall 2003. Thus, the email messages I analyzed had been exchanged prior to the study. I was unable to ask participants about their interpretations of messages and interactions as they were happening. This meant that any interview data would be based on participants' reconstructions of their interpretations of messages sent from two to three years ago. For this reason I chose to base my analysis primarily on the written discourse in which the teachers engaged, rather than include multiple interviews. To provide some triangulation of data sources, I did, however, include member check interviews at the end of the study in which I asked participants for feedback on my interpretations. At the time this paper was submitted to the dissertation committee, I had not yet received replies to my messages. In cases in which there is disagreement, I will include the teachers' comments.

A third, related limitation arises from the nature of the data themselves. Because the teachers communicated via email, I was not able to watch them interact physically and read the non-verbal cues most qualitative researchers use to inform their interpretations. The teachers generally communicated via email (some did exchange a few phone calls during the summer, and Kim and Matthew met each other for an hour at a program evaluation meeting), so this was less problematic than it might have been if they had been interacting in person. Their interpretations were based on the same information as my own.

Summary of Findings

I devote the rest of this chapter to summarizing the study's findings and suggesting its theoretical and practical implications. I have organized it around the research questions listed initially, which I repeat here for ease of reading. First, how is mentoring enacted in the talk taking place between mentors and protégés in an online context? Second, to what degree, in what ways, and to what effect is reflective talk incorporated in the talk taking place between mentors and protégés and an online context? I begin by looking at the content of the talk and then I turn to its organization and structure.

Themes in the Teachers' Discourse

The themes that arose in these teachers' online talk resembled those found in face to face mentoring relationships with the obvious exception of feedback on new teacher's performance. Central themes included classroom management techniques, the behavior of students as a group, and teaching materials. In addition, there were a few context specific exceptions such as that of the teachers who were job hunting and in the teachers whose teaching assignments were likely to change. They spent a great deal of time talking about their current and future teaching assignments.

Storytelling - Electronic Conversational Narratives

As predicted by the teacher storytelling literature, much of these teachers' talk was devoted to narrative. Although the email narratives were text-based, their form closely resembled the conversational narratives found in spoken discourse. The teachers told stories for specific reasons, and then selected both content and structure that served

their purposes (Norrick, 2000; Polanyi, 1985). Most of the stories did not resemble the formal monologic versions usually associated with written discourse; instead they assumed the wide range of flexible narrative structures associated with conversation. At first glance, many of the stories appeared incomplete or overly generalized for comprehension, but in fact the shared understanding of the situation would allow the reader to fill in the missing pieces of the story. One pattern that is particularly indicative of the conversational nature of these stories was the use of diffuse narratives (Norrick, 2000; Polanyi, 1985). These narratives began as specific stories told by individuals, but were then extended over time in the form of brief subtopics in other messages, visited and revisited by both participants on an occasional basis. These could continue for a series of a few messages or as long as several months.

Structure of Narratives

The narratives themselves assumed a wide range of forms that mirrored the amount of common ground the new teacher assumed that she shared with the mentor as well as her individual writing style. The efforts teammates spent comparing experiences and clarifying contexts paid off when they wrote narratives. That prior creation of shared knowledge allowed the mentor to understand stories that were missing details or were incomplete (Norrick, 2000). In fact, mentors responded to descriptions that were little more than one-sentence quasi-narratives just as often as they did detailed stories. The talk that surrounded the narrative, more than its detail or length, determined whether the narrative led to a reflective response. If the narrative is associated with a statement that implies further consideration of an issue, then it is reflective.

Functions of Narratives

The teachers' narratives served four different purposes: relating, venting, illustrating, and reflecting. First, they told relational stories to build and maintain an interpersonal relationship and create common ground to ensure that they would understand one another. Because this was a virtual environment, and thus teachers were not able to interact and get to know each other through shared activities, grounding understanding assumed a prominent role. Mentors, who usually took responsibility for keeping up communications, tended to spend a little more time on the relational narratives. Second, they told venting stories that expressed sadness or frustration. Because protégés were the ones who were going through the difficult transition, and mentors were the ones who served as support, most of the venting narratives came from the protégés. Third, they told illustrative stories to clarify or explain something they had said. Most of the time, the illustrative narratives were used by mentors to make indirect suggestions about how the new teachers could approach a problem. Protégés almost never told illustrative stories, and mentors often embedded illustrative stories in larger reflective exchanges. The fourth kind of narrative initiated a reflective exchange. Reflective narratives were always followed by, embedded with, or preceded by reflective statements that directly manifest a consideration of a problem, event or issue.

Types of Reflection

Just as the teachers' narratives served a variety of purposes, their reflective statements foregrounded a number of different aspects of issues. In most cases, the focus of reflection among the teachers was a problem the protégé had encountered. It is not

surprising, therefore, that the most common kind of reflection focused their attention on finding a solution to a specific problem. Mentors often encouraged new teachers to expand their perspective on the specific problem and distill a broader strategy of addressing similar problems in the future. A second way in which the teachers approached an issue was to consider what might have caused the problem or led to the event. They did this by discussing the question on a specific level or through talking about the underlying issues that produce situations of this nature. Less common were considerations of the consequences of a situation or action or the implications this it had in terms of the larger picture of teaching. Mentors, who had more experience upon which to base predictions of this sort, were much more likely to engage in this kind of reflection than their protégés. A final dimension of reflection highlighted meaning. When engaged in this kind of reflection about a specific issue, participants considered how to interpret an event or what it meant to them. On a more abstract level, interpretation of meaning meant taking or critiquing an ethical or moral stance on an issue.

While the majority of the reflection focused fundamentally on problem-solving, this by no means indicates that this was the only kind of reflection in which teachers engaged. Often, reflective exchanges began with a look for solutions to the problem presented and ended with suggestions about how to solve it, but between beginning and end of the discussion, teachers reflected on a whole range of different aspects of that problem.

Reflective Exchanges

Virtually every reflective exchange began with a protégé narrative. The narrative was not reflective in and of itself, but more than half of the time new teachers told stories, they followed them with one or more reflective statements that addressed subjects included in the story. This served as a reflective bid to which the mentor usually chose to respond by continuing the consideration of the narrative in a reflective response. Mentors sometimes incorporated an illustrative narrative in the reflective uptake in order to clarify a point they were trying to make.

The structure of the reflective exchanges was in fact quite flexible. Sometimes they were as simple as a single narrative followed by one reflective statement and continued in the mentor's reflective response. In other cases, the protégé included additional reflective statements after the original reflective narrative – reflective statement couplet, shifting between different kinds of reflection as they discussed different dimensions of the same issue. Sometimes more than one strand of reflection was included in single messages, creating multiple bids. The mentor's reply might contain more than one reflective response. While most reflective exchanges were limited to two (or sometimes three) messages, like narratives they sometimes became diffuse and extended over several messages in the form of brief references to the issue in question.

Conclusions

While the content of these experienced teacher mentors and their novice teacher protégés' talk was by and large the same as their face-to-face counterparts, the unique setting in which they interacted (via facilitated email communication as part of a university sponsored novice teacher support program) supported a kind of mentoring

discourse not previously described by researchers. Like most teachers, they devoted a great deal of their talk to storytelling. Using a text-based electronic medium, they created narratives that share many of the characteristics of conversational narratives associated with spoken discourse rather than the formal stories one traditionally associates with most written discourse.

Teachers were skilled enough at the use of email that the electronic medium became "transparent" and allowed them to communicate in a way featuring many characteristics of informal speech. Email allowed the teachers time to formulate and reflect on stories, yet minimized the time between turns and made responses timely. In fact, delays in response turned out to be highly disruptive to the communicative process.

The electronic conversational narratives that resulted were characterized by their flexible, fluid, and purposive nature. The narratives came in a wide variety of forms and degrees of completeness. In some cases, the stories assumed the form of diffuse extended narratives. Teams (some more than others) were able to exchange and comprehend narratives like these because they spent time prior to telling the incomplete story engaged in discourse that allowed them to create a shared body of knowledge. That shared knowledge allowed the reader to fill in the blanks when there were gaps in detail. As in spoken conversational narratives, mentors and protégés told stories for a reason, and they structured them according to those purposes. The narratives the teachers related served four different functions: relating, venting, illustrating and reflecting.

More than half of the stories protégés told were associated with one or more reflective comments. The association with reflective statements - rather than the content

or structure of the story itself - is what distinguished a narrative as reflective. This narrative-statement couplet served as a reflective bid that usually led to a reflective response (uptake) from the mentor. This meant that although the protégé initiated reflection and determined the subject to consider, it was the mentor's responsibility to take up the bid and extend the reflection. Disruptions in communication longer than a few days spelled the end of most reflective exchanges. Most of the time, exchanges were limited to a bid and a response, but the most reflective team sometimes extended the reflection along with diffuse stories. Thus although the narrative served as a catalyst for the reflective exchange, once the team began reflecting, they chose how or how long to reflect. This was a collaborative process, so the exchange required active participation of both members of the team. Heather was a unique case in these terms. She was a particularly self-reflective new teacher who did so independently on a few occasions.

Like the structure of the electronic conversational narratives, the reflective process was quite flexible. Some reflective exchanges were very simple (e.g. the protégé told a story, stepped back to consider an aspect of that story, and the mentor extended the reflection by considering the same aspect of the same story). Other cases were highly complex as this scenario illustrates. The protégé's story might spark a series of reflective statements in the same message that focused on various aspects of the same problem. The mentor's reply might address one aspect, provide an illustrative example to show what she meant, go on to address another aspect of the problem brought up by the protégé or choose to take the reflection in an entirely different direction. This focus of reflection shifted from one aspect to another on a sentence-by-sentence basis.

The reflective exchanges initiated by the protégé usually centered on a problem she had encountered at school, but on what aspects of the problem did the teachers choose to concentrate? Their consideration of past events fell into eight categories: solution, strategy, immediate cause, underlying cause, consequences, implications, interpretations and ethics. Teachers' reflective statements addressed issues as if they were looking for answers to a series of implicit questions. Below are the implicit questions addressed in their reflective exchanges according to a practitioner-oriented model of online reflection.

- *solution* - How do I solve this problem?
- *strategy* - How do I approach problems like these?
- *immediate cause* - Why did this happen?
- *underlying cause* - Why do these kinds of things happen?
- *consequence* - What is likely to happen because of this?
- *implication* - What do things like this usually lead to?
- *interpretation* - What do I think or feel about this issue? What does this mean to me?
- *ethics* - What should we think or feel about these kinds of issues? How does this fit into my moral/ethical framework?

This form of online mentoring between teachers differs significantly from the electronic journals and discussion boards used by many teacher training and support programs that include an online reflection component. The one-on-one dialog between peers (experienced and novice) in a setting in which mentors were not asked to assume a

directive or evaluative role produced talk that was more like a face to face peer dialogue rather than the process of writing and receiving feedback from an instructor or supervisor. The fluid structures of the stories and reflective exchanges highlight the conversational nature of their communication.

The teachers reflected on the protégé's experiences from several angles, and considered issues from both concrete and abstract perspectives. However, teachers did not regularly engage in deep reflection. With the exception of Kim and Matthew, the most reflective pair, teams rarely focused on ethical issues for any length of time. Fewer than ten of the more than one hundred reflective narratives included in this study concentrated primarily on ethical dimensions of an event or situation. At the same time, almost all of the protégés at least touched on questions of ethics, and almost half of the narratives focused on interpreting meaning beyond coming up with a solution or uncovering the cause of something. Thus, while the novice teachers used narratives as a way to reflect on their understanding of what was happening in their classrooms and the experienced teachers shared their professional knowledge through storytelling, it did not often lead to critical reflection as defined by Hatton and Smith (1995): "seeing as problematic, according to ethical criteria, the goals and practice's of one's profession" (p.45).

The question of whether this lack of critical reflection is problematic from the perspective of a support program designed depends entirely on the purpose of the program. In the case of WINGS, it was not a problem. It would have been a good thing if the teams had engaged in a great deal of critical reflection, but that was not the reason

behind the program. The goal in implementing the program was to provide support to graduates of the University of Texas at Austin's teacher preparation programs and thereby lower the number of new teachers who left the field prematurely. The definition of "support" was intentionally left broad because WINGS was designed as a "just in time" form of mentoring that would be responsive to the needs of new teachers.

Implications

Theoretical – A Practitioner-Oriented Model of Reflection

This study contributes to the literature on electronic discourse by providing an examination of email-based communication that has the flexibility and adaptability of spoken conversation and showing how users (the teachers) were able to manipulate its use to suit their communication objectives. They used the style of conversational narratives to engage in the kind of storytelling normally associated with spoken discourse - they were engaging in electronic conversational narratives.

I have offered a model of reflection that adds a dimension to the existing discussion. Whereas many researchers examine the depth of reflection, I have examined it in terms of the purposes of reflection. My data offers insight into the perspective of the teacher, helping uncover the function reflection served from the standpoint of the teacher. What kinds of questions was she posing to herself and her teammate when she offered a reflective statement? My findings do not contradict the four-tiered model put forth by Zeichner and Liston (Zeichner & Liston, 1987), but they do point out some of the complexities that an exclusive focus on the depth of reflection may overlook.

These teachers were looking at events and issues from multiple angles, often moving back and forth from one to another in rapid succession. They did so purposefully. While they did not often engage in critical reflection, they did reflect on the things that both novice and experienced teacher found important. The mentor was able, by shifting the kind of reflective statement offered, to redirect the protégé's attention to something he or she felt was important. Knowing what the teachers found worthy of reflection and how this played out in their conversation not only informs our theoretical understanding of teachers' professional knowledge, but also offers insight and ideas for improving support for new teachers discussed next.

Practical

The findings of the study inform the design and implementation of programs intended to train and support pre-service and practicing teachers, in particular online mentoring programs. Findings show the close connections between the program goals, the intended role of mentors, and the kinds of reflection associated with them. The mentors and protégés in the WINGS Online program were peers and although the more experienced teacher in many cases assumed a caretaking role, he or she was not in a supervisory position and had not been told what they were supposed to do or how they were supposed to relate to the new teacher. The kind of emotional support this mentor provides both directly and indirectly (as recipients of venting narratives) can be very beneficial. This context also provides a forum for new teachers to hear about and learn the accumulated craft knowledge of their veteran colleagues, as well as explore their own understandings of their experience.

If, however, the goal of the program is to engage novice teachers in deep critical reflection, this program design may not be the best support option. This form of online mentoring may not be well-suited for programs which are explicitly focused on improving the new teacher's practice in the short term. It is difficult to help a new teacher learn to improve upon her current practice if one cannot see her practice. In email, the only version of the event that the mentor receives is the version the protégé interpreted and was then willing to share in the form of a story.

One must keep in mind that although more experienced teachers are in a good position to teach their novice colleagues what they know about the profession; their view of good teaching is not always shared by educational researchers. As we saw in some of the teachers' messages, mentors have a wealth of knowledge that is directly applicable to the pragmatic "survival" of novice teachers, but their advice to protégés sometimes reflects stereotyped thinking, advocates classroom management strategies that fly in the face of constructivist teaching, and rarely engages in deep reflection.

Email-based online mentoring could be adapted to take advantage of the benefits of this form of electronic communication while meeting the aims of different kinds of novice teacher support program. For example, if the goal of the program is to encourage deep reflection, and the direction of reflection is determined in large part by the mentor, training the mentor to engage in deep reflection herself might make a profound impact on the kind of reflection in which the protégé engaged. Since the conversational narratives arose naturally in this setting, training the mentors in the coaching process may not be necessary. A second possible adaptation might be used to make online mentoring work

for programs whose goal is to improve practice. If distance is the motivating factor for choosing online mentoring in a novice teacher support program, it might be useful to add a video component to the program that allows mentors to observe the new teacher, provide written feedback, or even model a technique through the use of video in her own classroom. The logistical obstacles presented by such a program would mean that in all but the most remote settings, this approach would likely be ill-advised.

This study also offers suggestions as to how to provide a communicative setting that is conducive to online mentoring. Two of the keys in fostering reflection in this setting are creating a shared understanding between mentor and protégé and maintaining coherent communication between them. The need for shared understanding highlights the importance introductions have in shaping the relationship to follow. Having facilitators in place to help introduce participants and encourage them to communicate when pauses between messages become over-long is an important component to include an online mentoring program.

Recommendations for Future Research

The scope of this study has been limited to the issues addressed in my research questions, but a wealth of issues have arisen during the research process that deserve further consideration in the future. There are three areas which appear to be promising sources of useful research. With a wider group of participants (i.e. a larger sample size), one could look even more closely at patterns in the reflective process itself. While this study focused on the connection between reflective bid and reflective uptake, what about the patterns of reflection within the uptake? Do certain kinds of reflection tend to lead to

other kinds of reflection? For instance, do mentors tend to shift from specific solutions in one reflective statement to more general strategies in the next? Second are issues of change over time - especially in the diffuse reflective narratives. While my data indicated that reflection does not automatically deepen over prolonged reflection, how does the protégé's interpretation of the problem change? Third is an issue that will require a wider group of participants than were included in this study. Are there cultural or gender-related differences in how mentors and protégés relate and reflect? This is especially interesting in the light of the research done on culture and storytelling.

Continued research on the support new teachers receive as a part of this kind of program is also an interesting direction for future research. If the goal of a program is to support teachers in a way that encourages them to stay in the profession, does this approach to support actually reduce attrition? If the goal of a program is to help new teachers become more reflective practitioners, do new teachers who participate in online mentoring (with mentors who are trained to engage in deep reflection) actually become more reflective?

The design of email-based mentoring programs is a third area that calls for additional research. For instance, in the case of these teachers, I assumed an administrative role as facilitator - what if the facilitator took a more directive role in the interactions, stepping in to scaffold teachers' reflection? Second, how do these one-on-one mentoring relationships differ from the one-to-many interactions found in the electronic bulletin boards? Finally, how and to what extent can one apply this approach to

preservice training in which novices have fewer stories to tell and are faced by different kinds of challenges?

In summary, this study provides a model of reflection that foregrounds the perspective of the practitioner. It shows that email affords a variety of flexible and fluid communication through which teachers can tell stories of experience – and thereby share their personal practical knowledge – in the form of electronic conversational narratives with the dialogic and emergent properties of informal spoken discourse. This form of narrative, in which teachers structure their stories in purposeful ways, supports the kind of moment-to-moment (statement-to-statement) reflective process that highlights the issues teachers consider important.

APPENDIX A:
TEAM CASE HISTORIES

Elizabeth and Michele

This team's match began at the end of October 2000 and officially ended in March 2003, but their exchanges became very irregular after Spring 2002. The mentor and protégé exchanged fifty-three messages over that time, not including messages exchanged with me about administrative or technical issues.

Based on the information included in the application process, Elizabeth came into the relationship looking for a mentor who "had a fresh perspective on effective teaching", experience teaching different kinds of math classes and had a "large bank of lesson plans/lesson ideas that [had] worked well for the teacher."

Michele was a high school math teacher with every twenty years of experience in the classroom. She taught various levels of algebra and geometry in a wealthy suburban school district. In her application she said that their resources she had to offer new teachers included planning ideas and resources, activities that she had created, and her "ideas of the best strategies for teaching a particular concept."

When they began working together, Elizabeth was finishing her student teaching semester. She taught high school math, and after she graduated in December, she found a job teaching Algebra I in a high school in a large city in central Texas. She taught a class whose teacher had left early in the fall semester and had been overseen by a series of permanent substitute teachers. When Elizabeth began, she felt the students were glad to

finally have a permanent teacher, telling Michele, "a few of my classes gave me a round of applause when I told them I would be their permanent teacher". She found her first semester to be a challenging one, and she looked forward to teaching an Advanced Placement course (a more prestigious teaching assignment) the following fall. She was disappointed to find out that there were not enough students for her to offer the class.

Michele's messages included a number of illustrative narratives that explained how she did something in her class. She was usually careful not to give Elizabeth direct advice, even when she had asked for information or input. After one message from Elizabeth in which she expressed a great deal of frustration, Michele did give her advice that was more direct than a story of a parallel experience. In the exchange, Elizabeth had asked, "when does the frustration stop being the result of being a new teacher and become the sign that I should look for something else to do?" In Michele's response, she told her about the similar experience she had her first year of teaching, but then went on to suggest an activity to help her figure out what she should do. She said, "I think you need to list....actually write out the answer to this question: What is it exactly that is making you so unhappy? If you are unhappy with the teachers you work with, write it down. If you are unhappy about your classroom, your teaching assignment, the behavior of the kids, the paperwork, lack of time..... write it all down. Then think about it, go over it with your best teaching bud." Interestingly, this is the only time among all of the teams that an experienced teacher suggested an individual reflection activity to one of the protégés.

In turn-taking, Elizabeth tended to be slower to respond, sometimes needing to be reminded a couple of times before she replied to a message. One possible explanation for Elizabeth's slow response may result from the fact that she worked in a very supportive math department. A second possible reason may be due to the email list itself Elizabeth also changed email accounts in her first full year of teaching, and although she still received messages sent to the first account, she did not check it very often. During the 2001-2002 school year, most of Elizabeth's messages, which were quite infrequent, focused on the emotional trials of being a first year teacher rather than curriculum as such.

Michele was quick to respond to Elizabeth's messages, and in cases where there had been a long delay between messages, she sent a message to Elizabeth very soon after I asked her to check in with her protégé.

Throughout the match, Elizabeth and Michele did not tell very many of the stories of common experiences. When there had been long delays in response time, Michele's "check in" messages usually used a personal story as a conversation starter, but Elizabeth usually did not include phatic narratives of this sort in her messages. This meant that when Elizabeth told stories about the problem she was having she included have good deal of background information to explain why she was feeling and she did.

Laura and Angie

Laura and Angie's match began in April 2001, as Laura was completing her student teaching semester. Angie had ten years of experience teaching art in public and private elementary students. She lived and worked in a suburb of a large city in central

Texas, and had formerly taught in the school district in which Laura found an elementary school art teaching position. Angie taught in a wealthy suburban school, while the schools in which Laura taught were in a high poverty neighborhood in the city. When she selected a mentor, Laura said she was looking for someone to discuss lesson ideas, provide classroom management tips, and give suggestions about communicating with parents and administrators.

Because of Angie's experience in the school district, she and Laura began the match with a good deal of common ground. In fact, they discovered not long after their match began that Laura had worked one day as a substitute teacher in the class next door to Angie's. Throughout the match, they shared stories about school that served as regular updates of how things were going at school. Their narratives were often brief and lacking detail, but there were no signs that this posed a problem in the partners' understanding of each other.

Most of their stories focused on the day-to-day aspects of keeping students engaged in productive activities and materials organized. Organization was an especially significant issue for both mentor and protégé. Laura was given a split teaching position, spending two-thirds of her time at one school and one-third at another. This meant that she had to keep track of art supplies for two different classrooms. Angie taught at a single school, but the size of her classes - up to forty students at one time - made for real challenges distributing and storing supplies. In Angie's initial application, she highlighted this situation, saying that "being organized is the key to a peaceful class

period." Many of stories she told to Laura dealt with strategies for keeping classes organized and keeping students on task.

Both teachers taught art on rotating schedules (where students took different "special" courses like art, music, and PE on different days), so the number of different students each of them worked with each week was staggering. Angie's school was scheduled on a trimester system; as a result, she taught over a thousand students during the initial year of the team's match. The situation changed later when the school - in a suburb that was experiencing explosive growth - was divided into two. Not surprisingly, students in their stories were usually portrayed as "classes" or "grades" rather than individuals.

Laura and Angie communicated very frequently in the early days of their match. I almost never needed to send them reminders. Thus, when WINGS was experimenting with the levels of facilitation needed to maintain active communication among members, they were one of the teams we asked to participate. As part of the experiment in late fall 2001, my email account was removed from the team's email list. This meant that although I was able to view the team's messages by accessing the WINGS program database, I could not send or receive messages via their list. During that period, Laura and Angie virtually stopped communicating, so my account was returned to the email list. After the winter break of 2001-2002, the teammates began to communicate less frequently. They exchanged messages on average three or four times a month, usually in response to a reminder from me. They participated in one of the pilot studies in the summer and fall of 2002, and after that began to communicate more regularly until the

end of that semester. Laura and Angie engaged in even turn-taking in their email exchanges. When one person sent a message, the other usually responded, so that no one person "carried" the conversation. The team exchanged a total of 176 non-administrative messages in the twelve months that they worked together.

Kim and Matthew

This team was by far the most prolific of all of those included in this study. Kim selected Matthew as a mentor in October 2001. Kim had selected another online mentor prior to working with Matthew, but the first mentor had been unavailable. Both mentor and protégé considered this to be a very lucky occurrence, and were very happy to have discovered each other. Kim had worked with an onsite mentor during the previous year, but she had a very negative experience with the onsite mentor, who was an administrator at the school. Her first mentor had given no indication that Kim's performance did not meet her expectations under the last day of school, when she was very negative. In Kim's message in which she introduced herself to Matthew, she mentioned the experience. Her experience with Matthew was much different.

Mentor and protege were both very frequent senders, often exchanging several messages in a single day. Between the beginning of their match in October 2001 and the end of June 2002, Kim and Matthew had each sent over 200 email messages. They continued to exchange messages the following year, but the volume of exchanges gradually diminished to one or two messages a day and then a message every few days, depending on what was happening in Kim

Kim was a middle school art teacher in a suburb of a large city in Central Texas. She began as an "official" classroom teacher in fall 2001, but she had worked at the school during the previous spring as a permanent substitute teacher. She viewed herself as a second year teacher and sometimes wrote about how much easier the second year had been than the first.

Matthew was a senior English teacher at a high school in a small city in southeast Texas. He had been recognized as an outstanding teacher several years before he worked with Kim, and he said that he felt like it was important for him to live up to that honor. He originated and sponsored a fine arts program in his school. He lived close enough to Houston that he took students on field trips to various cultural events in the city a few times each year. He had twenty-three years of experience in the classroom.

Kim's frequent messages were usually filled with detailed stories about issues that had arisen at school, and although Matthew's messages tended to be a little shorter, he returned Kim's messages very quickly. Both mentor and protégé communicated almost exclusively using their school computers, so they rarely sent messages over the weekend. For the first several months, they exchanged messages on a near-daily basis. On most days, they exchanged multiple brief messages as time permitted (during the passing periods, lunch, and planning period).

The problems Kim talked about primarily had to do with her interactions with students and colleagues and motivating students to take an active part in an elective class. A recurrent theme in Kim's messages was the frustration she felt with students, parents,

colleagues, and administrators who failed to see the value of elective courses such as art. Matthew shared her views.

While Kim and Matthew, who were teaching different subjects to students at different age levels, were not in the position to exchange lesson plans, she often discussed activities that her students were working on and considered ways to improve upon them or how they might be improved upon.

More than most of the other new teachers, Kim was able to relate to the students in her class as individuals. This may have been because she was more mature than the younger novices, or because she had more experience in the classroom (having worked for a semester as a substitute teacher).

Kim and Matthew had a more egalitarian relationship than many of the other teams; this may also have had something to do with age. This pattern became more prominent over time. Whereas at the beginning of the year, the two focused almost entirely on Kim's experiences, in the spring, Matthew initiated an ongoing discussion based on something that happened to him at school. In addition, as the semester came to a close, and Kim began to express her appreciation for Matthew's support, he also wrote about how much he had received from the mentoring relationship.

Throughout the first year Kim and Matthew communicated with each other, Kim remained uncertain about her teaching position. She was not sure if the principal was supportive of her art program and the work she was doing. In addition, she learned of an opportunity to transfer from teaching at the middle school to teaching at the high school. While she thought that this might be a very good opportunity for her, she also wanted to

continue to build the art program at her school. In the end, she decided to stay at the same school.

Elena and Margaret

Elena began working with Margaret in April 2002 when Elena was nearing the end of her student teaching semester. Margaret was a third grade English as a Second Language teacher in a mid-sized Central Texas city. She had taught at the at-risk school for seven years. Elena student taught in a third grade bilingual education class, but found a job teaching first grade in a large Central Texas city; one of her initial concerns was that she was unfamiliar with the first grade curriculum.

The two organized much of their discussion around a list of Elena's expressed concerns. Typically, she would list a series of concerns for Margaret to give her advice and feedback. The following quote is an example of the way Elena often asked for help: "My first concern is now to prepare my classroom." Elena and Margaret communicated frequently in the first two months of the match, and then again at the beginning of the fall semester, but they began to do so less often as the semester went on. Elena found it difficult to find time to write and had two mentors at her school that she was able to turn to for support. At about the same time, Margaret's school district installed a firewall that prevented her from sending or receiving messages to and from the email list. She had trouble accessing the Internet from home, and it took nearly a month for her to communicate regularly again. She regained access, but then after a few more exchanges, she found out that she was seriously ill. Mentor and protégé only communicated twice after that, but it appeared not to be a problem for Elena. She said,

I have not been in touch with Margaret for a while. Not her fault. She has always help me when I needed it. However, it is sometimes impossible for me to seat in the computer and write questions. I have been getting help from other mentors I have here in school, but it is good to know that she is only one e-mail away.

Elena and Margaret exchanged thirty-four non-administrative messages in the five months they worked together.

Nancy and Charlotte

Nancy graduated from the university in Spring 2002. She selected a mentor in the early summer, but the mentor whom she had selected from the WINGS database was unable to participate. She found a job teaching middle school social studies in an affluent area of a large city in Central Texas. In order to encourage diversity, students from a primarily minority neighborhood rode busses from across town to attend the school. When the original match did not make, Nancy discovered that there were no middle school social studies teachers in the mentor database who were available to work with a protégé. I located Charlotte for her at the end of July. Charlotte was a high school history teacher with thirty years of experience in the classroom. She had had experience teaching several history courses on both the high school and middle school levels, and at the time the match began, she was teaching World History.

Nancy's one special request from a mentor was that he or she be straightforward with her, saying that she would like to hear "the honest truth, even if it's brutal!" Charlotte had served previously as a face-to-face mentor on a number of occasions, and emphasized the importance of being nonjudgmental as a mentor. Charlotte indicated that

she thought mentors could help novice teachers best by sharing with them the lessons they had learned from experience. Charlotte wrote the following in her mentor application: “If they [new teachers] can learn to take away from the experience nuggets of wisdom rather than banging themselves over the head, they will continue to be passionate about this profession they have chosen.”

Due to a long series of technical problems in creating the email list, Nancy and Charlotte did not begin communicating regularly until the beginning of October. Nancy tended to be slower to respond than her mentor, and when Sherri messaged again without receiving a reply first, she used phatic narratives as anecdotes to restart the conversation. Nancy’s messages usually related a to problem she was having at school. She talked frequently about learning activities in which her students were engaged and the ways in which they worked well or did not work well.

Nancy appeared more confident about her abilities as a teacher than the other protégés. For example, in response to an inquiry from Charlotte about her evaluation, she wrote “My evaluation went very well... I had some students who wanted to ‘show off’ for the Principal and they suddenly forgot how to raise their hands and contribute to discussions properly, but I took care of that. I got several exceeds [high marks on the evaluation] for my use of accountable talk and higher level thinking and cooperative learning.”

Like the other protégés, Nancy’s greatest challenge during her first year was dealing with student behavior, but she did not express the same degree of frustration as her peers. She only opened one message with a story in which she described a bad day.

Most of the time, as in the example above, she wrote that things were going well, and then added discussion of any problems that had arisen in class later in the message.

While their messages were warm and friendly, Nancy and Charlotte did not often discuss personal issues or share stories about things that did not relate to students or curriculum. Charlotte's introductory message focused on her experience as a teacher and included her suggestions for teachers who were starting out. Nancy did not send an introduction, but launched directly into telling Charlotte a story about a problem that had come up in her class and asked her for advice for dealing with some issues she had encountered in class. The team exchanged forty non-administrative messages in the six months they worked together.

Heather and Mary

Heather requested a mentor in September 2002, but due to series of technical difficulties, did not begin communicating with Mary until the end of October. Heather was a first year teacher at an "at risk" school in a mid-sized Central Texas city. She taught seventh grade life science. Mary taught seventh grade science and an eight grade physics and chemistry course at a math science and technology magnet school in a mid-sized city in East Texas. She had been teaching for 23 years.

At the time she began teaching, Heather had attended a postgraduate teacher certification program, but had not yet completed the teacher certification exam. She was working under emergency certification when she began, and her certification status continued to be a challenge throughout the year. She indicated in her application that she needed help on a wide range of issues including planning lessons, strategies for

classroom management, and ideas for hands-on activities. She was looking for a mentor who would be able to look at her lesson ideas ahead of time, but amid pragmatic challenges of being a novice teacher, she was unable to do so.

Mary viewed discipline to be one of the biggest challenges for new teachers. She thought that one of the important contributions she bring to a protégé would be to "Find out where they are specifically having trouble and suggest how I would solve it". She said in her application, " They may like the idea or not, but at least will be given another alternative..." A second role she expected to play was listener. She said, "Sometimes we just need to "vent" to someone neutral. Sometimes you may not even want help, you just want to be heard".

The school at which Heather taught was a very difficult setting for a new teacher. She was assigned face-to-face mentors, but did not receive significant help from them. She also worked in a department staffed by new teachers, and did not have anyone on-site available to help her with planning. She entered the classroom three weeks into the fall semester, and had a great deal of trouble maintaining control in the classroom. She worked with limited access to supplies, and did not have all of the laboratory equipment she needed for students. One of her initial questions was how to access additional resources. In addition, Heather struggled to find activities that were both interesting and addressed the state 7th grade Science standards. On some occasions, Heather listed the standards she needed to address and asked for suggestions or ideas on how to plan activities that would address them.

Heather's stories were often quite long and often presented multiple issues within the same message. Mary's responses did not always address all of these questions, but Heather did not appear to be bothered by that fact. She appeared to be more self aware than most of other new teachers, and sometimes her long narratives were peppered with instances of individual reflection. Mary tended to be slower to respond to messages than her protégé, and this uneven turn-taking appeared sometimes to disrupt the flow of conversation. On more than one occasion Heather initiated a discussion and did not appear to receive a response, and Mary's message a week or two later began a new discussion rather than continuing in the previous direction. There are two potential explanations for Mary's apparent lack of response in these cases. First, the team occasionally exchanged messages directly; this meant that some messages were missing from the archives. A second possibility arises from Mary's expectation, expressed in her initial application form, that a new teacher (Heather) needs to vent and may not always want help. This team exchanged seventeen non-administrative (archived) messages in the six months they worked together.

APPENDIX B:

MENTOR APPLICATION FORM

MENTOR INFORMATION FORM # XX -- Mon Feb 5 21:14:24 CST 2001

Name:
Primary Address :
Secondary Addr :
Institution :
Work Address :
Work City,St,Zip:
Work Phone :
Fax Phone :
Home Address :
Home City,St,Zip:
Home Phone :
E-Mail per week

Brief description (content area(s) & grade level(s), etc.) of your current work:

Please describe your teaching experience, including areas of specialization/certification and number of years of service.

Please choose one of your favorite learning activities for students and describe it. What, in particular, do you like about it?

Please describe the nature of classroom interactions on "your best day at school.

What do you like MOST about teaching? Why?

What do you like LEAST about teaching? Why?

In your opinion, what are the greatest needs of student teachers and novice teachers?

What would you do as a telementor to assist one new teacher to meet some of the needs described above?

Please supply any other information that novice teachers seeking telementors should consider while reading about you at the WINGS Online Web site.

APPENDIX C:

MENTOR REQUEST FORM FROM PROTEGE

MENTOR REQUEST # 58 -- Wed May 29 01:40:48 CDT 2002

Mentor App Num :
Name :
Gender :
Primary Address :
Secondary Addr :
Home Address :
Home City,St,Zip:
Home Phone :
L Home Address :
L Home City,St,Z:
L Home Phone :
Institution :
Work Address :
Work City,St,Zip:
Work Phone :
Fax Phone :
E-Mail per week :

Teacher Certification Year, Program, and University:

Brief description (content area(s) & grade level(s), etc.) of your current teaching:

Brief description (content area(s) & grade level(s), etc.) of your projected teaching, if different from "current teaching" above:

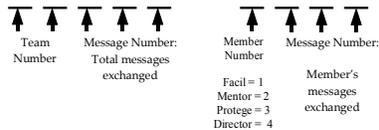
What kinds of assistance would you like your telementor to provide?

What special requests (if any) do you have of your telementor?

APPENDIX D:

SAMPLE FORMATTED MESSAGE AND KEY TO CODING

Key to Numbering System



Key to Color Codes

Red = Mentor

Blue = Protege

Green/White = facilitator

Purple = Director

131313004

Date: Tue, 11 Sep 2001 16:35:46 -0500

From: WINGS Online Anne [Protege] <anne-jennifer@lyris.ots.utexas.edu>

To: "WINGS Online" <anne-jennifer@lyris.ots.utexas.edu>

Subject: [anne-jennifer] Bad day

Jennifer,

Are you as shocked as I am about today's events in NY and D.C? We still had classes and I had a test in the second one. In my social studies class we did not do much else but watch the news. My teacher asked us "How would you handle this if you were the teacher and your students had heard about what happened?" What do you tell them? Do you let them watch the events unfold? How did you handle these events today? I remember being in 2nd grade when the Challenger exploded. I didn't see it, we didn't have TV's in classrooms back then, but I remember talking about what happened but I was so young I don't think I really understood what was going on. I'm sure many young children don't understand...

APPENDIX E:

MESSAGE EXCHANGE PATTERN CHART

date	list from protégé	list from mentor	list from facil	facil to/from	private to protégé	private to mentor	private from	private from	init/resp.	day of week
3/7/02				1						Thu
3/8/02										Fri
3/9/02					1	1				Sat
3/10/02							1			Sun
3/11/02								1		Mon
3/12/02										Tue

Revised Timeline: Used to code basic exchange patterns and what was happening when the messages were exchanged

Excel file: Revised Timeline.xls

In "research data" file

Hint:

Print the timeline, but mark the exchanges themselves in pencil in case they need to be changed.

Code for days of the week: begin with initial date, then choose "custom" under the number tab. The code for abbreviated days is ddd

To autofill dates, highlight initial date, and drag down until you reach the end date. (choose the box at the bottom right corner of selection to fill series.

APPENDIX F:
TOPIC CODING SCHEME

1. Background
 - 1.1. professional
 - 1.2. personal

2. School
 - 2.1. attributes/characteristics
 - 2.2. event(s)/activity(ies)
 - 2.3. school/district policy

3. People other than students
 - 3.1. colleague(s)
 - 3.2. parent(s)
 - 3.3. administrator(s)

4. Students
 - 4.1. class
 - 4.1.1. attributes/characteristics
 - 4.1.2. motivation of members
 - 4.1.3. behavior of group
 - 4.1.4. event
 - 4.1.5. needs
 - 4.2. individual
 - 4.2.1 attributes/characteristics
 - 4.2.3 behavior
 - 4.2.4 needs
 - 4.2.5 relationship with

5. Curriculum
 - 5.1. general (e.g. 7th grade math concepts)
 - 5.2. planning lessons or activities
 - 5.3. classroom learning activity
 - 5.4. teaching materials/resources
 - 5.5. standardized testing (e.g. TAAS, TAKS, etc.)

6. Methods
 - 6.1. teaching methods -
 - 6.1.1. general
 - 6.1.2. constructivist
 - 6.2. classroom management
 - 6.3. motivating students to learn
 - 6.4. assessment/grading
 - 6.5. meeting individual needs (?)

7. Teaching Profession
 - 7.1. job search
 - 7.2. teaching assignment
 - 7.3. professional development/training
 - 7.4. appraisal/evaluation
 - 7.5. professional responsibilities
 - 7.5.1. meetings
 - 7.5.2. documentation
 - 7.6. time demands

8. View of self as teacher
 - 8.1. perceived needs
 - 8.2. goals
 - 8.3. efficacy (i.e. how I'm doing as a teacher)
 - 8.4. suitable profession or not (?)

9. Personal
 - 9.1. event
 - 9.2. emotion
 - 9.2.1. negative
 - 9.2.2. positive
 - 9.3. physical issue(s)

10. Outside Event

APPENDIX G:
RESEARCHER AS INSTRUMENT

My role with the WINGS Online program began in Fall 2000 as I entered the PhD program in Instructional Technology at the University of Texas at Austin. I was the first facilitator to join the program. In the first semester of implementation, I worked with five teams who were made up of secondary math and science student teachers and experienced teachers with whom Judi Harris, founder and director of the program, was acquainted. These teams, including Kate and Rhonda, began working together at the end of October of that year. Dr. Harris did not prescribe a role for me as facilitator beyond asking me to forward any technical issues to her, introduce mentor and protégé, work to smooth out any interpersonal frictions, and try to make sure the mentors and protégés communicated at least once a week. She based this timeframe on the research she and some of her former students had done on K-12 classes and their subject matter expert mentors as part of the Electronic Emissary program. I reported once a week to Dr. Harris about the team's progress.

I considered my job as facilitator to be largely behind the scenes. I was charged with contacting the potential mentor when the director assigned me to a protégé who had submitted a request form. If the first mentor requested was unavailable, I asked the new teacher to select another from the database. Occasionally, as in the cases of Kathy and Michael and Catie and Sherri, the protégé needed help finding another mentor. I worked with them to find mentor who was suited to their needs and personalities (as judged by

their mentor request forms). Once a mentor agreed to participate, I submitted a request to create an email list, and while the email was being created, I sent a series of introductory messages to both participants. I created the introductory messages, and revised them slightly each semester as I gained experience in which issues most often proved problematic. The introductory series included a message introducing the teammates to the program and outlining my role as a facilitator, an explanation of how the email list operated and who was able to see their messages, a list of email communication tips, and my introduction which was intended to serve as a model for the participants.

APPENDIX H:
MEMBER CHECK INTERVIEW RESPONSES

Nine participants responded to my requests for online member check interviews. I was unable to contact Charlotte, Angie, or Elizabeth. Each participant received an electronic copy of the case history included in the previous appendix and the summary of my findings taken from the final chapter of this paper. In addition to asking them for general comments on the case history and summary of findings, I posed the following questions:

1. Did I overlook anything in my description?
2. Although I've used synonyms, do you see anything that you think might identify you?
3. Do you think I got it wrong in any of my interpretations?

With two possible exceptions, which are discussed below, respondents agreed with my descriptions and interpretations. Kim, the middle school art teacher paired with Matthew, said, "I thought you accurately documented our mentoring relationship. There's nothing I would suggest changing. I thought you did a great job of sticking to the facts and focusing on the WINGS project." Laura, the elementary school art teacher paired with Angie, said "I think the description of the way typical reflective exchanges took place sounds dead on. And this statement "email allowed the teachers time to formulate and reflect on stories," really gets to the heart of how I think it worked for me." In her response, Elena (the novice first grade bilingual teacher) said that she could "definitely

identify" herself. When I asked her if she thought I needed to make it more difficult to tell who she was by my case history, Elena said, " When I said I could identify myself, I meant that it was good, because you really caught how I felt at the very beginning and how overwhelmed I was with everything."

Responses from Mary (Heather's mentor) and Nancy (the novice middle school social studies teacher) did not focus on the accuracy of my descriptions and interpretations, but instead explained their particular situation. Mary, whose responses sometimes seemed to leave gaps in the team's exchange patterns, wrote, "I know that I had two addresses for my mentee and she had two for me so we would use whichever was more handy. That may have been part of the disconnection seen in the correspondence". When I asked Heather (the middle school science teacher) about the off-list email messages, she wrote, "Occasionally, my mentor would respond with her own email account directly to me, but it did not always happen that way." Unfortunately, neither mentor nor protégé saved copies of the messages. Thus, while some of the disruptions in exchange patterns may have been the result of messages exchanged directly between mentor and protégé, it is not possible to determine exactly which gaps were actual pauses within the exchanges and which were messages that were not archived.

Nancy's response went a long way in explaining why she did not use WINGS as a context for deep reflection. She began by telling about her teaching assignment for the previous year in which she taught two different grade levels and did not have her own

classroom. She went on to describe the other support she was receiving at her school.

Nancy wrote,

Not only did I participate in WINGS (not very well either), but I was involved with the NTIP program with Texas State, on campus we had a new professional support group with mentors, I developed a strong relationship with our curriculum specialist, one of the AP's, and the Principal. I am very reflective in nature and a Type-A personality. This year I became department chair (unbelievable) and have been working closely with the district.

Nancy also explained her view of relating to other teachers, saying, "Generally all of my relationships in my teaching career are professional. I don't like to have personal relationships with those that I work with (even though it cannot be helped sometimes) because of all of the gossip that goes around." From this statement, it is clear that Nancy does not distinguish between the kind of relationship she had with Charlotte - who knew her only through the WINGS program - and the teachers on her campus.

Other comments from teachers included clarifications about their schools, and additional details that might help a reader understand their situations. For example, I had originally identified the neighborhood in which Laura's school was located as "working class", but she said it was more accurate to think of it as a high poverty area in which "Something like 80% of the students live in government housing projects. Nancy provided similar information. My original description of her school as being in an affluent neighborhood did not take into account that some of the students in her school are" bussed" from less affluent areas of the city. Laura explained that technical problems

created a major disruption in their communication. A filter on her email account was routing the messages sent to the team's email list into the "junk" folder. She said,

... I don't know how long it was before I realized that was happening. I think it might have a difference in how much we ended up e-mailing over the long haul. I know it created a gap and I assumed during that gap that we were not doing the mentor thing anymore. The "level of facilitation" we needed "to maintain active communication" might have been different without that. But I think that made me assume it was over and then it was strange to pick it back up again.

Laura's description points out the value of member checking. As her team's facilitator, I knew that she had experienced a problem with the email filter, I did not realize how disruptive it had proven.

Margaret's responses were by far the most reflective. Whereas the other teachers appeared to focus primarily on the case histories, Margaret (the experienced third grade English as a second language teacher) wrote about her understanding of online mentoring. First, she wrote about the reason she and her protégé (Elena) did not communicate as often as Margaret thought they should have, saying that "it's hard to sit down and type back and forth when you've got so much to do and people in your school to mentor or to mentor you. It's much easier and faster to walk next door and get immediate feedback and help." Margaret went on to consider the kinds of situations in which online mentoring might be most beneficial.

I can see the WINGS program really helping out a new teacher if they don't have a mentor at their school or one that they feel comfortable with; if they have problems with their mentor or staff that they want to remain confidential; or if their on campus mentor is busy and cannot help them as much as they'd like help and advice. It would also help if their on campus mentor and they were stuck or needed more advice or ideas than just the 2 of them can come up with. Then the on-line mentor can give his/her advice and ideas.

Margaret read my summary as saying that there is a "lack of reflective communication between mentors and and mentees". She then reflected on why this might be the case.

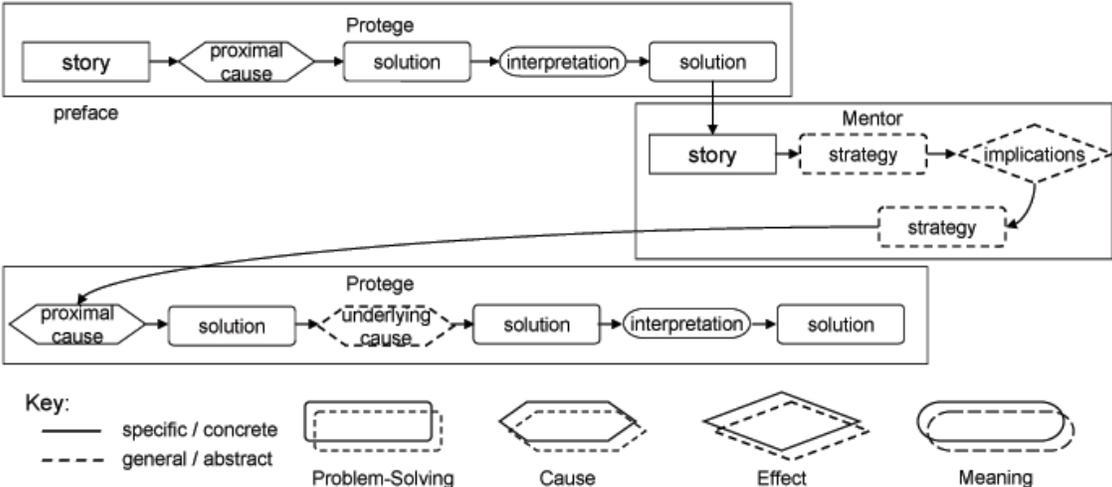
I think this is because that usually is done by and needs to be done by someone on your campus who has been helping you and is able to see you teach. This type of communication usually needs to be immediate and must be observed by the mentor so that both may be truly reflective and the feedback meaningful and beneficial. What you observe and see as an experienced teacher will probably be different from what the mentee observed and saw. When you can't observe the teacher teaching and the class participating, you can't help but stay in the abstract mode from the lack of knowledge of what actually happened.

Perhaps the most interesting part of Margaret's discussion of reflection is the light it sheds on her understanding of what it means to reflect. To Margaret, the kind of generalized reflection of underlying issues often referred to in discussions about deep reflection mean little without a direct connection to experience.

APPENDIX I

EXAMPLE OF A COMPLEX REFLECTIVE EXCHANGE

**Reflective Exchange #4:
Heather - Engaging Students**



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