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Student Teacher Perceptions of the Impact of Mentoring on Student Teaching

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Abstract

Mentoring is an essential component of the student teaching experience. The support provided by highly prepared and effective mentors contributes to the success of student teachers during this high stakes period of professional development. Findings from this mixed-methods study support five mentoring factors as valid and a useful framework for measuring the impact of the mentoring received by student teachers in the student teaching experience. The five factors are: personal attributes, system requirements, pedagogical knowledge, modeling, and feedback (Hudson, 2007).

The Mentee Perceptions of Student Teaching survey was given to student teachers upon the conclusion of their student teaching experience at Minnesota State University, Mankato. Convergence of quantitative and qualitative data showed that mentoring practices implemented by the mentors supported the development of student teachers. Although no statistically significant differences were found between mentoring in the co-teaching and non-co-teaching sub-groups, results revealed important details of the student teachers' views. Themes emerged that add credence to the five mentoring factors that are well supported in current literature. In addition to verifying what has been done during student teaching, the five factors also serve to identify the specific responsibilities of mentor teachers and should be used to articulate the goals and outcomes for their role as a mentor.

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Table of Contents

List of Tables

Chapter 1

There is a public expectation that teachers possess content knowledge and teaching skills that lead to the success of all learners in today's classrooms. These demands on teachers exist regardless of how many years the teachers have been in the profession. Not only do school districts seek to hire the most qualified teachers, the 2001 passage of the federal No Child Left Behind Act only added credence to the demand for improved teacher quality. Teacher preparation programs and schools are accountable for improvements in student achievement and are under scrutiny to provide professionals that can live up to these expectations.

Studies have shown that teachers who receive mentoring support from experienced teachers during their first years in the classroom increase the rate of developing effective teaching practices (Strong, 2005). Evidence is uniformly consistent that effectively mentored teachers have more confidence in their abilities and stay in the profession longer than those who do not receive mentoring support. Mentoring plays a vital role in helping new teachers acclimate to the classroom, school, and educational community. Mentoring includes the provision of emotional or psychological support during the teacher's initial entrance into the classroom by a more experienced teacher, called a mentor. Effective mentors affirm beginning teachers with empathy and encouragement. Through collegial exchanges and collaborative lesson planning experiences, mentors also engage beginning teachers in reflective conversations about how the instructional practices lead to student learning, creating a bridge to instructional effectiveness (Strong, 2005).

Pitton (2006) describes the needs of pre-service student teachers as similar to the needs of first year teachers. Student teaching is a key event in the lives of future teachers and can either make or break their success in their own classrooms (Glenn, 2006). The student teaching experience is a critical time period in the development of pre-service teachers, where they apply what they have learned in their preparation programs and learn from the opportunities to work collaboratively with experienced teachers who are more knowledgeable. Darling-Hammond (2006) refers to student teaching as a "culminating experience" during which student teachers try new strategies and utilize the experienced teachers' support to make sense of their new experience (p.12).

Traditional models of student teaching employ a graduated level of responsibility by the student teachers. The experienced teachers allow the student teachers to first observe, then assist, and finally take over solo planning and instruction (Darling-Hammond, 2006). Evans-Andris (2006) studied the traditional student teaching model and found that beginning teachers reported a separation between their student teaching experience and their readiness for their own classrooms. Student teaching helped familiarize them with the occupation of teaching, but left them with a contradiction between the expectations they had of themselves and the reality of their new role. This incongruity created a great need for emotional support, as well as technical assistance involving their work.

Co-teaching differs from traditional student teaching and is a more collaborative model of instruction. It consists of student teachers and experienced teachers planning, designing, implementing, and evaluating results of their instruction together (Chapman & Hart-Hyatt, 2009). Widely used in schools between general and special educators, co-

teaching is increasingly being viewed as an effective method in which to include pre-service educators, such as student teachers. Through dialogues between student teachers and co-teaching mentors, reciprocal learning occurs for both individuals.

Mentoring is a method to assist student teachers as they are introduced into the realities of the classroom. With highly effective and experienced teachers serving as mentors during their student teaching experience, student teachers are more able to connect the theoretical learning from their preparation programs to applications of teaching practices with their students. Mentors supervise the student teachers while providing them opportunities to make instructional decisions on their own. Mentors engage new teachers in a process of reflecting on the evidence of their teaching, which leads to positive effects on the student teachers' practice and self-confidence (Darling-Hammond, 2006). The first year of teaching is more successful when student teachers have been allowed to take on all of the duties of the classroom teacher with full support from a highly effective mentor teacher (Pitton, 2006).

Problem Statement

Relatively few mentoring models include focus on pre-service teachers who are still in their teacher preparation program (Rick, 2006). Little empirical research has been conducted about the effectiveness of mentoring from the perspective of student teachers and a lack of documented literature exists on how mentoring influences the outcome of student teaching. Evidence is needed to determine the degree to which mentoring influences the student teachers' experience and what, specifically, the student teachers perceive as having the most impact on their practice.

Research Purpose

This mixed-methods study intended to examine the mentoring experience of pre-service teachers that completed student teaching in public school classrooms. In this study, quantitative and qualitative data was collected concurrently using a survey that measured the student teachers' perceptions of the mentoring they received and the impact it had on their success during student teaching. Convergence of the data was explored to better understand the detailed aspects of the student teachers' views of the mentoring experience in a traditional model of student teaching versus a co-teaching student teaching experience.

Research Questions

1. What are student teachers' perceptions of the mentoring factors that contributed to success in their student teaching experience?
2. What are the differences between the perceptions of student teachers that are in a co-teaching placement versus a non-co-teaching placement?

Significance of the Research

A study of mentoring experiences of student teachers in a pre-service teacher preparation program is important for several reasons. First, just as the needs of pre-service teachers are similar to the needs of beginning teachers, so are the possibilities for their acquisition of effective teaching skills through the support of highly qualified mentor teachers during student teaching. Mentoring is a professional practice that lends itself to more accountability in preparing student teachers for the teaching profession (Darling-Hammond, 2006). The use of effective mentoring practices will help student teachers learn new instructional strategies while acculturating them to a new environment

and socializing them to new professional norms. This study will add confidence to advocacy for the allocation of resources necessary for the provision of mentoring experiences for all student teachers.

Second, uncovering the specific aspects of mentoring practices within the student teaching setting will provide a greater depth of knowledge about the value of the mentoring support on student teachers before they enter their first year of teaching. Previous studies have measured the effectiveness of mentoring on reducing the attrition rates of newly licensed teachers (Trubowitz, 2004), but less is known about the specific ways in which mentoring is used productively to work with student teachers and what program structures enable that work to result in the growth and development of the student teachers' capabilities. This study will lead to improved mentoring implementation.

Third, according to Feiman-Nemser (2001), the vision of the mentoring program depends on the school-university partnerships that support professional development for both the mentors and student teachers. Identifying what mentors do to support the student teachers during student teaching, and how the student teachers perceive the impact of mentoring on their professional growth, will reinforce research-based approaches to mentoring and define practices that lead to increased efficacy of the student teachers. This study will add essential literature to the field of teacher preparation.

Definition of Key Terms

- *Attrition*: The loss of teaching personnel, represented by a number or percentage (Moore-Johnson, 2004).

- *Co-teaching***:** A teaching model where two or more professionals share responsibility for a group of students and work collaboratively to deliver instruction (Chapman & Hart-Hyatt, 2009).
- *Mentoring*: A long-term, individualized process in which an experienced professional provides support and guidance to a less experienced individual (Bird, 1999).
- *Mentor*: The experienced teacher in the mentoring relationship (Bird, 1999).
- *New or beginning teacher**:*** The less experienced teacher in the mentoring relationship; typically referred to as teachers who have not yet completed three years of teaching after initial licensure (Faber, 1989).
- *Student teacher***:** A person who is currently in a preparation program that leads to licensure for teaching (Darling-Hammond, 2006).
- *Student teaching**:*** A result-oriented, performance-based program requiring the demonstration of an acceptable level of teaching performance by a student teacher (Foord, 2004).

Summary

Understanding the nature of student teaching and the importance of having quality mentors to support student teachers was outlined in the introduction chapter of this proposal. In chapter 2, a review of pertinent literature will describe how teacher preparation has changed over time and how contemporary research has prompted renewed focus on the student teaching experience. Five essential factors of mentoring will be highlighted to probe more deeply into how mentoring impacts the beginning

teacher. Chapter 3 will describe the subjects of this study and will present the methodology that was used to gather and analyze the data.

Chapter II

Review of the Literature

It is widely understood that the quality of the teacher is a key factor in the success of children in K-12 classrooms. A Rand study in 2009 (Buddin & Zamarro, 2009) showed that teacher quality has large effects on student achievement. Students who have several effective teachers in a row make dramatic academic achievement. Conversely, the impact of poor teaching on students' academic gains is alarming, even two years of ineffective teaching in a row can cause students to lose significant ground in their achievement. It is the perception of this lagging student accomplishment, especially for at-risk minority students and students from disadvantaged families, that has led to a pervasive concern from parents, educators, and policymakers to push for improved teacher quality in all schools.

For this study, a review of literature pertaining to the evolution of teacher preparation practices will show how it has changed over time to include extended and collaborative field-based experiences. The literature will provide an understanding of why teacher attrition has become a problematic issue for new teachers who are already teaching in U.S. classrooms, and how the development of mentoring programs for teachers has positively addressed this dilemma. The transition from the traditional student teaching model to a more collaborative and reflective teacher preparation experience will be discussed to connect the appropriateness of mentoring practices for the student teachers whose needs are similar to those of new teachers who are fleeing today's classrooms at alarming rates. Components of comprehensive mentoring programs and practices of mentor teachers will be described and their impact on student teachers will be

reviewed. The chapter will conclude with a comparison of U.S. literature according to the five factors of mentoring that were developed by an Australian researcher in student teacher development. The five factors will be the source for the methodology discussed in chapter three.

Accountability for Teacher Quality

Accentuated focus on teacher quality is played out in high stakes testing and Adequate Yearly Progress (AYP) associated with the No Child Left Behind (NCLB) Act of 2001 (Bertucci, 2009). The authors of NCLB acknowledged a cause-and-effect relationship between teacher performance and student achievement when they implemented rigorous school accountability measures with requirements that try to ensure that all children are taught by "highly qualified" teachers (Center for Best Practices, 2005). Every child deserves a high quality education. To help students achieve at higher levels and help schools meet the AYP requirements, well-prepared and well-supported teachers are needed for all children. Implied in high-quality performance of teachers over the course of the students' educational experience, is the schools' ability to retain the highest quality teachers throughout that time.

Attrition

A reality of public education in the United States is that not only is it faced with the issues of teacher quality, but it is also challenged to keep its most effective teachers in the profession (Sack, 2002). The argument has been made that the demand for high quality teachers results not from being unable to produce them, but from high attrition rates of existing teachers, particularly those within the first five years of their profession (Darling Hammond, Hammerness, Grossman, Rust, & Schulman, 2005).

Attrition can refer to the number of teachers that leave a teaching position within in a school or it can mean the loss of teachers in the teaching profession altogether. Annually, about 16% of teachers leave the schools in which they work, especially those that are in high-poverty schools (Berry, 2011). Ingersoll and Kralik (2004) reported that 14% of new teachers leave the profession entirely after one year and a third of all teachers leave the teaching profession within their first three years on the job (Moir, 2009). Nearly half leave within the first five years of teaching, which causes students to continuously be presented with new, different, or less effective individuals at the helm of the classroom (Berry, 2011). Breaux and Wong (2003) agree that whether the teacher leaves the school or the profession, it is the children who will suffer from continuous turnover of teachers.

Not only does the turnover rate disrupt the continuity in the teaching environment necessary for teaching and learning to thrive (Caroll, 2005), but the financial costs of teacher turnover can be staggering. The National Council for Teaching and America's Future (NCTAF) estimates a cost of $50,000 for each teacher who leaves a district after their first three years of teaching (Fulton, Yoon, & Lee, 2005). Ingersoll and Kralik (2004) estimate American schools spend more than $2.6 billion annually, replacing teachers who have left the profession. If a quantifiable amount could be added to represent the "loss in teacher quality and student achievement," Ingersoll suggests, the cost could be even higher (p. 2).

Why Teachers Leave

Researchers have, for a long time, attempted to identify why teachers leave the profession early. Even in the late 1990's, trends emerged from research and from

testimonials by new teachers themselves. First, the expectations and scope of the job overwhelmed them. A gap emerged between their expectations of what teaching would be like and the realities they found with the job. They experienced disparity between their preparation for teaching and the real, day-to-day life in the classroom. Lastly, the beginning teachers felt isolated and unsupported in their classrooms (Bartell, 2005).

More recently, Ingersoll and Kralik's summary of the research (2004) listed job dissatisfaction, salaries, lack of administrative support, lack of student motivation, student discipline, and powerlessness with regard to decision making, as reasons why new teachers leave. The most current literature notes that teachers continue to struggle for survival in their early years in the profession. While most teachers join the profession to "make a difference in students' lives" (Moir, 2009), beginning teachers' frustration at being unable to perform successfully often drives them away. The difficulties they experience being on their own for the first time, cause them to feel isolated and as though they are "alone on an island" (Danielson, 1996). These feelings lead to despair and cause them to reconsider their choice of becoming a teacher. Moore-Johnson (2004) confirms the new teachers' lack of belief in their capacity for success, "if teachers do not experience success with their students in the classroom, they are unlikely to stay" (p. 12).

Promising possibilities

Unfortunately, America is losing many of its brightest new teachers before they have a chance to reach an experienced level (Carroll, 2005). Believing there would be enough teachers to fill even the hard-to-staff schools if many teachers were not lost every year, Caroll (2005) identified a lack of beginning teacher support as one of the main reasons, and one about which something can be done. Strong (2005) agreed, stating that

many of the reasons why teachers leave, such as feelings of stress, lack of support, and poor communication with colleagues, are "definite candidates for reversibility by mentoring" (p.187).

Advocates like Caroll (2005), Strong (2005), and others, call for a stronger start for new teachers. Better working conditions, including effective leadership and teacher involvement in decision making, and better preparation and support, are efforts that can attract and retain a sufficient supply of qualified teachers. A comprehensive and sustained mentoring program for new teachers is a primary vehicle for effectively reversing these issues and can play a vital role in keeping new teachers in the profession.

Mentoring

Mentoring is an active form of the term mentor and was believed to originate from Homer's *The Odyssey*. Mentor was chosen by Odysseus to raise his son Telemachus while he was away at war. Mentor served as a role model, guide, facilitator, and supportive protector for Telemachus. In the education context, the role of mentor has taken on the meaning of providing support for teachers, serving the ability to perform functions such as teaching, sponsoring, encouraging, counseling, and befriending (Bertucci, 2009; Bird, 1999). Mentoring was first introduced to education in the 1980's as a system of support for new teachers and, as of 2003, has increasingly become implemented in some form by at least 47 states (Marable & Raimondi, 2007). Some states have moved toward mandates of new teacher mentoring, although policy of this kind is still widely inconsistent.

Buddy Systems vs. Comprehensive Systems

Mentoring programs for teachers vary widely from informal buddy systems in which mentors receive no compensation, training, or release time, to the more comprehensive programs that include highly prepared mentors who are carefully selected, compensated for their work, and provided with common planning time to engage with their new teacher peers. Buddy systems are primarily for the purpose of providing social support by offering answers to questions new teachers may have in the event that the new teachers know to ask for them. The support comes from assigned fellow teachers who may, or may not, have any inclination as to the intended purpose of their role. Poorly conceived buddy system programs as well as underfunded endeavors like these, have virtually no impact on teacher retention, job satisfaction, instruction, or student learning (Moir, Barlin, Gless, & Miles, 2009).

Results of Comprehensive Mentoring

Breaux and Wong (2003) distinguish effective mentoring programs as one of the essential components of a larger new teacher induction system, which is a comprehensive, coherent, and sustained form of professional development. Formal mentoring programs have full-time, highly trained mentors who are provided with sanctioned time to meet with new teachers they serve. Evidence of effective mentoring is seen when experienced teachers and new teachers engage in shared inquiry into effective practices that result in higher student achievement. Candid conversations about lessons occur between the teachers and include continuous reflection of the results of the their work. The relationship between mentors and new teachers is based on trust that develops through their regular contact with each other. Even the mentors often report feeling

"renewed and reinvigorated" as a result of their participation in the mentoring experience (Caroll, 2005).

Wiebke and Bardin (2009), outlined components for effective mentoring programs, through their study of the New Teacher Center in California. The New Teacher Center is widely recognized for being highly comprehensive and has sustained successful practice over many years. These essential criteria include:

- Rigorous mentor selection
- Ongoing professional development for mentors
- Sanctioned time for mentor-new teacher interactions
- Guidance toward moving instructional practices forward
- Instructional coaching
- Standards-based, data-driven conversations (as opposed to casual feedback unsupported by evidence.)
- Professional development designed specifically for new teachers

Reduce Attrition

Importantly, the New Teacher Center mentoring criteria are grounded in research, showing cost-benefit ratios over five years and also proving to have a strong impact on reducing attrition, by as much as 50% (Ingersoll & Kralik, 2004). In 2004, a Rand study on teacher attrition also confirmed that schools that provided mentoring and induction programs, particularly those related to collegial support, had lower rates of turnover among beginning teachers (Guarino, Santibanez, Daley, & Brewer, 2004). At the heart of mentoring programs like the one just mentioned, collaboration between teachers engages

a continual focus on teaching, learning, and joint problem solving. These are the types of school cultures in which new teachers are most inclined to stay (Jorissen, 2002).

Improve Instruction

Retaining teachers is not the sole benefit of effective mentoring. Mentoring also accelerates the new teachers' progress toward teaching proficiency. Providing practical knowledge, training, and skills needed to succeed during the first years in the classroom increases the impact on student achievement exponentially (Caroll, 2005). Evans-Andris, Kyle, & Carini (2006) caution mentoring programs that solely target the emotional and technical concerns of new teachers. Addressing social adjustment and survival needs of the new teacher are important, but programs that fail to progress to the next level of promoting stronger teaching practices are making a critical mistake. Because new teachers are still shaping their decisions and strategies regarding curriculum and instruction, they need support and guidance in constructing their practice (Grossman & Thompson, 2004).

Specific to Beginning Teacher Needs

Improving instruction, however, is not something that is implemented in the same way for all teachers. Support for new teachers must be differentiated and based on their respective teaching assignments (Fielding & Simpson, 2003). If teachers are going to achieve high levels of student performance in their classrooms, they must be sustained with the type of psychological support, instructional assistance, and understanding of educational politics that impact them in the setting in which they work on a daily basis. Good & Bennet (2005) described a mentoring program in which new teachers are assisted, not assessed, and the new teachers always "had a say in which direction it

should go" (p. 46). Topics that were openly discussed included specific classroom experiences, pertinent and appropriate class management strategies, lesson planning ideas, and an overview of the evaluation model that would be used by their administrators. New teachers rated the mentoring program favorable and "worth the time commitment" (p. 51). This signifies the importance of the mentors' recognition of the individual needs of new teachers and their ever changing needs over the course of the school year.

Some of those needs are predictable, based on information that has been collected by various researchers. Melnick & Meister (2008) identified the eight most serious problems that new teachers reported, in order of severity: classroom discipline, motivating students, dealing with individual differences, assessing student work, relations with parents, organization of class work, insufficient materials and supplies, and dealing with individual student problems. In addition to that list, handling paperwork, dealing with parents, management issues, overwhelming responsibilities, acculturation into the field, and feeling alone and unsupported were also frequently reported.

The many difficult challenges that beginning teachers identify during their first years in the classroom are not dissimilar to those that pre-service student teachers also face in their preparation to become licensed teachers. Student teachers who are in the final stages of their pre-service preparation program, their student teaching experience, are not dissimilar to new teachers who are one step ahead of them.

This theme of incongruity is also commonly found in first year teaching, and like new teachers, student teachers are asked to assume similar responsibilities and are expected to attain successful results (Bartell, 2005). Kagan (1992) reviewed studies about the student teachers' transition into the classroom and the conflicting emotions that

transpired. It was found that the student teachers entered the student teaching experience with preconceived personal beliefs about what makes good teachers. They imagined themselves as good teachers, based on memories of themselves as students. In reality, they found they did not understand the complex relationship between classroom management, student behavior, and academic tasks. Their new role as a student teacher did not meet their expectations. The disillusionment this paradox caused led to uncertainty about their capacity to overcome it. Considering the many complexities of learning to teach, student teachers continue to face the same immediate challenges as beginning teachers (McCaughtry, Cothran, Hodges-Kulinna, & Faust, 2005). Universities and schools have a similar, vested interest in ensuring that the teachers they support, whether they are pre-service or experienced, find success in the classroom and remain in the teaching profession.

Teacher preparation programs

Teacher preparation programs are wise to consider how the implementation of high quality mentoring can contribute to the growth of the student teacher, while also impacting the entire school. However, this is not how teacher preparation initially began. Determining the best way to prepare pre-service teachers to effectively reach all students in the classroom has been highly debated in education for decades. Teacher education programs have long been criticized for having too little connection between educational theory and the realities of teacher practice (Darling-Hammond et al., 2005).

Over the years, preparation programs have been reformed to include a more integrated program between coursework and the field-based practice in which beginning teachers participate. The integrated model includes an attempt to reinforce a common set

of standards for professional practice, rather than leaving it up to chance according to the methods of the identified cooperating teacher. Use of this shared, public knowledge about teaching and learning became the vision for the beginning teacher, so as to be able to articulate what good teaching looked like (Darling-Hammond, 2006).

Professional standards such as those developed by the Interstate New Teacher Assessment and Support Consortium (INTASC) and the National Board of Professional Teaching (NBPTS) articulated specific knowledge and pedagogical practices that teachers should know and be able to do. Danielson (2007) defined the concept of teaching with a framework for professional practice. Danielson's four domains of teaching identify those aspects of teachers' responsibilities that have been documented through empirical studies and research as promoting student learning (Danielson, 1996). Field-based experiences for student teachers began to include strategies such as the use of performance assessments and analyses of teaching practice, in order to articulate the beginning teachers' level of performance (Darling-Hammond et al., 2005). The focus on the framework for teaching was designed to help provide coherence between coursework and the classroom.

Contemporary teacher preparation is based on the assumption that learning to teach is acquired through collaboration with others and evolves over years of practice, from pre-service through the end of the last phase of the teachers' career. Darling-Hammond (2006) suggests that learning about teaching develops through participation in a community of learners. This view supports teachers' ability to develop their craft over the course of a professional lifetime, rather than expecting it to occur exclusively during the pre-service program. Within the community of learners, cohorts of teachers engage

in joint observation, analysis, and evaluation of lessons. They use inquiry-based opportunities to learn in contexts where new techniques can be immediately applied in instruction. Breaux and Wong (2003) refer to this as a network of learners with a culture of collaboration and continuous learning.

The National Commission on Teaching and America's Future (NCTAF) also holds a vision for creating schools where teachers share and master content and pedagogical knowledge together as community of learners. NCTAF convened summits in 2005 where participants concluded that induction for new teachers should include relationships with colleagues, establishing support for continued learning and growth (Fulton, Yoon, & Lee, 2005). Mentoring is a fundamental factor that can contribute to the professional integration of teachers into the community of practice culture. It includes the transfer of knowledge from teacher education programs, the promotion of personal and professional well-being, and socialization to the school culture in the school.

Learning to teach is a life-long process (Caroll, 2005). Never considering themselves a finished product, good teachers understand that classroom effectiveness is a quest they must continue to pursue and that the education field and their students all inevitably change. Support systems that include mentoring can be used during the pre-service teachers' transition from university classroom to the school classroom.

Student Teaching in Pre-Service Preparation

Student teaching has typically been viewed as the most important part of the teacher preparation program. Identified as the period of time that culminates the pre-service teachers' training, student teaching is seen as a practical approach to teaching by providing student teachers with an opportunity to integrate theory with practice in the

classroom. Campbell & Williamson (1973) were the some of the first to find that the most significant person for student teachers during this experience is the cooperating teacher with whom they are assigned. They identified the relationship between the cooperating teacher and student teacher as the "most important variable of success in student teaching" (p. 168). When the student teachers first entered the classroom, they were expected, essentially, to emulate the classroom teacher. Brodbelt & Wall's (1985) study showed that whether the model was good or bad, student teachers conformed to the behavior and expectations of the cooperating teacher. The influence of the cooperating teacher was, and still is, significant.

Traditional student teaching experiences typically range from 10 to 18 weeks in duration (Darling-Hammond et al., 2005). They typically follow the university calendar, meaning student teachers may miss out on early entry into the classroom at the beginning of the school year, or end of year activities, such as closing down the classroom. Student teachers are assigned to a classroom on the basis of what the cooperating teacher teaches. Placement decisions are typically made by school officials such as an administrator or building principal, often as an open invitation to staff members to volunteer for the assignment. Instructionally, student teachers gradually acquire responsibilities for the preparation and delivery of lessons, or portions of lessons, and typically culminate their student teaching with a period of solo-teaching time, such as a week or two. Researchers argue that this type of field experience in and of itself is not enough to equip student teachers with the essential skills to succeed in their own classrooms.

Currently, student teaching models have become more collaborative in nature. Student teaching still consists of the facilitation of teaching responsibilities and tasks, but

also grounds the student teachers' experiences with reflection on practice. Collaboration with the mentor teacher in the classroom allows for the integration of the experienced teachers' expertise, with the multiple sources of knowledge that the student teachers come with. It allows them to make personal sense of concepts, theories, research, and beliefs to guide their teaching decisions. Darling-Hammond (2006) reported that not enough collaborative models are in place. The director of Reinventing Schools for the 21st Century for the National Commission on Teaching and America's Future, believes "teachers should be in teams, working collaboratively around problems identified in their schools that are related to the students in the classroom" (Fulton 2003, p. 34). Moore-Johnson (2004) of the Project on the Next Generation of Teachers at the Harvard Graduate School of Education also promotes school-wide structures that encourage the frequent exchange of information and ideas among beginning teachers and experienced teachers. When teachers meet in teams to focus on a problem, Johnson says, they become "part of a team that will work with students who need their help" (p. 99).

Effective Mentoring Practices in Student Teaching

Mentoring is collaboration that brings teachers together to examine how their teaching impacts their students' learning. The mentoring process exposes new strategies, encourages the sharing of ideas, and promotes an increase in self-confidence in the teachers' own capabilities (Brock & Grady, 2006; Villani, 2009). While mentoring has been shown to benefit the experienced teacher as well as the less experienced, it is implicit that mentoring will contribute to the establishment of the student teachers' norms, attitudes, and standards that will guide their professional practice for years to come. (Bartell, 2005).

Recent trends in educational reform have focused on Professional Development Schools (PDS), where pre-service teachers spend much of their time in P-12 classrooms and work with collaborative teams of faculty from school districts and colleges of education (National Council for Accreditation of Teacher Education, 2001). Collaborative partnerships between higher education institutions and school systems allow for programmatic decisions to be made together (Johnson & Birkeland, 2003). The development of mentoring processes can be viewed as a shared responsibility of teacher preparation programs and districts that engage the mentor teachers in student teaching experiences. Both will benefit from the results.

While details of the mentoring programs must fit the needs of the student teachers and teachers that represent the school and university partners, program components should follow those outlined in the previous review of mentoring literature. Specific roles and responsibilities of the mentor should be clearly articulated to both partners, and attention should also be paid to the process of selecting those that will facilitate the mentoring role.

Mentor Characteristics

Referred to as the "human factor," the need for support from others is of primary importance to new teachers (Marable & Raimondi, 2007, p.30). Mentors should be selected based on their experience teaching the same grade level or content area. Having this common orientation is not only essential for the development of the student teacher who will become licensed to teach a particular age level or content area, but they are also more likely to be accepted as credible professionals to the student teacher (Wiebke & Bardin, 2009). Mentors should be respected by their colleagues and possess strong skills

in knowing what to teach and how to teach it. . Close monitoring of the mentor and student teacher match is preferable, with the assumption being that if there is philosophical and methodological agreement, there will be greater opportunity for success (Costa & Garmsten, 1993).

In Marable & Raimondi's 2007 study, they showed that personalities played a factor in the success of the mentors' and beginning teachers' work. Beginning teachers who participated in the study identified their mentor as their most significant source of support, with the exception of those who found a "mismatch of expectations," or were assigned to a mentor of a different certification area (p. 26). The mentors' enthusiasm to share ideas and their provisions of resource materials were also important to the beginning teachers.

Mentors provide emotional support; a safety zone created by their willingness to listen and be fully present with teacher candidates as they approach all of the first-time experiences that come with being new to the classroom. Mentors should possess strong listening and communication skills (Wiebke & Bardin, 2009). Their ability to acknowledge the beginning teachers' feelings, concerns, and questions, bolsters the confidence of the beginning teachers and provides practical approaches and an assuring sense that they are not in the job alone. Rowley (1999) identified six essential qualities of an effective mentor. They are:

(a) Committed to the role of mentoring

(b) Accepting of the beginning teacher

(c) Skilled at providing instructional support

(d) Effective in different interpersonal contexts

(e) A model of a continuous learner

(f) Communicator of hope and optimism

The formation of collegial relationship between mentors and student teachers during preparation, impacts their transition into teaching (Jorissen, 2002). Evidence suggests student teachers derive satisfaction and support from the relationship with their mentors. Mentors also begin to incorporate student teachers into the school's professional community. With an assurance of confidentiality in their relationship, student teachers are allowed to talk freely about their classroom experiences in a safe and nonthreatening environment. This helps them explore challenges they have experienced in the classroom without fear of being judged (Good & Bennet, 2005).

Lastly, mentors should volunteer for the assignment, rather than being delegated to perform the duties. Mentors must commit time for frequent meetings and discussions and maintain a willingness to support, motivate, and engage the student teachers (Weibke & Bardin, 2009). Those who are delegated to mentor a student teacher, especially if they are not able to commit time to the mentoring relationship, are less apt to support the student teacher and less likely to participate in activities that contribute to their own professional development as mentors.

It is not assumed that experienced teachers who serve as mentors to beginning teachers automatically know how to do so successfully. Mentors need training on what the specific aspects of mentoring are, and how to use effective strategies in their work with their student teacher. Mentoring training should be purposeful and intentional. The impact of the training on mentors should not be taken for granted or left to chance. Mentors' knowledge of the most effective mentoring practices enhances their ability to

effectively carry out the mentoring process (Hudson, 2007). Bacharach, Washut-Heck, & Dahlberg (2010) agree that professional training must occur for mentor teachers, and can benefit the student teachers as well. Including them both in training experience creates a solid partnership of interdependence between them.

Critical Components of Mentoring

Mentoring should be purposeful and intentional and its results not left to chance. Hudson, Skamp, & Brooks (2005) describe five factors of mentoring that are utilized by mentors to effectively support student teachers through the field experience process. The five mentoring factors are: personal attributes, system requirements, pedagogical knowledge, modeling, and feedback. In order for mentors to be effective in carrying out the identified responsibilities, they must understand the nature of the tasks and know how to implement each in their individual setting.

A. Personal attributes.

Good mentors possess a host of personal characteristics**.** They are competent educators with strong interpersonal skills. They are trustworthy and are committed to life-long learning (Moir, 2009; Udelhofen & Larson, 2002). Danin & Bacon (1999) support the mentors' need for effective communication through their study of beginning teachers, where they found that the beginning teachers' experience was more satisfying when their mentor was "trustworthy, supportive, and willing to listen" (p. 204).

Beck & Kosnick (2002) state that mentors need to be able to provide emotional support. In a study of 149 mentoring teams, Kilburg (2007) found that when new teachers did not receive emotional support from their mentor, they were "more apt to have anxiety, insecurity and lack of confidence" (p. 297). Mentors should encourage

student teachers to develop their own teaching style, even if it is different from their own (Pitton, 2006). Mentors are accepting and willing to seek ways to assist the student teachers, even when their own views may differ. Additionally, mentors help student teachers see things from different perspectives and provide student teachers with direction, while encouraging them to make decisions for themselves (Kilburg, 2007).

The mentors' success depends on the their ability to maintain a strong, trusting relationship with their beginning teacher (Moir et al., 2009). Glenn (2006) describes the relationship between mentors and student teachers as "give and take," where the mentors and student teachers care about each other personally as well as professionally (p. 5). Mentors are encouraging and collaborate in a flexible, supportive manner (Glenn, 2006). Without this kind of supportive relationship, the impact on the students' practice will be limited.

Finally, good mentors set an example for professionalism in teaching. Common dispositional characteristics identified by those who have had an opportunity to learn from mentors include authenticity, gentleness, enthusiasm, patience, consistency, and a positive attitude (Hurst & Reding, 2002).

B. System requirements.

Student teachers enter schools with little knowledge of the organization and the politics of school life. They need opportunities to gain theoretical and practical understandings of schools as organizations (Achinstein, 2006). They need help navigating the school site and the district. Mentors provide important information about daily routines of the school and cultural norms of the school community (Bartell, 2005). Mentors help student teachers understand the school culture by teaching about local

curricular approaches, resources that are available in the school, and how to sustain relationships with the principal and other professionals in the school. Mentors do not just focus on classroom-based learning; they also focus on organizational contexts in which classrooms are embedded (Achinstein, 2006). Mentors help student teachers read and navigate the new context in which they work. Student teachers often do not understand the complexities of the school's cultural context, particularly those that are not written down. Mentors help sort through misunderstandings that might occur.

Grossman & Thompson (2004) revealed that new teachers seek specific direction regarding technicalities such as curriculum, school policies, state standards, and student assessments. By focusing on instructional standards and curricular frameworks, mentors help student teachers adhere to district initiatives and regulate the quality of their teaching practices (Hudson, 2007). The standards-based teacher evaluation system is based on a common conception of teaching, developed from empirical and theoretical literature on effective teaching (Danielson, 1996; Danielson & McGreal, 2000). The mentoring process prepares student teachers for the formal evaluation that will appraise the student teachers' practice (Borman & Kimball, 2005).

C. Pedagogical knowledge.

Pedagogical knowledge refers to the level of a teacher's teaching skills. Assessing student teachers' pedagogical skills is usually operationalized by performance exams that are required for licensure. Danielson's Framework for Teaching (2007) is widely used as a way to assess teacher pedagogical knowledge. Based on a review and synthesis of empirical and theoretical research on what teachers should "know and be able to do in the classroom," Danielson's framework includes standards that focus on

behavioral responsibilities and competencies, rather than specific content or subject matter knowledge (p. 33). The framework provides a comprehensive assessment of teaching practice, yet is general enough to apply to all subject areas and grade levels (Strong, 2005).

Strong and Baron (2004) ascertain that the "only reliable way to measure the nature and quality of teaching practice is through classroom observation" (p. 51). During the observation process, mentors recognize and understand commonly identified elements of high quality instruction. Following the observations, mentors apply their expertise in instructional support for the student teachers by sharing resources that are specific to their content area, grade level, and/or teaching assignment (Moir et al., 2009).

D. Modeling.

Availability of modeling is extremely important to the development of student teachers (Darling-Hammond et al., 2005). Mentors are often viewed as instructional coaches and are models of best instructional practices themselves (Moir, 2009). They are experienced professionals who are regarded as master teachers by their colleagues (Trubowitz, 2004). Effective mentors provide evidence of their own achievement of outstanding teaching practices through modeling (Moir, 2009). Roehrig, Bohn, Turner, & Pressley (2007) confirmed that the practices of mentors who worked with successful teacher candidates were more consistent with modeling effective teaching practices themselves.

The quality of modeling and the opportunities for student teachers to practice are key to the success of student teachers (Darling-Hammond, 2006). The presence of mentors who model effective pedagogy is a central factor in whether student teachers can

enact such pedagogy themselves. Feiman-Nemser (2001) promotes the kind of mentoring that "cultivates a disposition of inquiry, focusing attention on student thinking and understanding" (p. 19). The effective mentor models these target behaviors and focuses on instructional issues that student teachers might not see by themselves (Strong & Baron, 2004).

E. Feedback.

The provision of frequent feedback is cited as the single, most important action that mentor teachers take when working with student teachers, and is the item most missed when it is absent (Rudney & Guillaume, 2003). Constructive feedback addresses technical issues of classroom management, discipline and behavior issues, grading, paper work, interactions with parents, lesson planning, resource acquisition, and other unique needs of student teachers (Evans-Andris et al., 2006). Mentors provide feedback in the form of written and oral comments and the feedback is presented with honesty and sensitivity (Glenn, 2006). Feedback is specific to the student teachers' needs and focused on their own readiness to discuss it. Most helpful is feedback that is descriptive, specific, and focused on teaching behaviors (Bartell, 2005).

Wang, Odell, and Schwill (2008) report that beginning teachers benefit when mentors include observations and discussions about their teaching. Nielsen, Barry, and Addison (2008) reinforce observation and feedback as particularly helpful to student teachers overall performance in the classroom. Pitton (2006) promotes the use of the observation cycle with pre- and post-conferencing as an effective process for gathering data about the student teachers' lessons. Danielson's framework is referenced to identify

what teaching practices should be used. Feedback helps student teachers reflect on strategies to strengthen their teaching and improve their students' learning.

Summary

Richard Ingersoll, sociologist and policy analyst, has received considerable attention for his work in education on teacher attrition. Smith & Ingersoll's study (2004) showed that as the number of components increased in the mentoring program provided for new teachers, the turnover rates decreased after one year of teaching. The study found the presence of mentoring, as a part of an induction system, had a statistically significant effect on teacher retention, as did the quality of the program and its location.

The importance of mentoring cannot be overlooked. Guidance and support for new teachers are needed from a more experienced mentor. Despite the complexities of learning to teach, student teachers are asked to assume the same responsibilities as experienced teachers and are expected to attain the same successful results (Bartell, 2005). Mentoring is collaboration that helps them examine how their teaching impacts their students' learning. It exposes them to new strategies, encourages them to share ideas, and promotes an increase in self-confidence in their own capabilities (Brock & Grady, 2006; Villani, 2009). Mentoring sets the norms, attitudes, and standards that will guide their professional practice for years to come (Bartell, 2005).

Without the necessary skills to help students reach higher academic standards, it will be difficult for new teachers to achieve the kind of results that policymakers, parents, and the general public demand. Many new teachers, as seen reflected in national attrition data, leave the profession before they have a chance to become highly effective. Some of these individuals may indeed still leave for compelling personal reasons, however, if the

reason for leaving is due to adverse working conditions, mentoring can make a difference (Strong, 2005).

This literature review was an examination of the role of mentoring in supporting new teacher growth and development. Very little has been written about the mentoring experience of student teachers, specifically. Findings from some of the literature suggest the needs of student teachers are similar to the needs of beginning teachers (Pitton, 2006). The methodology in chapter three will describe how this study assessed the student teachers' perceptions of the impact mentoring had on their student teaching experience.

Chapter III

Methodology

In this study of student teachers' mentoring experience, the responsibilities of the mentor teacher are described as five factors, outlined by Hudson (2007). As stated in chapter 2, the mentor teachers' application of these five factors during their work with student teachers has a positive impact on the initial success of the student teacher (Cartwright, 2008). This mixed-methods study determined the impact of mentoring on the growth and development of student teachers from Minnesota State University, Mankato. The study measured the impact of the five mentoring factors in co-teaching and non-co-teaching student teaching experiences and compared the overall difference in measurement between the co-teaching and non-co-teaching student teaching groups.

This chapter will begin with a review of the research problem and research questions. Following the research questions, the subjects of the study will be described as well as the procedures that were used to gather and analyze data. The chapter will conclude with a summary of the methods.

Research Problem and Questions

Recent trends in educational reform have focused on Professional Development Schools (PDS), where pre-service teachers spend much of their time in P-12 classrooms and work with collaborative teams of faculty from school districts and colleges of education (National Council for Accreditation of Teacher Education, 2001). Formal PDS collaborations between the College of Education at Minnesota State, Mankato and eight public school districts have resulted in the implementation of the co-teaching student

teaching model for all student teachers that are placed at a PDS site for their student teaching assignment.

Although researchers have demonstrated that mentoring correlates with the retention of new teachers in the profession of teaching (Strong, 2005), there is less evidence of the impact that mentoring has on the student teachers, according to the perspectives of the student teachers themselves. The following two research questions guided this research:

1. What are student teachers' perceptions of the mentoring factors that contributed to success in their student teaching experience?
2. What are the differences between the perceptions of student teachers that are in a co-teaching placement versus a non-co-teaching placement?

Subjects

The perceptions of student teachers that were assigned to a mentor teacher during a 16-week student teaching experience were obtained. All of Minnesota State University, Mankato's student teachers during the 2010-2011 school year were invited to complete the Mentee Perception of Student Teaching (MPST) survey upon conclusion of their student teaching semester (see Appendix A).

In order to compare and contrast the perceptions of student teachers who were placed in a PDS district where co-teaching is required, versus those who were placed in a non-PDS district where co-teaching is not required, the student teachers were categorized into two groups: co-teaching student teachers and non-co-teaching student teachers.

Co-teaching student teachers participated in a one-day seminar along with their mentor teacher, prior to the start of the co-teaching semester. During the seminar, the

student teacher and mentor were presented with the following topics that they utilized during the semester:

- Six co-teaching strategies for lesson delivery.
- Establishment of a trust-based relationship.
- Awareness of personality differences through Personality Colors (Ritberger, 2000).
- Lesson development and short- and long-term planning.
- Pre- and post-observation processes.
- Provision of written and oral feedback.

The second group of non-co-teaching student teachers worked with mentor teachers that determined their own strategies for supporting the student teachers. Mentoring approaches varied for the non-co-teaching student teachers, based on the prior experiences of the individual teachers who served as mentors to the student teachers. The mentors determined the rate at which the student teachers planned and implemented lessons in the classroom over the course of the semester.

All student teachers were placed in locations according to their content area preparation in elementary education, secondary education, or special education. Placement considerations included the number of and location of classrooms that were available during the semester, and the mentor teachers who volunteered to work with them. Student teachers were able to request a preferred geographical area for their student teaching placement but were not allowed to self-select their placement site. During the fall 2010 semester, a total of 138 student teachers were invited to participate in the study; 51 of them were placed in co-teaching assignments in PDS schools, and 87

were in non-co-teaching student teaching placements in non-PDS schools. During the spring 2011 semester, a total of 205 student teachers were invited to participate in the study; 100 of them in co-teaching placements in PDS schools, and 105 in non-co-teaching placements in non-PDS schools. The total number of student teacher participants during 2010-2011 was 343. 151 student teachers were placed in co-teaching, PDS schools, and 192 were placed in non-co-teaching, non-PDS settings.

Instrumentation

Dr. Peter Hudson, an educational researcher at Queensland University of Technology in Brisbane, Australia, developed The Mentee Perception of Student Teaching survey (MPST) (Hudson et al., 2005). Hudson's instrument adheres to the mentoring components also identified in U.S. literature and it reflects the perceptions of the student teacher in regard to the five identified factors of mentoring: personal attributes, system requirements, pedagogical knowledge, modeling, and feedback.

Out of the total number of student teachers, 218 responded to 34 statements, using a five-point Likert scale, consisting of "Strongly Disagree, Disagree, Neutral, Agree, and Strongly Agree." In addition, student teachers answered six, open-ended questions about their mentoring experience during their student teaching.

Hudson et al., (2005) have established reliability and validity of the MPST survey, thus providing credibility to the five mentoring factors, which are foundational to this study. Hudson provided verbal and written approval for the use of the MPST survey in this research project (see Appendix B). Permission was also received from the director of the Office of Field and International Experience to implement this survey with 2010-2011 student teachers (see Appendix C).

Procedure

The Institutional Review Board at Minnesota State University, Mankato, granted approval of the research project (see Appendix F). A 30-minute presentation of the nature of the study was provided to student teachers at the final student teaching seminar in December 2010 for fall semester student teachers, and in May 2011 for spring semester student teachers. Both seminars were held at Minnesota State University, Mankato. When meeting face-to-face with the student teachers, issues of confidentiality were raised. Students were not required to complete the survey, but they were told that by doing so, they will have served to inform the College of Education staff of their perceptions of their mentoring experience and will have prompted continuous improvement of the student teaching program in the future.

Quantitative and qualitative data were collected from the student teachers at the same setting. The student teachers completed the paper survey, articulating their demographic variables in the first section. These variables included age, gender, grade-level placement, content area taught, number of lessons taught, and school district placement information. In the second section of the survey, the student teachers circled their response to 34 Likert scale statements. Lastly, student teachers wrote answers to six, open-ended questions in section three of the survey. Surveys were collected immediately after the student teachers indicated they were finished.

Data Analysis

Co-teaching versus non-co-teaching student teaching placements were confirmed by comparing the students' tech identification number against 2010-2011 placement records from the Office of Field and International Experience. In this study, quantitative

and qualitative data were collected in separate sections of the MPST survey, but the analysis and interpretation phase of the study combined both the quantitative and qualitative elements for convergence among the results (Creswell, 2003).

Quantitative Data

Hoy (2010) identified the *t*-test as an appropriate statistical procedure when the independent variable has two categories and the dependent variable is continuous. In this study, the independent variables were co-teaching and non-co-teaching student teaching placements, while the dependent variable was the student teachers' perceptions of their mentoring experience. SPSS was used to calculate mean scores for each of the 34 survey items. The results were reported descriptively according to the five mentoring factors that were embedded within the statements on Hudson's MPST survey. Also obtained was a cumulative score for this section of the survey and it was used to compare the mean difference between the co-teaching and the non-co-teaching groups. The level of significance to which this study was held, is $<.05$.

Qualitative Data

The qualitative component of this study provided additional clarification of issues surrounding the student teachers' mentoring experience. The researcher's goal was to fully understand the essence of their experience by collecting and analyzing the personal descriptions the student teachers provided in the six, open-ended questions. Constant-comparative methodology was used to interpret the student teachers' responses about their work with their mentor. Surveys were examined one at a time using selective coding. Hudson's five mentoring factors served as the coding categories.

The frequency of comments pertaining to each of the five mentoring factors was considered by comparing the responses from the co-teaching and non-co-teaching student teachers. A chi-square test was used to compare the frequency of comments *within* the two student teacher groups and to assess the degree of difference *between* the two groups of student teachers.

Summary

Cartwright (2008) stated that survey research generates useful information regarding attitudes, opinions, and practices that influence educational policy and reform efforts. This chapter by Cartwright presented justification for the use of the MPST survey to collect student teachers' perceptions regarding their mentoring experience in student teaching. The researcher used a *t*-test to assess the quantifiable difference between the two student teaching groups and compared this difference to what might be expected by chance. Selective coding was used with the qualitative data in order to assess the student teachers' perceptions of the impact of the five mentoring factors and understand the differences found between the co-teaching and non-co-teaching student teacher groups. The themes or categories that emerged from the comparison of all of the data in this study provided a comprehensive picture of the student teachers' perceptions of their mentoring experience. In the next chapter results obtained by the administration of the MPST survey are presented.

Chapter IV

Findings

This research aimed to articulate student teachers' perceptions of their mentoring experiences in student teaching, and to link it to the five factors of effective mentoring outlined by Hudson (2007). For this study, 218 student teacher perceptions of mentoring were obtained using the Mentoring Perceptions of Student Teaching (MPST) instrument's five-point Likert scale (i.e., strongly disagree = 1, disagree = 2, uncertain = 3, agree = 4, strongly agree = 5, see Appendix 1). Incomplete responses were extrapolated using a linear trend of the subjects' other responses (Kuzma & Bohnenblust, 2001). Data were then subjected to an ANOVA (Hair, Anderson, Tathan, & Black, 1995; Kline, 1998) and mean scale scores and descriptive statistics were derived through SPSS 16. The student teachers' responses represented 64% of the total student teaching cohort in 2010-2011 at Minnesota State University, Mankato. All responses were gathered from student teachers at the conclusion of their student teaching experience.

The five mentoring factors include: personal attributes, system requirements, pedagogical knowledge, modeling, and feedback. Items on the instrument have been empirically justified (Hudson et al., 2005) and data from this research project supports the reliability of the instrument in the United States context. Data was subjected to confirmatory factor analysis, which defined a relationship between the items assigned to each factor. Cronbach alpha scores greater than .70 are considered acceptable for internal reliability of each factor (Peterson, 1994). Personal attributes, system requirements, pedagogical knowledge, modeling, and feedback had Cronbach alpha scores

of .93, .81, .95, .91, and .91, respectively with mean scale scores ranging from 4.20 to 4.60. Correlations and co-variances of the five factors were statistically significant ($p < .001$). Eigen values greater than one also indicate a relationship between factors and associated items and the Eigen value range for this study was 2.19 – 7.53. This was further signified by the percentage of variance attributable to each factor. For instance, there was 73% of variance assigned to the factor personal attributes; the percentage of variance range for all factors was 64%-73% (See Table 1).

Table 1

Confirmatory Factor Analysis for the Five Factors

Mentoring Factors	Cronbach Alpha	Eigen Value	% of Variance	Mean Scale Score	*P* Value
Personal Attributes	.93	4.39	73	4.59	< .001
System Requirements	.81	2.19	73	4.20	< ,001
Pedagogical Knowledge	.95	7.53	68	4.39	< .001
Modeling	.91	5.12	64	4.60	< .001
Feedback	.91	4.27	71	4.30	< .001

Note. p <.001 result is highly significant (Kuzma & Bohnenblust, 2001).

Results of data analysis were used to address two research questions:

1. What are student teachers' perceptions of the mentoring factors that contributed to success in their student teaching experience?
2. What are the differences between the perceptions of student teachers that were in a co-teaching placement versus a non-co-teaching placement?

Research Question One

The five factors are articulated well in the literature and are substantiated by results of this study. Because the survey was developed in Australia, the MPST instrument was altered for use of standardized American English. For example, in item 10, the word "timetabling" was replaced with "scheduling" because it more adequately signifies the organizational pacing of the lesson. In item 25, "aims" was replaced with "goals" since American educational systems more often references instructional outcomes as goals. The developer of the survey instrument vetted these modifications.

The 218 student teacher respondents (166 female; 52 male) provided descriptors that allowed for confirmation of the type of placement in which they were mentored (i.e. co-teaching or non-co-teaching classrooms). Data on each of the five factors and associated attributes and practices were gathered through quantitative and qualitative responses at the same time, upon conclusion of the students' 16-week student teaching semester.

Quantitative Data and the Five Factors for Effective Mentoring

Descriptive statistics were calculated on the five factors using SPSS 16. Mean scale scores on student teacher perceptions (n = 218) of their mentors' practices fell within a 0.45 range (4.18 - 4.63; SD 0.48 - 0.79). Student teachers perceived the mentoring factor, modeling, as the most used practice of these mentors. Personal attributes and pedagogical knowledge were also perceived by student teachers to be employed by the mentors. Although still within close limits to the other factors, student teachers pointed out that their mentors' focus on feedback and system requirements were not as apparent as the previously mentioned factors (see Table 2).

Table 2

Descriptive Statistics for Five Factors (N = 218)

Factor	Co-teaching (n=108)		Non-co-teaching (n=110)	
	Mean scale score*	Std. Deviation	Mean scale score*	Std. Deviation
Personal Attributes	4.56	0.62	4.56	0.68
System Requirements	4.18	0.79	4.20	0.76
Pedagogical Knowledge	4.41	0.69	4.38	0.70
Modeling	4.63	0.48	4.56	0.57
Feedback	4.29	0.74	4.29	0.79

The following summaries provide further insight into specific data on the attributes and practices associated with each factor.

1. Personal attributes.

Student teachers reported about their mentors' personal attributes on the MPST instrument. The mean item score range was 4.43 to 4.72; SD range: 0.66 to 0.81 (see Table 3 for percentage rank order). Student teachers indicated that 95% of their mentors were supportive of them in student teaching and almost as many student teachers (93%) felt comfortable talking with their mentor. 92% of the mentors instilled positive attitudes and confidence in their student teachers and listened attentively to them. Although the lowest percentage of student teacher perceptions in this factor related to the mentor teachers assisting the student teachers in reflecting, this item was still identified as a practice used by mentors by 90% of the student teachers.

Table 3

Personal Attributes

Mentoring practices	%*	M	SD
1. Supportive	95.5	4.72	0.66
17. Comfortable in talking	93.1	4.62	0.78
22. Instilled positive attitudes	92.2	4.58	0.77
26. Instilled confidence	92.2	4.59	0.78
31. Listened attentively	92.2	4.54	0.75
23. Assisted in reflecting	90.8	4.43	0.81

Note. %*, Percentage of mentees who either 'agreed' or "strongly agreed' their mentor provided that specific mentoring practice

2. System requirements.

Items displayed under the system requirements factor had little variance, but remained some of the lower scores received in the study. Student teachers indicated 85% of the mentors discussed school policies and the goals for teaching, while 82% of the mentees reported their mentors outlined the curriculum (mean item score range: 4.10 to 4.25; SD range: 0.89 to 0.93, see Table 4).

Table 4

System Requirements

Mentoring Practices	%*	M	SD
25.Discussed aims (goals)	85.5	4.25	0.93
4.Discussed school policies	85.0	4.23	0.90
11.Outlined curriculum	82.2	4.10	0.89

Note. %*, Percentage of mentees who either 'agreed' or "strongly agreed' their mentor provided that specific mentoring practice.

3. Pedagogical knowledge.

94% of the student teachers claimed their mentors assisted with classroom management. Almost as frequently, 92% of the mentor teachers provided their perspectives about pedagogical knowledge to the student teachers. Mentors' assistance

with planning (91%), and assistance with teaching strategies (90%), were the remaining items reported over 90% of the time. Four additional items pertaining to pedagogical knowledge resulted in data ranging from 87.2 % to 89.5% (mean item score range: 4.31 to 4.36; SD range: 0.86 to 2.81, see Table 5). The four items were as follows: discussion about assessment and implementation, guided lesson preparation, discussions about problem solving, and discussions about content knowledge. The two lowest perceived pedagogical knowledge items, both finding 86.8% of the student teachers either agreeing or strongly agreeing that this practice was implemented, pertained to the mentors' discussions of questioning techniques with the student teacher (mean score 4.29; SD 0.89) and assisting student teachers with scheduling (mean score 4.27; SD 0.89).

Table 5

Pedagogical Knowledge

Mentoring Practices	%*	M	SD
6. Assisted with classroom management	94.1	4.55	0.77
30. Provided viewpoints (perspectives)	92.2	4.48	0.80
14. Assisted in planning	91.8	4.46	0.77
8. Assisted with teaching strategies	90.0	4.46	0.81
32. Discussed assessment	89.5	4.36	0.87
24. Discussed implementation	89.5	4.39	0.82
3. Guided lesson preparation	88.6	4.31	0.85
27. Discussed problem solving	87.7	4.39	0.88
21. Discussed content knowledge	87.2	4.31	0.86
18. Discussed questioning techniques	86.8	4.29	0.89
10. Assisted with timetabling (scheduling)	86.8	4.27	0.89

Note. %*, Percentage of mentees who either 'agreed' or "strongly agreed' their mentor provided that specific mentoring practice

4. Modeling.

The modeling factor received greater than a 90% agreement response on all quantifiable items. Student teachers indicated that a majority of mentors modeled teaching practices. Modeling effective teaching and rapport with students were perceived

to be the most representative practices of the mentors at 96% and 95% respectively, while the mentors demonstration of hands-one learning was at 94%. Mentors' modeling of classroom management and well-designed lesson plans were lower on the student teachers' responses, as was the student teachers' perceptions of their mentor's display of enthusiasm (all at 93%.). The lowest score within the modeling factor pertains to the mentors' use of curricular language (standards). Student teachers perceived that this occurred 90% of the time. Mentors' reference to standards was also the lowest reported score in the system requirements factor. Table 6 reflects the data associated with the modeling factor.

Table 6

Modeling

Mentoring Practices	%*	M	SD
15. Modeled effective teaching	96.8	4.72	0.55
5. Modeled teaching	96.3	4.70	0.63
7. Modeled rapport with students	95.9	4.66	0.63
19. Demonstrated hands-on	94.1	4.56	0.70
9. Displayed enthusiasm	93.6	4.63	0.71
12. Modeled classroom management	93.6	4.62	0.69
29. Modeled a well-designed lesson	93.2	4.50	0.69
2. Used curriculum language (standards)	90.9	4.38	0.76

Note. %*, Percentage of mentees who either 'agreed' or "strongly agreed' their mentor provided that specific mentoring practice

5. Feedback.

The fifth factor, feedback, showed the lowest scores of implementation on the MPST instrument, as compared to the other four factors. The student teachers perceived that only 71% of the mentors reviewed the student teachers' lesson plans (mean score 3.84; SD 1.03). Also significant, is that although 92% of the student teachers reported their mentors observed their teaching, only 79% of the student teachers indicated they

received written feedback on their teaching (mean score 4.14; SD 1.04). In stark contrast, 92% of the student teachers agreed or strongly agreed that they received oral feedback of their teaching (mean score 4.47; SD 0.83). As Table 7 shows, 86% of the student teachers felt that their mentor teacher articulated expectations during this experience, and 91% noted their teaching was evaluated. Mean scores for these items were 4.30 and 4.46, respectively and standard deviations 0.97 and 0.86 respectively.

Table 7

Feedback

Mentoring Practices	%*	M	SD
34.Observed teaching	92.7	4.54	0.73
16.Provided oral feedback	92.7	4.47	0.83
13.Provided evaluation on teaching	91.3	4.46	0.86
33.Articulated expectations	86.3	4.30	0.97
20.Provided written feedback	79.9	4.14	1.04
28.Reviewed lesson plans	71.2	3.84	1.03

Note, %*, Percentage of mentees who either 'agreed' or "strongly agreed' their mentor provided that specific mentoring practice.

Qualitative Data

Qualitative data provided additional insights into the distinctions the student teachers made pertaining to each of the mentoring factors. Qualitative data was derived from open-ended questions on the survey for which student teachers reported the mentoring strategies that helped them feel successful in student teaching (see Appendix A). Respondents were also able to identify those things that their mentor could have done to help them feel more successful and ways the student teachers, themselves, might have helped their mentor be supportive of their learning experience. Within the open-ended responses, the researcher was able to identify specific aspects of the student teaching experience that related to the five factors. Of the 218 respondents, 207 student

teachers offered a total of 835 anecdotal statements, 567 of which, after being reviewed by the researcher, were coded according to language gleaned from mentoring literature (see Appendix E for coding keys). Data reduction was employed to discard comments that did not align with the coding categories in the selective coding process (Miles & Huberman, 1994). Thus, the comments that student teachers provided which did not pertain to the five mentoring factors were eliminated.

Qualitative data pertaining to factor 1: personal attributes.

Student teachers offered 161 anecdotal comments pertaining to the personal attributes of their mentor teachers. Most comments were favorable. Only four comments were critical of the mentors' practice. Personal attributes include the kind of characteristics and qualities the mentors possessed such as being supportive, encouraging, flexible, and having a positive attitude. Trustworthiness and having interpersonal skills that develop relationships were also indicators of mentors' personal attributes. Examples of student teachers' favorable comments about their mentors' personal attributes included:

- "I know she cared about me."
- "She was personable and easy to talk to."
- "We could tell each other exactly what we thought."
- "I felt like I could talk about everything."
- "We expressed concerns together professionally."
- "We were comfortable discussing anything."
- "She made me feel important."
- "We became trusting friends."

- "My mentor was supportive, encouraging and thoughtful."
- "I felt I could come to her with any question or problem."
- "She was patient and approachable."
- "She had my back 100 percent of the time."
- "My mentor boosted my confidence."

In four instances, student teachers noted when the desired personal attributes of the mentor were absent. Documented examples were provided by student teachers, such as when the student teachers were intimidated by their mentor or when their mentor was not approachable, but rather, very controlling. Lack of encouragement was also an indicator of this lack of personal attributes. One student commented, "I felt like I had no support from my mentor."

Qualitative data pertaining to factor 2: System requirements.

System requirements included examples like curriculum, school/district policies, standards, student learning outcomes, and other mandatory requirements. Additionally, the culture of the school, organizational context, and technical aspects of the evaluation system were described in this category. There were 67 comments from student teachers about system requirements, with favorable examples identified such as being involved in every aspect including conferences and grading, and the mentors' provision of resources and information about students.

Student teachers also identified ways they felt they might have been more successful, and offered comments pertaining to ways their mentors could have contributed more to their success. These types of critical comments include:

- "I could have been more successful learning the school's grading and attendance

policy."

- "The teacher could have trusted me more with entering grades."
- "I could have asked more questions about daily routines, rules, and assessments within the school."
- "I would have liked more tips on faculty infrastructure and school policies."
- "More on assessments would have been nice."
- "Teacher could have provided me with school handbook up front."
- "I wish I had asked my teacher more about setting up a classroom at the beginning of the year."

Qualitative data pertaining to factor 3: Pedagogical knowledge.

99 anecdotal comments by student teachers pertained to the pedagogical knowledge shared by the mentor. Of those 99, nearly one-third of them (n = 32) were specifically about classroom management. In addition to classroom management, pedagogical knowledge includes the understanding of teaching strategies and implementation techniques such as questioning, assessment, and problem solving. This area includes mentors' guidance with preparation and planning. Favorable responses by student teachers included comments about their mentor such as:

- "She supported me by giving examples of what she had done in the past."
- "There was lots of advice on teaching strategies, transition tips, and classroom management."
- "We were able to discuss aspects that were positive as well as room for improvement for myself and the students."
- "She suggested ways I could alter lessons to improve, and provided graphic

organizers."

- "Gave me advice or suggestions before I taught."
- "We created classroom rules together and discussed things before a lesson."
- "She helped with time management as well as holding students responsible for their expectations."
- "Discussed strategies on how to build positive rapport with all students."

Also noted were instances where student teachers were critical of the mentors' practice in regard to pedagogical knowledge. Examples include:

- "I could have gotten more help on classroom management as well as organization techniques."
- "I wish I would have gotten more direction on discipline procedures."
- "Communication about teaching was not present."
- "Planning lessons with me would have supported me better."

Qualitative data pertaining to factor 4: Modeling.

The modeling factor had the smallest frequency of anecdotal comments offered by student teachers (n = 7), two of which indicated mentors provided, "Lots of modeling to display appropriate teaching methods," and one expressing the desire for even more models during the experience. The modeling factor would include the mentors' demonstration of rapport, planning, teaching, classroom management, effective strategies, and hands-on learning.

Qualitative data pertaining to factor 5: Feedback.

In contrast to modeling, the feedback category garnered the most anecdotal comments by student teachers (n = 233). 97 comments suggested that mentors provided

feedback for their student teachers. One student teacher noted how she herself contributed to success by always making sure to be open to feedback and striving to utilize it. The types of favorable feedback student teachers reported they received included:

- Verbal feedback
- Feedback after each class
- Honest; told me how to change for the better
- Observing and commenting on my lessons
- Positive feedback; suggested things I could try
- Discussed my effectiveness after observations with constructive criticism
- Discussed lessons afterwards for reflection
- Observation forms
- Timely feedback
- Written comments on a note pad, scores, reflection on test scores
- Detailed feedback
- Feedback notebook

Critical statements were made by student teachers that represented their desire to have received more feedback from their mentors. These types of comments were nearly as prevalent (n = 62) in the student teachers' open-ended responses. Examples of these critical statements are listed below:

- "Teacher could have written down more feedback."
- "Would have liked more communication of what went well and what did not go well."

- "Could have been more constant with feedback."
- "Teacher would observe one class then leave for the rest of the day."
- "Would have been nice to have a copy of the observation to keep for the future."
- "Would want more written feedback about specific areas for improvement."
- "Would like her to give me more comments on what I could grow further in."
- "Constant negative comments were not constructive."

Research Question Two

Research question 2 was designed to compare the perceptions of student teachers that were placed in co-teaching classrooms versus those who were placed in non-co-teaching classrooms. Of the total number of student teachers who completed the MPST survey (n = 218), half of them were co-teaching student teachers (n = 108) and the remaining half were non-co-teaching student teachers (n = 110).

Quantitative data and group comparisons.

T-tests for co-teaching and non-co-teaching student teachers showed no statistical significance for any of the factors using $p < .05$ level of significance (see Table 8). However, a trend that emerged from the data showed that the mean was generally higher for the co-teaching group versus the non-co-teaching group. The only exception is the system requirements factor, which showed a higher mean score for the non-co-teaching group (4.20) compared to the co-teaching group (4.18.)

Table 8

Independent Samples t-Test by Factors

Factor	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	*t*	df	Sig (2-tailed)	Mean Diff.	Std. Error Diff.	95% Confidence Interval of the Difference	
PA* equal var. assumed	.064	.800	-.446	216	.656	-.03947	.08860	-.21410	.13515
PA* equal var. not assumed			-.446	214.95	.656	-.03947	.08852	-.21396	.13502
SR*equal var. assumed	.230	.632	.189	216	.851	.01991	.10552	-.18806	.22788
SR* equal var. not assumed			.189	215.475	.851	.01991	.10555	-.18813	.22795
PK* equal var. assumed	.054	.816	-.310	216	.757	-.02934	.09474	-.21606	.15739
PK* equal var. not assumed			-.310	215.953	.757	-.02934	.09473	-.21606	.15739
M* equal var. assumed	4.321	.039	-.896	216	.371	-.06480	.07230	.20729	.07770
M* equal var. not assumed			-.898	211.192	.370	-.06480	.07218	.20709	.07749
F* equal var. assumed	.096	.757	-.065	216	.948	-.00678	.10440	.21255	.19900
F* equal var. not assumed			-.065	215.731	.948	-.00678	.10435	.21245	.19890

Note. *PA=Personal Attributes, SR=System Requirements, PK=Pedagogical Knowledge, M=Modeling, F=Feedback

Pertaining to specific items on the MPST survey, 29 out of 34 questions had a higher mean score for the co-teaching group. Six individual items on the MPST survey showed significant values for Levene's test for Equality of Variance. The items were:

- Item 1, supportive of me for teaching (p = .049)
- Item 5, modeled teaching (p = .002)
- Item 7, had a good rapport with students (p = .031)

- Item 9, displayed enthusiasm for teaching (p = .010)
- Item 12, modeled effective classroom techniques (p = .034)
- Item 15, effective at teaching (p = .002)

Looking more deeply into these specific items by considering qualitative evidence allowed the researcher to triangulate the data for more specificity. The mentoring factors for the six significant values obtained in this study are: personal attributes (item 1) and modeling (item 5, 7, 9, 12, and 15). Appendix D provides a listing of the survey items associated with each of the five mentoring factors.

Pertaining to the first item, supportive of me for teaching, quantitative data showed a stronger agreement from the co-teaching group than the non-co-teaching group. Qualitative data, however, does not indicate the same type of discernment between the two groups. According to the frequency of comments about mentor support, there were 161 anecdotal comments by student teachers, 75 from co-teaching student teachers and 86 coming from non-co-teaching students. Actual statements, however, were quite similar. Example comments made by non-co-teaching student teachers were, "I felt my cooperating teacher did a great job supporting me throughout my student teaching experience," and "She was constantly supporting my development.**"** These statements are not unlike those from co-teaching student teachers, such as two who wrote, "My cooperating teacher was very supportive and respectful," and **"**My mentors were wonderfully supportive of my learning."

Pertaining to the other five survey items with significant values, a more distinctive comparison occurred. These five items all represent the modeling factor and emerged stronger in the co-teaching group. Qualitative data supports this finding, despite

an overall low frequency of comments coded in this category (co-teaching n = 4, non-co-teaching n = 3.) Example co-teaching comments pertaining to modeling were: "She modeled teaching well." [She was] very wise and experienced," and "Lots of modeling was shown to display effective strategies." In stark contrast, from the non-co-teaching group, was one comment by a non-co-teaching student teacher who summed up the student teaching experience by saying, "My teacher said to me at the beginning of my experience, "Don't do what I do, do what I tell you to do."

Only five questions on the survey produced lower mean scores for the co-teaching group versus the non-co-teaching group, and each of the five items represented one distinct factor (4-system requirements, 19-modeling, 20-feedback, 26-personal attributes, and 30-pedagogical knowledge). These items did not show significant values for Levene's test for Equality of Variance; however, they add credence to the researcher's consideration of the open-ended responses by student teachers and how the qualitative data provided supporting evidence of the student teachers' perceptions of their mentoring experience.

In order to analyze the qualitative comments provided for student teachers in this study, the researcher considered the frequency of comments that were coded according to the five mentoring factors. Analyzing the data by running a chi-square test (rather than a one-way ANOVA) proved to be more appropriate due to the factors containing more than two categories. Cramer's V statistic showed no statistical significance across the five factors between the co-teaching group and non-co-teaching groups. However, one trend in the data showed a difference in frequency that was approaching 5% significance in the system requirements factor (p = .08). 45 comments pertaining to system requirements

were made by co-teaching student teachers, whereas 22 comments were made by non-co-teaching student teachers about the same factor. Out of the 67 comments total, only 11 expressed a favorable response from student teachers. The remaining 56 comments were of critical nature, therefore showing that when it came to learning about education system requirements, student teachers from both groups perceived they received less than desired experiences with school/district policies, grading standards, student learning outcomes, and other mandatory requirements such as school-wide assessments.

Summary

A review of the results for both research questions provided the researcher with specific data that supports the importance of the five factors of mentoring that were perceived by student teachers to have an impact on their success during student teaching. Quantifiable data obtained from the implementation of the Likert scale survey, showed reliability of these five factors and that the student teachers agreed, in most cases, the factors were evident in their experience with their mentors. Qualitative input from the student teachers provided additional clarity about the actual mentoring that the students experienced. In the final chapter, the findings of the study as well as future research recommendations will be made.

Chapter V

Discussion

Few studies in the field of teacher preparation address the perceptions of the mentoring experience from the perspective of the student teachers. Little research in the literature specifically addresses how experienced teachers mentor student teachers. The purpose of this mixed-methods study was to determine the ways in which student teachers perceived experiencing five factors of mentoring during their student teaching semester. In addition, a comparison was made to discern whether or not there was a difference between the perceptions of those student teachers who were placed in a co-teaching classroom and those whose experience was in a non-co-teaching setting.

This study captured the essence of the mentoring experience of student teachers that recently completed a 16-week student teaching assignment in public schools in Minnesota. Student teaching groups were equally divided between co-teaching and non-co-teaching classrooms for the student teaching semester. The Mentee Perception of Student Teaching survey was completed by 218 student teachers, on which they provided Likert-scale responses to 34 statements and anecdotal responses to six open-ended questions.

The resulting quantitative and qualitative data garnered through mixed-methods procedures provided the researcher an opportunity to interpret the findings of the cumulative group of student teachers as well as the difference between the co-teaching and non-co-teaching groups. Descriptive statistics were obtained using SPSS to find mean scores for the five factors of mentoring to which the MPST survey is aligned, including personal attributes, pedagogical knowledge, system requirements, modeling,

and feedback. Qualitative data provided supporting details of the student teachers' experience and through a frequency analysis of coded responses, a determination could be made about significant differences between the two student teaching groups.

The research questions were:

1. What are student teachers' perceptions of the mentoring factors that contributed to success in their student teaching experience?
2. What are the differences between the perceptions of student teachers that are in a co-teaching placement versus a non-co-teaching placement?

Summary of the Results

Triangulated data from the survey results suggested that the practices implemented by the mentor teachers were perceived to have supported the student teachers' development during student teaching and that these practices represented the five mentoring factors outlined in the literature. Although it is discernable which factors were perceived to be more prevalent than others by ranking the mean scale scores from highest to lowest (modeling, personal attributes, pedagogical knowledge, feedback, and system requirements) the results do indicate that, as a whole, effective mentoring was present for the subjects from both co-teaching and non-co-teaching groups in this study.

Looking more specifically at the individual mentoring factors and at the data that distinguishes the co-teaching mentoring experience from the non-co-teaching mentoring experience, five themes emerged. Combining both reference points offers implications for teacher preparation programs to consider when arranging experiences for student teaching requirements.

Emergent Themes

The first theme pertains to modeling. The highest mean scale score for the individual mentoring factors in both groups was modeling, which reflected that the greatest percentage of students agreed or strongly agreed that modeling occurred by their mentor teacher. Interestingly, modeling had the fewest number of anecdotal comments made by student teachers in the qualitative component of the survey.

The importance of modeling cannot be overlooked. Portner (2005) references the work of Lipton and Wellman's learning-focused relationships and describes modeling as important as advice giving by mentors. Modeling strategies and practices transmutes to other factors such as pedagogies of classroom management, and system requirement protocols such as assessment and grading. In addition, the teachers' display of efficacious dispositions, such as a positive attitude toward teaching, can undoubtedly be considered as one of the essential personal attributes of a mentor. Modeling provides student teachers with visual and aural demonstrations of how to teach (Hudson, Usak, & Savran-Gencer, 2009). Potentially, a misinterpretation by student teachers may exist as to what is actually being modeled by the mentor teacher, particularly if the mentor teacher is not overt about the strategy or practice that is being demonstrated. Mentors who intentionally use think-aloud strategies and provide clarifying comments, will help the student teachers internalize the substantiation for replicating the modeled practice.

The second theme that emerged from this study is that, based on the frequency of comments, classroom management was a prevalent concept on the minds of the student teachers. This concept is frequently documented in the literature as one of the top need areas of beginning teachers. It is often the source of their greatest frustration and stress, and is the number one reason many teachers leave the profession (Brock & Grady, 2006).

In this study, the frequency of qualitative responses by student teachers pertaining to their mentors' assistance with classroom management was significant. One third of the comments were specific to the mentor teachers' assistance with classroom management, yet certain student teachers pointed out that even more assistance would have been helpful. The development of management strategies for teachers is a continuous process of learning and one for which even experienced teachers express a desire for improvement. Hudson's survey aligns classroom management to the pedagogical knowledge factor and, with a 94% agreement rate, co-teaching and non-co-teaching student teachers in this study perceived this to be significantly impactful on their experience.

The third theme that emerged from this study pertains to the lower level of agreement by the student teachers that the provision of feedback by their mentor teachers occurred. For both groups, the feedback factor received the second lowest mean score compared to other factors and**,** qualitatively, feedback was the factor that was most often referenced by student teachers. Converse to their reference about oral feedback, the responses that were most noted by student teachers pertained to the mentor teachers' provision of written feedback. They also noted their mentor teachers' review of their lesson plans.

Those who work in teacher preparation might assume that mentor teachers consistently review the student teachers' lesson plans in advance of lesson delivery. Evidence from this study suggests that this may not always be the case. Mentors should be cautious about making presumptions about the student teachers' ability to adequately prepare for lesson delivery without review of the plans in advance. Student teachers may

not have the depth of understanding about how curricular content has been aligned, and/or scaffolded according to the prior lessons for which the student teacher may not have been present. The learners in the classroom are ultimately the individuals most impacted by the delivery of that lesson and it must be ensured that they have the highest quality lesson possible. In addition, lesson plan review is one of the first opportunities for which student teachers begin the essential process of reflection on practice. Feedback offered by mentors will serve to guide the student teachers to a greater consciousness about lesson planning and how to apply their reflections to future lesson development.

Pertaining to the type of feedback provided by mentor teachers, oral feedback is helpful, but as the quantity of comments increases as well as the complexity of feedback intensifies, it becomes more likely that student teachers will not internalize the feedback to a significant degree. Portner (2005) suggests feedback is most meaningful when it is specific to two behavioral areas – behavior to reinforce and behavior to "grow with" (p. 33). Written feedback becomes lasting feedback on which student teachers can reflect in the future, further enhancing their subsequent lesson preparation without having to recall new applications from memory alone. Clearly articulate expectations for mentor teachers and student teachers pertaining to lesson planning and the provision of feedback about the lessons will be most effective when provided at the onset of the student teaching experience.

The fourth theme that emerged from this study pertains to the personal attributes of the mentors. The level of support offered to the student teachers by their mentors was most noteworthy. According to Reiman, Corbell, Horne, & Walker-DeVose (2010), support is a distinct workplace factor associated with beginning teachers' perceptions of

success. Although a high percentage of student teachers in this study agreed that their mentors were supportive of their teaching, even one negative response should prompt a high level of concern. For example, one student teacher in this study commented, "I felt like I had no support from my mentor." Preparers and developers of student teachers and mentor teachers must delve more deeply into the relationship between them to ensure that the element of support exists. Foundational to the supportive relationship is the establishment of trust and rapport. The New Teacher Center, dedicated to improving student learning by accelerating the effectiveness of new teachers, believes that the success of mentors depends on their ability to forge a strong, trusting relationship with beginning teachers, and that if beginning teachers do not have trust, the impact on their practice will be limited (Moir et al., 2009).

Finally, the system requirements factor showed the lowest percentage of agreement by student teachers that they received mentoring in this area. Although mean scale scores still fell between 4.10 and 4.25, it was the one factor that showed values closely approaching significance, when comparing co-teaching and non-co-teaching groups. The three key items in this mentoring factor reveal the mentors' practice of outlining curriculum, their discussion of school policies, and the reference to the aims/goals of the school/district. Comments by student teachers in this study suggest these discussions were not as highly prioritized by their mentors as the other mentoring factors. In addition, the student teachers that were placed in non-co-teaching classrooms were less likely to receive information in this area. One reason might be the mentor teachers' prioritization of roles and responsibilities with student teachers and the necessity to balance the myriad of expectations placed upon them. Mentors may view

orientation to the school and/or district policies as an issue of employed teachers and not necessarily critical to the success of student teachers, for whom placement in that school is temporary. Fundamentally, the link between a grade level or departmental curriculum and the larger aims/goals of the system should be made explicit. Student teachers will benefit from a greater awareness of the relationship that exists between what happens in the classroom and the larger educational context.

Implications for Teacher Preparation Programs

Hudson's five factors provide a framework for mentoring and may be used as a benchmark for mentoring practices of those working with student teachers (Hudson, Beutel, & Hudson, 2007). Actively engaging mentor teachers who apply the principles outlined by the five factor areas will serve to ensure highly effective support for the development of student teachers. Not only can the five factors serve as a standard for mentors to measure their own practice, the five-factor model can serve to inform program developers and leaders in teacher preparation programs about ways to improve their services for student teachers.

Mentoring Practices that Support Student Teacher Success

The importance of the mentor/student teacher relationship cannot be overstated. Based on trust and honesty, the mentors' willingness to remain open and approachable will have a direct impact on the student teachers' confidence that they can count on the support of the mentor teacher no matter what happens. The mentors' personal attributes could impact the execution of other mentoring factors as well. For example if, as in this study, a student teacher hears from the mentor "do as I say and not as I do," then the time at which the mentor is modeling an effective instructional strategy, the student teacher

may not take the mentor seriously. Rather than being able to discern when best educational practice is being demonstrated, the student teacher may continue to question the mentor's capability.

Relationship is critical.

In this study, it was intended to determine what differences existed between the co-teaching and non-co-teaching groups. Although not statistically significant, qualitative data allowed for themes to emerge from the five factors and the type of comments provided by student teachers prompted specific considerations by the researcher. First, Rowley (2006) stated that an individual's beliefs about mentoring influence the ways in which they communicate. For example, the type of relationship between mentor and student teacher may imply a cooperative, two-way relationship, such as when student teachers in this study used comments with the "we" pronoun. Examples of this include: "We could talk about anything," and "We expressed concerns together professionally." Rowley defined this as a "collaborative approach" to mentoring, relating to each other in more interactive ways (p. 93). Conversely, a different mentoring approach is discernable when the student teachers in this study used the "she" pronoun, such as: "She was easy to talk to," or "She was patient and approachable." This may be interpreted as a hierarchal relationship; the mentor is viewed as a superior or authoritative level from the student teacher. Referred to as the "directive approach," this mentoring style sees beginning teachers best served when mentors provide advice and guidance grounded in the their own knowledge and experience. Although neither approach is judged to be superior over the other, both approaches must be thoughtfully employed depending on the context or situation.

Standardization of mentoring practices.

Mentor selection and classroom placement decisions for student teachers are important contributors to a successful student teaching experience. An excellent teacher does not necessarily make an excellent mentor; being an effective mentor requires distinctive skills to those of a good classroom teacher. Mentor teachers should be accomplished teachers who have achieved a high level of proficiency, and who are well respected by their peers. In addition, mentors who work with student teachers must be specifically effective at mentoring. They must have the mindset and the skillset to support their student teachers' growth and to build their confidence as professionals. Mentor selection criteria should be directly aligned with the five mentoring factors. This type of standardization of the mentoring roles and responsibilities will serve to enhance the student teaching experience.

Mentor training.

Preparation for assuming the role of mentor is not an automatic result of the experienced teachers' willingness to participate. Training and ongoing support is critical in supporting mentors to become highly effective in their role, both at the initial onset of the mentoring period and throughout the course of the semester (Moir et al., 2009). Although this study showed a low percentage of student teachers that disagreed that mentoring impacted their experience, finding a small number of student teachers that felt unsupported is too many. One student teacher in this study reflected, "I didn't feel supported at all." Each and every student teacher deserves the greatest chance of success during such an important phase of their preparation. Teacher preparation programs must seek to continuously improve the practices of the mentors who work with student

teachers. As practices improve, it is likely that the student teachers' perceptions of the five mentoring factors will increase.

Student teacher efficacy.

A final consideration shifts the focus from the mentor teachers to the student teachers themselves. Building an efficacious mentality toward improved practice is a dispositional characteristic of a professional educator at all levels of experience and should be expected of student teachers as well. Efficacy refers to the extent to which the student teachers believe they have the capacity to affect student performance (Guskey & Passaro, 1994). A sense of efficacy is linked to greater motivation toward the accomplishment of goals, and teachers with stronger efficacy beliefs are more likely to be more organized and devote more time to planning their teaching (Tschannen-Moran, 2004). Student teachers must know how to balance their efforts on showcasing the knowledge and skills they have acquired in their preparation program, with their intentions to remain continuous learners. Showing a willingness to be reflective and open to new ideas and suggestions is an important aspect of self-assessment and development.

Student teachers must also take ownership of their own efficacy. When student teachers in this study expressed comments such as; "I wish I would have gotten more direction on discipline procedures," it implies that the mentor teacher has failed to fulfill a responsibility to the student teacher. An efficacious individual that is self-directed might have said, "I wish I would have asked for more specificity about discipline procedures." Student teachers will benefit from an emphasis on their development of these kinds of dispositions along with the pedagogical skills they acquire.

Recommendations for Further Research

Findings from this study represent a step towards identifying promising practices for mentor teachers. As a result of the analysis of this research, it is possible to set a course of action that will serve to improve the student teaching experience and enhance the success of future student teachers. Three key issues for future research will address specific needs of student teachers and enhance the mentoring process.

First, since only self-reported perceptions of student teachers were used to define the practices of the experienced teachers who served in the role of their mentor, the results could be deemed one-sided. Student teachers may bring a biased impression of the mentor teacher by sheer virtue of the level of experience the mentor has had in the classroom. Perceiving the mentor as an "expert" can inadvertently have an effect on the student teachers' assessment of the effectiveness of the instructional practices the mentor uses. Further studies should be conducted that include the mentors' self-assessment of their own practice. Compared with student teacher perceptions of their mentoring experience, the mentors' perceptions will permit the researcher to dig deeper into the reciprocal nature of the mentoring relationship and will allow for further analysis of what happens between the mentors and student teachers.

Second, in this study there was a predominance of 4's and 5's in the survey responses of both the co-teaching and non-co-teaching groups. This type of clustering of responses at the upper end of the Likert scale may prompt the next generation of the survey instrument that encourages the student teacher to differentiate more specifically within the mentoring factors. Not aiming to make an assessment of co-teaching and non-co-teaching models, this study was intended to discern only between the perceptions of the co-teaching and non-co-teaching student teachers in regard to their mentoring

experience during student teaching. Further research can provide clarity of mentoring standards and identify what each factor looks like and sounds like in practice.

Also, conducting longitudinal studies with mentor teachers may provide more information on the conceptual understanding of mentors and how their perspectives are impacted through professional development. Ultimately, the more efficacious the mentors are, the more the mentoring will positively impact the development of student teachers with whom they work. This points to another unknown factor in this study. The level of prior mentoring experience of the mentor teachers who worked with these student teachers is unspecified. Other than a one-day training in which co-teaching mentors participated with their student teachers, it is unknown whether or not (or to what extent) the mentors may have been trained in their respective school or district. Ultimately, the preparation of mentor teachers is significant and should be considered in the future.

Third, the differences in perceptions about feedback between co-teaching and non- co-teaching groups suggests that researchers take a deeper look at the nature of conversations between student teachers and mentor teachers. Further analysis may provide greater insight into the students' perception of the communication that happens within the mentoring relationship and how that communication impacts the overall outcome of the mentoring factors, such as feedback. Student teachers' distinct use of pronouns such as "we" and "she" in the qualitative component of this study caused the researcher to surmise that a distinction exists in the ways student teachers perceive their relationships with their mentors. Without further analysis, this supposition cannot be validated.

Conclusion

Mentoring is an essential component of the student teaching experience. The provision of highly prepared and effective mentors contributes to the success of student teachers during this high stakes period of professional development. Substantial evidence from this study supports the five mentoring factors as a valid and useful framework for measuring the impact of the mentoring received by student teachers in the student teaching experience. The five factors also serve to identify the specific responsibilities of mentor teachers and should be used to articulate the goals and outcomes for their preparation for the role. Teacher preparation programs that enlist the support of experienced classroom teachers as mentors to student teachers must establish a set of expectations for the mentor/student teacher relationship, and also continue to study the effectiveness and the impact of this relationship on the success of the beginning teachers. Establishing the components of effective mentoring will not only verify what has been done during the student teaching experience, it will also serve to expand mentoring services to others who are developing effective student teaching experiences.

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APPENDIX A

Mentoring Perceptions of Student Teachers Survey Instrument

SECTION 1: Thank you for participating in this voluntary study on the support you have received from your cooperating teacher (mentor) during your student teaching. To preserve your anonymity, do not write your name or your cooperating teacher's name within this survey. Please ***circle*** the responses that apply to you and/or indicate your answer on the blank.

a) What is your tech I.D. number? (*required*) _____

b) What is your gender? Male Female

b) What is your age? _____ years old

c) How many mentors (cooperating teachers) have been involved in your field experiences during your preservice teaching preparation? (Include this one during student teaching).

1 2 3 4 5 6 7 8 9 10 or more mentors

d) How many lessons did you plan for teaching during this student teaching experience (whole class and/or small groups)? _____ lessons

e) Did you feel comfortable in demonstrating lessons to your cooperating teacher (mentor)?

Strongly Disagree Disagree Uncertain Agree Strongly Agree

f) What grade(s) did you teach during student teaching? (Circle all that apply.)

Pre-K K 1 2 3 4 5 6 7 8 9 10 11 12

g) What is the name of the school district you student taught in?

h) Which of the following best describes your school's location?

Rural Suburban Metropolitan Urban

Why do you want to become a teacher?

Mentee Perceptions of Student Teaching (MPST)

The following statements are concerned with your learning experiences with your cooperating teacher (mentor) during your final field experience (student teaching). Please indicate the degree to which you agree or disagree with each statement below by circling only one response to the right of each statement.
Key: **SD** = Strongly Disagree **D** = Disagree **U** = Uncertain **A** = Agree **SA** = Strongly Agree

During my final field experience (student teaching) my cooperating teacher (mentor):

1. was supportive of me for teaching. ……	SD	D	U	A	SA
2. used curriculum language from the state standards……	SD	D	U	A	SA
3. guided me with lesson preparation. ……..…….….	SD	D	U	A	SA
4. discussed with me the school policies used for teaching. ……..…..	SD	D	U	A	SA
5. modeled teaching. ……..….	SD	D	U	A	SA
6. assisted me with classroom management strategies for teaching. ……...	SD	D	U	A	SA
7. had a good rapport with the students learning . ……...	SD	D	U	A	SA
8. assisted me towards implementing teaching strategies. ……...…….	SD	D	U	A	SA
9. displayed enthusiasm when teaching. ……..…..…	SD	D	U	A	SA
10. assisted me with timetabling (scheduling) my lessons. ……..……..	SD	D	U	A	SA
11. outlined curriculum documents to me. ……...	SD	D	U	A	SA
12. modeled effective classroom management when teaching…….….	SD	D	U	A	SA
13. discussed evaluation of my teaching. ……..……	SD	D	U	A	SA
14. assisted me in the development of my teaching strategies. …….…….....	SD	D	U	A	SA
15. was effective in teaching . ……..….	SD	D	U	A	SA
16. provided oral feedback on my teaching. …….	SD	D	U	A	SA
17. seemed comfortable in talking with me about teaching. …….	SD	D	U	A	SA
18. discussed with me questioning skills for effective teaching. ……	SD	D	U	A	SA
19. used hands-on materials for teaching . ……...	SD	D	U	A	SA
20. provided me with written feedback on my teaching. ……..……..…	SD	D	U	A	SA
21. discussed with me the content knowledge I needed for teaching ……..…	SD	D	U	A	SA
22. instilled positive attitudes in me towards teaching . …….	SD	D	U	A	SA
23. assisted me to reflect on improving my teaching practices. ……..	SD	D	U	A	SA
24. gave me clear guidance for planning to teach . …….	SD	D	U	A	SA
25. discussed with me the aims (goals) of teaching. ……..….	SD	D	U	A	SA
26. made me feel more confident as a teacher. ……..……..	SD	D	U	A	SA
27. provided strategies for me to solve my teaching problems. ……..…	SD	D	U	A	SA
28. reviewed my lesson plans before teaching . …...……...	SD	D	U	A	SA
29. had well-designed activities for the students. ……..……..	SD	D	U	A	SA
30. gave me new viewpoints (perspectives) on teaching . ……..……...	SD	D	U	A	SA
31. listened to me attentively on teaching matters. ……	SD	D	U	A	SA
32. showed me how to assess students' learning . ……..	SD	D	U	A	SA

33 clearly articulated what I needed to do to improve my teaching. ……..	SD	D	U	A	SA
34. observed me teach before providing feedback. ……...	SD	D	U	A	SA

SECTION 3

This final section also focuses on your mentoring experience during student teaching.

1. How many times did you talk with your mentor (cooperating teacher) about teaching during student teaching?

_____ times

2. Did you feel you had a good rapport with your mentor (cooperating teacher) during your student teaching? *(circle)*

Yes No Briefly explain your response:

_____

3. What support strategies did your mentor (cooperating teacher) use to help you to feel successful with teaching?

_____

_____

4. Were there any aspects you think made you feel unsuccessful with teaching?

Yes No Briefly explain your response:

_____

5. What could your mentor (cooperating teacher) have done to further support your development as a teacher?

_____

_____

_____

_____

6. What do you think you could do (as a student teacher) to help a mentor (cooperating teacher) to support your learning about teaching?_____

_____

_____

_____

Further comments

APPENDIX B

Hudson Approval for Survey Use

Friday, October 8, 2010

Dear Lori,

Thank you for asking permission to use my MEPST instrument. You have my approval for use of this instrument in your study. As previously discussed to ensure a US context, you may need to change the wording of one item: timetabling to scheduling or place scheduling in parenthesis after the word "timetabling".

Please keep me informed on the results of your study.

Regards,

Peter

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APPENDIX C

Office of Field & International Experience Approval for Student Teacher Survey

Monday, November 1, 2010

Lori,

You have my permission to administer surveys to teacher candidates at the final seminars to be held December 10, 2010 and May 6, 2011.

Carol Werhan

Carol R. Werhan, Ph.D.
Director -- Office of Field & International Experience
College of Education
Minnesota State University, Mankato
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APPENDIX D

Survey Items Associated with Five Factors of Mentoring

Survey items associated with five factors of mentoring	
Factor	Survey Item
Personal Attributes	1, 17, 22, 23, 26, 31
System Requirements	4, 11, 25
Pedagogical Knowledge	3, 6, 8, 10, 14, 18, 21, 24, 27, 30, 32
Modeling	2, 5, 7, 9, 12, 15, 19, 29
Feedback	13, 16, 20, 28, 33, 34
Scoring: SD=1, D=2, U=3, A=4, SA=5	

APPENDIX E

Coding Key for Qualitative Data

Coding key for qualitative data				
Personal Attributes	System Requirements	Pedagogical Knowledge	Modeling	Feedback
supportive, comfortable talking, attentive, instill confidence, positive attitude, actively listen, assist reflection, trustworthy, interpersonal skill, emotional support, encouraging, relationship developer, care, concern, flexible, professionalism, authenticity, gentle, patient	discuss aim/goal, outline curriculum, school/district policy, standards, mandatory requirements, learning outcomes, political nature, routines, culture of school, resources, organizational content, technical aspect, evaluation system	guide preparation and planning, assist w/ scheduling, classroom management, teaching strategies, implementation, content knowledge, view points, questioning techniques, assessment, problem solving	demonstrate rapport, display enthusiasm, well-designed plan, model teaching, model classroom management, effective strategies, hands-on, visual examples, demonstrate effective pedagogy	observe teaching, oral feedback, review lesson plans, provide evaluation, written feedback, articulate expectations, raising issues, identify strengths/weakness, suggest improvements, constructive feedback, observation cycle, pre- and post-conference, show observation data

APPENDIX F

Institutional Review Board Approval

IRB Proposal 5749

Your IRB Proposal has been approved as of 11/11/2010. On behalf of the Institutional Review Board I wish you success with your study. Remember that you must seek approval for any changes in your study, its design, funding source, consent process, or any part of the study that may affect participants in the study. Should any of the participants in your study suffer a research-related injury or other harmful outcome, you are required to report them to the IRB as soon as possible.

The approval of your study is for one calendar year from the approval date. When you complete your data collection, or should you discontinue your study, you must notify the IRB. Please include your log number in any correspondence with the IRB.

This approval is considered final when the full IRB approves the monthly decisions and active log. The IRB reserves the right to review each study as part of its continuing review process. Continuing reviews are usually scheduled. However, under some conditions the IRB may choose not to announce a continuing review. If you need an official letter of approval on IRB letterhead, please contact Dr. Patricia Hargrove, IRB Coordinator, by replying to this email message.

patricia.hargrove@mnsu.edu