THE EXAMINATION OF THE EFFECTS OF PEER COACHING ON THE PRACTICES OF PRE-SERVICE TEACHERS

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ABSTRACT

The purpose of this study was to explore the effects of peer coaching on the classroom practices of pre-service teachers. Participants were four teacher interns from the University of North Carolina Wilmington assigned to a high school in southeastern North Carolina. Participants learned the purpose and parameters of peer coaching by engaging in training prior to the study. Pairs of participants observed classes, collected data, and conferred with their coaching partners. Audiotaped interviews, written reflection questions, and raw data from classroom observations were collected and analyzed. These data were examined for themes relevant to training, key elements of peer coaching, and effects on practices. Analysis of the data revealed that training was adequate and peer coaching was effective in altering the practices of the pre-service teachers. Recommendations for integrating peer coaching in the curriculum and intern experience for pre-service teachers are provided.

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DEDICATION

I would like to dedicate this thesis to my daddy, Ted Rivenbark, Sr. Although he is no longer here to share his special hugs and unconditional love, his precious gifts of laughter and faith continue to inspire me. He taught me by example to love God, enjoy life, and cherish family, reminding me that the most important things in life are not things.

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CHAPTER 1: INTRODUCTION

Background

Quality teaching is widely associated with the federal No Child Left Behind legislation, enacted in 2001. One of the major tenets of that education reform law is that individual states must determine standards for defining and employing quality teachers (Simpson, LaCava, and Graner, 2004). Given this mandate, school systems across the nation face the daunting and ambiguous task of identifying quality teachers and hiring those teachers to bring quality instruction to each child. However, Gelman, Pullen, and Kauffman (2004) contend that even though "NCLB offers a definition of highly qualified, and steps are highlighted to implement high-quality professional development.…the definition and the steps are far from clear and specific" (p. 195). Ironically, a law mandating the existence of teaching quality seems to exacerbate the problem of clearly defining teaching quality. Therefore, identifying characteristics associated with quality teaching becomes a critical exercise for educators.

Merriam Webster (2006) suggests that "excellent" and "superior" can be used when defining quality. In a discussion of teaching quality, Cochran-Smith (2003) says that for almost a decade "it has become commonplace to presume that matters of teaching quality figure largely in the ultimate improvement of education" (p. 95). However, Cochran-Smith (2003) asserts that one primary obstacle to achieving and sustaining teaching quality is that the educational community has thus far been unable to agree on a clear definition that will promote and sustain teaching quality. Berry, Hoke, and Hirsch (2004) contend, "While consensus is growing among school reformers that teachers are the most important school-related determinant of student achievement, there is not much more than ephemeral agreement on what we mean by 'teaching quality'" (p. 684). Although insistence on attaining and maintaining quality in education is

becoming more and more imperative, no single predetermined formula has been proposed to measure or improve quality instruction in the classroom (Lasley, Siedentop, and Yinger, 2006).

Considering the mandated urgency to expedite the accruement of quality practices, it seems crucial to examine factors that affect teacher quality. In a brief issued by the National Governors Association, Koppich (2004) discussed strategies for promoting high quality teacher preparation programs. In the guidelines presented in this brief, Koppich (2004) explains the criteria that she deems critical for highly qualified teachers. Among those characteristics, Koppich (2004) declares that it is necessary for teachers to know the scope of the subjects they teach and to know how to teach those subjects. Similarily, Kaplan and Owlings (2003) concur, asserting the idea that knowing how and what to teach helps to define teacher quality and ultimately affects student achievement. Kaplan and Owlings (2003) emphasize, "Both evidence and experience show that effective teaching requires a set of professional practices different from but connected to the content taught" (p. 690). A widely used term for those professional skills and practices is "pedagogy". Marzano, Pickering, and Pollock (2001) describe pedagogy as "instructional strategies… and management techniques used by the teacher" (p. 10).

Quality teaching certainly begins with rigorous preparation for the profession in areas of content and pedagogy. However, in spite of diligent efforts to achieve excellence in teacher training and preparation, truly qualified and quality teachers seldom emerge ready-made from the college classroom (Economic Policy Institute, 2006). On the contrary, excellence in teaching is generally recognized as a fluid and cumulative combination of preparation, determination, experience, and persistence. Therefore, preparation alone cannot be a benchmark for determining and producing quality in the teaching profession.

Application to Pre-service Teachers

If defining and maintaining quality practices is important for experienced teachers, ascertaining how to accumulate quality practices for beginning teachers seems especially crucial. In a report of a case study of two pre-service teachers in Australia, Kettle and Sellars (1996) reveal that the student teachers enrolled in their study "indicated that they had entered the course with a simplified idea of what teaching involved" (p. 18). Jenkins, Hamrick, and Todorovich (2002) provide similar insight through a quote by a pre-service teacher in their study. Commenting on his perception of learning to teach, the intern says, "It's such a seemingly simple thing to do, but there is so much to remember when we are teaching these lessons. Whoever said that teaching is easy?" (p. 47). Bullard (1998) contends that beginning teachers' requirements for professional development and growth differ from the needs of more experienced teacher. She declares, "Beginning teachers have special needs as they develop their expertise over time. In order to become successful teachers, beginning teachers must acquire a basic set of teaching skills" (p. 4-5). Kettle and Sellars (1996) explore practical theories of teaching, intending to "gain an insight into their [student teachers'] professional development and the factors influencing this development" (p. 1). Thus it seems prudent to explore factors that might accelerate the acquisition of skills in content and pedagogy for pre-service teachers, thereby expediting teaching quality for those novice teachers.

Collaboration frequently appears in discussions and studies related to the growth and development of classroom teachers. A report from the Southern Regional Education Board (2005) declares, "Effective school leaders use a variety of strategies--including creating opportunities for teachers to learn from each other--to encourage and support teachers in achieving greater excellence in the classroom" (p. 1). In an analysis of trends in teacher

evaluation, Mayo (1997) discusses the evolution of teacher evaluation into various models that can contribute to the growth and effectiveness of classroom teachers. Those models include collaboration, mentoring, and coaching.

In a similar manner, collaboration emerges in discussions of the growth and development of pre-service teachers. Reporting on a study of pre-service teachers, Bowman and McCormick (2000) assert, "Because preservice [*sic*] teachers must learn to meld pedagogical theory to classroom functions, a particular issue is the need for close supervision and guidance when they participate in field-based training" (p. 256). They suggest that peer collaboration can help to provide that guidance. In their study of the parameters to be considered when selecting field placement sites for pre-service teachers, Harlin and Murray (2000) concur, comparing impressionable pre-service teachers to newly hatched chicks. This analogy offers a critical reason for ensuring that pre-service teachers are exposed to collaborative methods and mentors (either supervisors or peers) that will positively affect both their field experiences and their practices.

Peer coaching is a form of collaboration known by many names, including peer mentoring, learning-centered supervision, peer supervision, and cognitive coaching (Pellicer and Anderson, 1995). Advocating mentoring by peers, Marshall (2005) suggests that the peer-coaching model can provide a valuable tool for collaboration and for evaluating and improving teacher effectiveness and quality. Costa and Garmston (2002) suggest that cognitive coaching positively affects the ability of teachers to self-analyze and alter practices, thus offering "numerous opportunities to grow and change professionally" (p. 338). Sagor (1997) also discusses the value of self-analysis for teachers, and he warns of problems that may occur when this learning technique is ignored. He says,

> Countless teachers have learned that feedback is the key to helping students develop self-regulating behaviors. Clearly, this is also true for teachers. However, teachers who, for whatever reason, believe that they are powerless to change teaching and learning in meaningful ways will perceive change projects as an investment in inevitable failure. (p. 188-189)

Thus, it seems prudent to consider peer coaching as a companion to pre-service teacher preparation in order to clarify expectations for teaching practices and to provide opportunities for positive changes in practices. Wynn and Kromrey (2000) emphasize that it is important for pre-service teachers to provide mutual support for self-evaluation of practices through peer coaching. Bristor, Kinzer, Lapp, and Ridener (2002) examine the Teacher Education Alliance, a model that restructured a teacher preparation curriculum by using teaching models and shared resources. They conclude that pre-service teachers benefited when they shared teaching experiences with other pre-service teachers. This conclusion implies that using a peer coaching model for pre-service teacher training might be beneficial.

Purpose of the Study

The literature reveals many studies of pre-service teachers using peer coaching. However, few studies link peer coaching to the practices of pre-service teachers. Therefore, after reflecting on the literature and considering personal experiences with peer coaching, the researcher decided to explore the effects of peer coaching and its influence in affirming or changing practices for novice teachers prior to entering their own classrooms. Consequently, the primary research question to be addressed by this thesis is: Is there a relationship between teacher interns participating in peer coaching exercises and their practices in the classroom?

This study focuses on four pre-service teachers completing a final semester internship prior to obtaining initial licensure. The researcher will formally train these four teachers to understand the process, mechanics, and purpose of peer coaching. Each participant will observe a lesson taught by a peer and will also be observed by a peer. Each participant will collect data during the observations and will have an opportunity to assess the data and consider its implications for instruction. The researcher will audiotape interviews with participants, and each participant will then conclude the study by completing a brief written reflection on the peer coaching experience. Finally, the researcher will evaluate the interview, reflection responses, and raw data from the classroom observations to ascertain the effects of peer coaching on affirming or altering the practices of emerging teachers.

When completed, this study should provide information relevant to the instructional practices of pre-service teachers. Specifically, this study could identify a viable component for training pre-service teachers to self-evaluate and subsequently to affirm or alter their classroom practices, thus promoting quality teaching prior to entering the classroom.

Summary of Thesis

This chapter introduces the background for this thesis study, describes the application of the study to pre-service teachers, and delineates the purpose of the study. Chapter Two reviews literature pertinent to this study of peer coaching. The literature review includes defining peer coaching and a discussion of historical information establishing the validity of peer coaching in a variety of contexts. The second chapter also explores various studies that help to establish the key elements essential for understanding and executing peer coaching, and it examines recent studies of peer coaching relevant to pre-service teachers. In Chapter Three, the researcher reveals the methodology used for this study, including details pertinent to the design of the study and to

the collection and analysis of the qualitative data. Describing data by using narratives and tables, Chapter Four presents the results of the study and the themes and patterns that appear in the data. Finally, Chapter Five completes this thesis study with a discussion of conclusions of the study, implications of the data, limitations of the study, and recommendations for future studies.

CHAPTER 2: REVIEW OF LITERATURE

Introduction

Chapter One introduced this thesis study, explaining the background and purpose for the study and its application to pre-service teachers. This chapter presents a literature review that explores the historical and theoretical significance of peer coaching for pre-service teachers. Beginning with definitions and descriptions of peer coaching, this chapter continues with an overview of the history and role of peer coaching in teacher self-assessment and improvement. The literature review also examines key elements that are used consistently in peer coaching models and are considered to be essential for peer coaching. Next the literature review examines current studies of peer coaching with pre-service teachers. Finally, the review explores the merits of this thesis study as it examines the effects of peer coaching on the practices of pre-service teachers.

Definitions and Descriptions of Peer Coaching

Establishing a definition and description of peer coaching is essential to understanding the impact of peer coaching on the proposed study. In 1987, Garmston (as cited by Showers and Joyce, 1996) listed several monikers that are related to and often equated with peer coaching. Those terms include technical coaching, collegial coaching, challenge coaching, team coaching, and cognitive coaching. Peer mentoring, learning centered supervision, and peer supervision are additional terms used by Pellicer and Anderson (1995). In their research, Showers and Joyce (1996) distinguished between these terms based on the focus and expected outcome of the coaching process. However, for the purposes of the proposed study the researcher uses these terms interchangeably, except in specifically delineated instances.

Attempting to initiate a peer coaching experiment with elementary students, Brewer, Reid, and Rhine (2003) stated, "The first step was to define the peer-coaching model" (p. 114). However, research shows that peer coaching is defined in a variety of ways. Costa and Garmston (2002) emphasized that cognitive coaching is a process in which a teacher observes the classroom practices of a colleague, sharing with the colleague mutual goals of altering and improving teaching practices. They perceived the coaching process as an avenue that allows a person "to be self-managing, self-monitoring, and self-modifying" (p. 21). Showers and Joyce (1996) explained the purpose of peer coaching by describing it as "a mechanism to increase classroom implementation of training" (p. 13). They emphasized that peer coaching is not a forum for observers to offer advice, but an opportunity for teachers to "learn from one another while planning instruction, developing support materials, watching one another work with students, and thinking together about the impact of their behavior on their students' learning" (p. 15).

As delineated by Marshall (2005), typical conventional models for teacher evaluation focus on the supervisor and not on the teacher as a learner. In the commonly used administrative evaluation model described by Marshall (2005), a principal observes a teacher, possibly preceding the observation with a quick pre-conference. Typically the teacher receives feedback from the observer, whereas in the peer coaching model the teacher reflects on her own instruction. Marshall (2005) concludes that peer coaching is a superior form of teacher self-evaluation, conducted for the benefit of the educator and not for formal evaluative purposes.

A participant in a Jamaican-based study of peer coaching conducted by McLymont and da Costa (1998) made an important distinction that helps to clarify the concept of peer coaching and to emphasize it usefulness for all disciplines. In a discussion of his experiences with

cognitive coaching, the participant described the coaching process as an "approach". "An approach, he explained, is one that can be used for any topic in any subject area" (p. 15). This insightful description implies that peer coaching is useful in a variety of settings and for a variety of reasons. A report by Santa Rita and Donanngelo (1996) offers further affirmation of the versatility of peer coaching. The report, detailing the process and merits of peer coaching, was a collaborative effort originating in the counseling department at a New York community college, written by a computer technology coordinator and a counselor. Thus it can be deduced that peer coaching is not just a topic for academic discussion among educators but is both adaptable and valuable in many arenas.

History of Peer Coaching

Peer coaching in education evolved as educators began to search for alternative methods to evaluate teacher performance. Little (2005) discussed the elusive nature of this search when he said, "Unsure of which catalysts were needed for changing education for the better, educators have continued to try numerous scenarios" (p. 84).

No review of peer coaching history would be complete without considering the impact of the research of Showers and Joyce (1996). Citing the historical significance of their studies, Showers and Joyce (1996) state, "Beginning in the mid-1950s, national movements to improve education focused on academic quality and social equality" (p. 13). In the early 1970s, Showers and Joyce (1996) began to explore the dismal fact that staff development based on those national movements was ineffective for almost 90% of the educators involved. Between 1980 and 1987, Showers and Joyce (1996) purported that the common practice of "assigning the blame to teachers was erroneous" (p. 13). They began in earnest to search for alternative practices for teacher training, and as a result they hypothesized that coaching by a mentor was

one way to secure successful implementation of staff development. By 1984, their theory had evolved from recommending coaching by an "expert" educator to emphasizing a model of peer coaching involving teacher cohorts. They stated,

> Results of our earlier studies showed that teachers who had a coaching relationship--that is, who shared aspects of teaching, planned together, and pooled their experiences--practiced new skills and strategies more frequently and applied them more appropriately than did their counterparts who worked alone to expand their repertoires. (p. 14)

Thus they revised their teacher training to include peer coaching in order to achieve effective retention and implementation of staff development. Eventually Showers and Joyce (1996) involved entire school faculties in the implementation of peer coaching practices, creating school-wide versus isolated opportunities for coaching.

In 1998 Bullard maintained, "The study of how adult professionals grow and develop has…contributed to the change in how teacher evaluations are conducted" (p. 4). In their cognitive coaching model, Costa and Garmston (2002) delineated the stages of development in adults, emphasizing that consideration of adult learning styles is crucial in developing an effective coaching model. Cognitive coaching is a model designed to help adults grow through self-directed learning. That model came into existence through the collaboration of Costa and Garmston in 1985. The essence of cognitive coaching is establishing collegial relationships among teacher coaches for the purpose of altering teaching practices through self-evaluation.

The California Mentor Teacher Induction Project was also initiated in the 1980s. Although the purpose of the project was to increase new teacher retention, the project focused on teacher mentoring as a key activity to achieve higher retention rates. The first phase of the project included matching pre-service teachers with master teachers for several weeks. During

the second phase of the project, those same pre-service teachers were coached again, but this time as full-time first-year teachers. Ingersoll and Kralik (2004) analyzed this mentoring model, concluding that first year teachers who participated in both forms of mentoring tended to remain in the profession longer than new teachers who were not mentored. The California Mentor Teacher Induction Project model is important to the current study because it was one of the first studies to include both peer coaching and pre-service teachers.

In the early 1990s, action research became a popular tool for teacher self-evaluation. Although the parameters for action research differ somewhat from peer coaching, action research is similar to peer coaching in many respects, utilizing most of the basic steps employed in many peer coaching plans (Sagor, 1997).

As peer coaching evolved as an alternative means of teacher evaluation and improvement, researchers recognized certain characteristics as standard elements necessary for the peer coaching process. The following discussion details key elements related to peer coaching that are addressed in this study.

Key Elements of Peer Coaching

A search of the literature reveals that certain key elements are common and essential to most peer coaching programs or studies. Bowman and McCormick (2000) identified several areas as key to measuring positive field experiences using peer coaching. Those areas included establishing a trusting relationship or collegiality with the peer coaching partner, receiving feedback from data collected during observations, analyzing feedback during post-conferences, and applying the data to personal experiences. Likewise, Costa and Garmston (2002) established a similar pattern for peer coaching. They advocated the importance of establishing trusting relationships among peer coaches, conducting initial conferences to establish goals and to

determine data to be collected, observing and collecting data, and allowing opportunities for the person who is observed to evaluate the data and to confirm or alter teaching practices. Lam, Kim, and Lam (2002) embraced similar elements in their study as well. Each of their coaching sessions included a pre-conference, a classroom observation, and a culminating session for analysis.

Although each peer coaching experience is unique in some detail regarding emphasis and process, certain elements are common to most peer coaching experiences. Current research provides the basis for discussing elements that are essential for the construct and execution of this thesis.

Establishing Trusting Relationships

Costa and Garmston (2002) asserted that a primary consideration for successful peer coaching is "to establish and then to maintain trust" (p. 114). They advocated that adult learning is facilitated by trust and therefore that establishing a trusting relationship for cognitive coaching allows maximum potential for learning. Kettle and Sellars (1996) likewise asserted, "An important component of critical reflection is the ability to form critical friend relationships" (p. 23). Trusting relationships are also essential for other elements of peer coaching, namely effective conferencing and meaningful data collection and analysis.

One especially noteworthy aspect of collegial relationships is that coaching partners share previous teaching experiences and profit from those shared experiences. McLymont and da Costa (1998) observed that participants "bring to the learning situation their history of previous experiences which should be utilised [*sic*] in the solution of problems" (p. 19). In a study that used peer mentoring with beginning teachers, Forbes (2004) held biweekly sessions to acquaint the participants with each other and to establish protocol for working in trusting relationships.

Participants in that study acknowledged that developing a trusting relationship was essential and that peer coaching was actually made easier by working with other teachers who had comparable teaching experience.

However, pairing teachers to reap the maximum benefits of peer coaching has been problematic. In initial trials of a study of pre-service education students, Wynn and Kromrey (1999) randomly assigned peer coaching pairs. Later, the researchers regrouped the participants to create pairings based on different skill levels, similar skill levels, and different teaching styles. The researchers concluded, "There are advantages to each type of pairing, and research is needed to determine how best to pair practicum students" (p. 24). Lam et al. (2002) discovered that failure to establish a trusting relationship for peer coaches created psychological pressure among participants. In their study involving teachers in Hong Kong schools, researchers assigned peer coaching pairs without consulting the participants. Each measurement of the study (interviews, group discussion, and surveys) indicated that participants were fearful that their self-esteem and professional integrity were threatened by the contrived pairing of coaches. As a result, the researchers found it necessary to adjust the conditions of the study to try to minimize what was negatively perceived as "contrived collegiality" (p. 189). In their report, Lam et al. (2002) concluded that, "Without the right culture [school climate], the practice of peer coaching will not generate genuine collaboration" (p. 193). In another study conducted in Hong Kong, Ling Li (2004) encountered a school culture that was amenable to using the peer coaching process. Nonetheless, he observed in his report of the study, "Physical proximity did not naturally provoke intellectual collaboration. Teachers need much training and experience in developing such a disposition" (p. 154). These studies affirm the crucial and delicate task of establishing trusting partnerships.

Thus, trusting relationships are the foundation for peer coaching. Establishing collaborative and trusting partnerships allows participants to explore and develop the remaining key elements associated with peer coaching.

Conferencing with Peers

Once peer relationships are established, coaching pairs must learn to communicate with each other. Conferencing is therefore a crucial element in a peer coaching relationship, allowing participants an opportunity to discuss the purpose of a proposed observation in a pre-observation conference and allowing time for analyzing and reflecting on collected data during a post-observation conference (Costa and Garmston, 2002).

The duration and intensity of conferences is usually tailored to each unique peer coaching experience. In a discussion of various mentoring opportunities for beginning teachers, Ingersoll and Kralik (2004) emphasized, "Mentoring programs can vary from a single meeting between mentor and mentee at the beginning of a school year, to a highly structured program involving frequent meetings over a couple of years" (p. 3).

There is no universal rule for conferencing, but many peer coaching conferences exhibit common traits. In a discussion of the findings of his study, Ling Li (2004) described the essence of peer coaching conferences when he stated, "During sharing sessions, teachers were able to identify problems, make suggestions, face and solve problems, and reach consensus, indicating a richer display of knowledge" (p. 149).

Santa Rita and Donanngelo (1996) suggested that a pre-observation conference should "identify the focus of the observation", "select a method of gathering data", and "choose a time for observation" (p. 4). They recommended that the pre-observation conference be brief (approximately twenty minutes) and be held "at a mutually agreeable time" when peer partners

can “talk freely and comfortably” (p. 4). Likewise, Costa and Garmston (2002) declared the pre-conference to be a time for a collegial pair to agree on goals and strategies for a classroom observation.

The post-observation conference offers peer coaches an opportunity to share and discuss the data that is gathered during a classroom observation. Santa Rita and Donannegelo (1996) suggested that fruitful post-observation conferences should “be held as soon as possible after the observation”, provide opportunity for the person who was observed to “analyze the data gathered during the observation and ask the coach(es) questions”, “not be judgmental or evaluative”, and “concentrate on whatever the observed educator has chosen as the focus of the observation” (p. 7). In essence, Santa Rita and Donanngelo (1996) perceived the post-observation conference as an opportunity to use factual data to analyze practice and to discuss opportunities for improvement. Jenkins et al. (2002) elaborated on that perception, stating, “The coach guides this process by asking clarifying, eliciting, and leading questions.” (p. 51).

Pre-conferences set the stage for data collection, and post-conferences allow an opportunity for analysis and reflection on that data. Thus conferences are vital to the peer coaching process, providing both the initial and final stages for peer collaboration.

Collecting Data During Observations

The purpose of pre-conferences is to establish criteria and protocol for the observation and data collection that will follow. While peer coaching can take many forms, gathering data during observations is a critical and almost universal element of the peer coaching process. In the cognitive coaching model presented by Costa and Garmston (2002), the observer gathers data that is requested by the person being observed. Costa and Garmston (2002) emphasized, “It is important for the coach to strive for specificity of what should be recorded” (p. 48). They stated,

"Teachers generally request that coaches observe two rather distinct categories of behaviors: their own and their students" (p. 383). Costa and Garmston (2002) provided a comprehensive list of such behaviors, including verbal and nonverbal feedback about teachers and students. Examples of teacher behaviors are mannerisms, pacing, and classroom movement. For students, an observer might record attentiveness, class participation, and interactions with the teacher or classmates.

Instruments for collecting data vary. Costa and Garmston (2002) emphasized, "It is also important that the coach invite the planner to construct the system for collecting the data" (p. 48). They suggested several alternatives, including recording data on a seating chart, making a checklist, and recording student or teacher comments. Santa Rita and Donanngelo (1996) recommended, "The coaching partners should work together to develop a method of data gathering that is suitable for the focus of the observation" (p. 5). Data gathering can be accomplished in a variety of ways. In a study of pre-service teachers involved in field experiences conducted by Bowman and McCormick (2000), the peer coach maintained data on his partner's teaching in the form of notes. In post-conference meetings the peer coaches shared and discussed data from the note taking. Santa Rita and Donanngelo (1996) advocated a simplistic approach to data gathering, using pen and paper to record classroom activities as agreed on at the pre-observation conference. Some researchers choose to use standardized forms to record observation data. Wynn and Kromrey (1999) developed detailed forms that clearly indicated the specific data that was to be collected by pre-service peer coaches. Each peer coach used the same format for each observation.

Lam et al. (2002) reported an interesting aspect of data collection that they gleaned from their study. To maintain consistency, Lam et al. (2002) asked the participants in their Hong Kong

study to use a standardized rating scale for each peer coaching session. However, at the conclusion of the study, participants soundly "agreed that the content of observation should not be dictated by the items on a standardized rating scale. It should be the common concerns of the observers and the observed" (p. 188). This insight affirms that data collection, regardless of the form it takes, is most valuable when it is determined by the specific needs or concerns of the peer coaching teams.

Therefore, carefully planned and executed data collection is a crucial element in peer coaching, because the culminating phases of peer coaching are not possible without the data-collecting step. After data collection, peer partners are then ready to analyze the data and reflect on the meaning and implications of the data.

Analyzing and Reflecting on Data

Building trusting relationships, communicating in conferences, and carefully selecting and collecting data are preliminary to allowing opportunities to analyze and reflect on the observation data. Jenkins et al. (2002) stated, "The information collected is the basis for discussion in the post-lesson conference" (p. 51). Costa and Garmston (2002) recommended that the teacher receiving coaching should reflect on the data that was collected, ideally recognizing both weak and strong areas in her teaching practices. Costa and Garmston (2002) purported that peer coaching based on this pattern of reflection frequently results in valuable self-assessment and ideally improves classroom practices. From their study of two pre-service students, Kettle and Sellars (1996) concluded, "Critical reflection has the potential to positively assist student teachers in their professional development" (p. 23). In contrast, Wynn and Kromrey (2000) stated, "When feedback is provided by a directing teacher, practicum supervisor, or administrator

(thus someone in a supervisory position) the person being observed may be overly concerned that the feedback is evaluative rather than supportive" (p. 73).

For effective analysis and alteration of practices to occur, reflection on those practices is essential. Ferraro (2000) asserted that reflective practice could benefit both pre-service and practicing teachers by providing them with a deeper understanding of their teaching practices and making them more effective teachers. Forbes (2004) reported in his study that participants in group sessions discussed lessons they had observed, focusing on issues identified in those lessons and the importance of their reflections on the lessons. Proctor, Rentz, and Jackson (2001) conducted a study of undergraduate students involved in field experience assignments in urban schools. They designed their study to examine student teacher perceptions of student needs in urban schools. Although their study did not include peer coaching, their conclusions reflect an interesting link to the connection between teacher reflection and teacher growth. Proctor et al. (2001) stated, "The results also indicated that without the opportunity for practicum students to share reactions to their experiences with cultural differences, both pessimistic and overly optimistic perceptions may go unchallenged" (p. 226). In other words, opportunity for reflecting on teaching experiences is key to examining and challenging ideas and practices.

Thus analysis and reflection complete the peer coaching cycle, offering insights into classroom practices and opportunities to affirm or alter those practices. Yopp and Guillaume (1999) expressed the value of reflection in peer coaching for pre-service teachers, concluding, "Thoughtful interaction with one's peers should be part of preservice [*sic*] teachers' preparation for the profession so that collaboration and reflection become habits" (p. 18). Jenkins et al. (2002) concurred, stating, "If teacher educators want to facilitate the process of pre-service teacher reflection then peer coaching can help" (p. 53).

Finally, Costa and Garmston (2002) emphasized that analysis and reflection do not conclude the coaching process but are merely part of a coaching cycle. Ideally, when all key elements are incorporated in a logical sequence, more trust is built and coaching cycles continue to build experience and expertise for coaching pairs.

Examination of Studies in the Literature

Research literature abounds with studies, reports, and commentaries on the process of mentoring and peer coaching, each employing key elements of the coaching process in a variety of ways. Studies have included school-age children coaching each other (Brewer et al., 2003). In addition, studies of teachers coaching other teachers in a similar field of study (Forbes, 2004), experienced teachers coaching less-experienced teachers (Lasley, et al., 2006), and teachers of equal professional stature coaching each other (Lam et al., 2002) have also incorporated peer coaching. Little (2005) proposed a unique model that combined peer coaching with collaborative teaching, an unusual model that placed two teachers in one classroom. Clearly there is no scarcity of reports and studies using peer coaching. In fact, a research review conducted by Ingersoll and Kralik (2004) that was limited to finding both teacher induction and mentoring as criteria located approximately 150 empirical studies. Therefore, this section of the literature review is limited to just those current studies specific to pre-service teachers and conditions relevant to this thesis. This discussion is chronological from 1996 to 2004.

Kettle and Sellars (1996) conducted a one-year qualitative study focusing on two undergraduate students enrolled in the third year of a teacher education program. The purpose of the study was to measure changes in the students' perceptions of teaching theory as measured by analysis of a series of audio taped interviews, journal reflections, and a specific prioritizing activity. Although this study did not include peer coaching, it impacts the proposed study

because the results of the study "support the literature which reports that student teachers enter teacher education with only partially developed theories" (p. 20).

Hasbrouck (1997) conducted an extensive study focused on pre-service special education teachers. This quantitative study followed 22 pre-service teachers, analyzing data from 132 observations and three selected case studies. Hasbrouck (1997) chose to compensate for the limited training time that was available in her study (4 hours) by using experienced coaches in conjunction with inexperienced pre-service teachers. Hasbrouck's (1997) unique modification of peer coaching involved eleven pairs of pre-service teachers participating in peer coaching, supervised by experienced educators. Each pre-service teacher used the same instrument and criteria to evaluate each observation. Researchers asked participants to use the data and feedback from coaching sessions to identify goals for improving their practices. Hasbrouck (1997) concluded, "Mediated peer coaching appears to be a promising tool for enhancing the training of novice teachers" (Discussion section, ¶ 1).

McLymont and da Costa (1998) used cognitive coaching in their attempt to determine the factors that altered the instructional techniques of a group of Jamaican mathematics teachers. The four teachers in the McLymont and da Costa (1998) study were not pre-service teachers. According to McLymont and da Costa (1998), students in this third-world country traditionally exhibit a very poor pass rate (less that 25 % in 1996) on national mathematics tests. McLymont and da Costa (1998) proposed a research question similar to the proposed thesis study, asking how cognitive coaching might be used to "inform and empower teachers to develop alternative modes of teaching in the regular mathematics classroom" (p. 5). The findings in the McLymont and da Costa (1998) study emphasized the importance of trust and reflection in collaborative relationships.

Yopp and Guillaume (1999) described a study conducted with "credentialed" (pre-service) teachers at the University of California, Fullerton. This multi-phase study involved pre-service teachers engaged in university instruction, field experiences for observations and preliminary teaching experience, and full-time teaching internships. Yopp and Guillaume (1999) used multiple learning and teaching experiences, offering opportunities for verbal feedback on observations. One facet of the program also included pre-service students meeting to discuss and offer written feedback on peer lessons that they observed. An examination of qualitative data revealed, "Students enjoy the opportunity to learn from one another. They value the opportunity to see their peers engaging in teaching as well as the opportunity to discuss and grow from their peers' comments about their own teaching" (p. 17).

A study conducted by Bowman and McCormick (2000) attempted to compare traditional and peer coaching models for field experience students. Researchers assigned pairs of undergraduate pre-service teachers to the same classrooms during a field experience. They taught peer teams to observe each other and to provide feedback on classroom interactions. A control group also participated in a field experience, but received feedback only through traditional university supervision. The peer coaching group showed significantly favorable differences in 8 out of 10 variables that were measured, leading the researchers to conclude that peer coaching was a significant factor in achieving the field experience goals for the pre-service teachers. Bowman and McCormick (2000) found that pre-service teachers could be successfully taught to peer coach in a relatively short timeframe with significantly positive results.

Wynn and Kromrey (2000) conducted an extensive multi-phase study with pre-service teachers at the University of South Florida. The study began when the participants were in their junior year of undergraduate study and ended in their senior year. Researchers randomly selected

the pair coaches. For the field experience, researchers assigned each pair of pre-service students to a supervising classroom teacher, later reassigning the pairs to a different supervising teacher. University supervisors trained participants to peer coach as part of their regular college classroom instruction. The participants then used peer coaching during their intern experiences. Coaching partners met for pre-observation conferences, agreed on data collection, and met again to reflect on the data and feedback. Wynn and Kromrey (2000) determined that their quantitative and qualitative data suggested that participants in the study had enhanced teaching experiences and experienced development in professional growth. The researchers also surmised that dual pairing of pre-service teachers as peer coaches and practicum partners in the same classroom presented unique challenges. Those challenges included convincing supervising classroom teachers to accept two inexperienced pre-service interns in one classroom. In addition, the researchers acknowledged problems with resolving issues with incompatible pairs of students.

Another coaching model using intern teachers is called the "Coaches-of-Coaches" model. This model was developed at San Diego University in California. Cegelka, Fitch, and Alvarado (2001) reported that this unique model was designed specifically for special education interns in rural or isolated settings where normal intern placement and supervision were not feasible. University supervisors assigned each teacher intern to her own classroom. Each novice teacher was fully paid and experienced full teaching duties, and over a period of two years the interns acquired teaching certification and met credential requirements. The program trained certified teachers to coach the non-credentialed interns. In addition to conferencing with the certified teachers, the interns also collaborated with other interns, critiquing and reflecting on videotaped classroom performances of their peers. In their conclusions, Cegelka et al. (2001) remarked,

"This early and continuous mentoring appears to contribute to the early success of the participants as teachers" (p. 173).

The purpose of a study that originated in Texas by Slater and Simmons (2001) was to gather "data to determine the extent to which the program helped teachers implement new teaching practices" (p. 72). Slater and Simmons (2001) began their study with an orientation meeting, explaining the proposed study and the peer coaching process and disseminating information on both the study and peer coaching. Slater and Simmons (2001) also held additional training sessions for volunteers. Each pair of coaches in their study participated in four observation cycles. Data collection was uniform during observations because researchers required participants to use identical data-gathering forms. The researchers concluded, "It appears that the program helped to enhance teaching skills" (p. 73). Data indicated that teachers "learned new professional ideas, gained knowledge and ideas about practice, and made positive attitude and behavior changes" (p. 73).

Jenkins et al. (2002) reported on a study of peer coaching with pre-service physical education teachers. This University of Wyoming model, called Physical Education Training Program (PETE), used sequential phases of peer coaching for training and practice. Training began for interns in the fall of their junior year, continued into the spring of the junior year, and culminated in the fall of the senior year. Researchers referred to each phase of the experience as a "teaching laboratory" (p. 49). Each laboratory emphasized different aspects of training for peer coaching, ultimately teaching pre-service teachers to use eight different instruments to observe peers and collect data during observations. Each laboratory also included increasingly detailed and complex field experiences, beginning with small groups of school-age children in phase one and ending with full responsibilities for daily lessons in public schools in the final phase. As pre-

service teachers progressed from one phase to the other, they had "autonomy in the decisions specific to the peer-coaching [*sic*] experience, including identifying the focus and choosing the data-collection instruments" (p. 50) appropriate for each observation.

Jenkins et al. (2002) emphasized in their report, "An important goal of the PETE program at UW [University of Wyoming] is to provide PTs [pre-service teachers] as much opportunity as possible to reflect on their instructional practice" (p. 49). In the three phases of instruction, researchers paired students with other pre-service teachers in variety of ways. Researchers reported that peer observations were guided by training student teachers in the PETE program to use specific instruments, but students were given latitude to choose the appropriate instrument. Jenkins et al. (2002) maintained, "It takes time and practice to learn to peer coach; therefore coaching experiences are presented to PTs in our program in a progressive manner across the early field experiences" (p. 51).

Bristor et al. (2002) reported on an experimental teacher preparation program, the Teacher Education Alliance, which was designed specifically to enhance preparation of pre-service teachers for the classroom. One phase of the experiment included pre-service teachers using a peer coaching model to assess classroom instruction for desired outcomes. Pre-service classroom instructors and pre-service observers actively assessed pedagogy and subject knowledge. Qualitative data indicated that participants in the Teacher Education Alliance felt well prepared and confident to assume teaching responsibilities.

Ladyshewsky (2002) conducted another study worthy of note, comparing the impact of a peer coaching model (Reciprocal Peer Coaching) on two groups of physiotherapy students. Although Ladyshewsky's (2002) study did not involve pre-service teachers, it is significant and relevant to this literature review because it involved peer coaching among undergraduate

students in clinical environments, conditions similar to those experienced by pre-service teachers in field experience situations. Ladyshewsky (2002) followed two groups of students through a clinical rotation. Each group received comparable instruction prior to attempting to diagnose a simulated patient. The control group consisted of twenty students who diagnosed the patient individually. In the experimental group, researchers allowed twenty-one pairs of students to confer and to collaborate in order to determine a diagnosis. The researcher used a quantitative analysis to ascertain that the students who peer coached significantly outperformed their peers who worked individually.

Forbes (2004) studied a cohort of science teachers to determine if novice teachers deemed peer mentoring valuable for support and development. His one-year study included training three novice teachers to peer coach, engaging the teachers in peer coaching sessions, and using seminars as a venue for the teachers to reflect on the peer coaching process. Forbes (2004) used several in-depth training sessions to teach the peer-coaching model and to establish coaching relationships. Forbes (2004) focused on beginning teachers who had completed pre-service internships and been hired as full-time teachers. Using audio taped interviews, Forbes (2004) analyzed reflections from journals kept by participants, administered surveys to participants before and after the study, and included case studies. Although his study focused on novice teachers with some teaching experience, it is significant to this thesis study because the experience level of the participants in his study was minimal. Examining his research question on the perceived value of the peer mentoring process, Forbes (2004) concluded, "Our results serve to illustrate that participation in peer mentoring by early-career science teachers is perceived to be a valuable experience and provides a support mechanism during these critical initial years" (p. 235-236).

Ling Li (2004) studied the impact of peer coaching on the interactions of sixty kindergarten teachers in Hong Kong over a two-year period. Although Ling Li's (2004) study utilized peer coaching, the participants in Ling Li's (2004) study were practicing teachers and not pre-service teachers. In addition, Ling Li (2004) attempted to measure several other collaborative models concurrently with measuring peer coaching. Ling Li's (2004) third research question is particularly significant to this thesis study. He asked, "What are the effects of peer coaching, modelling [*sic*], action research, and collaborative school culture in teachers' practice and belief?" (p. 145). Results of the study showed that collegiality does have the potential to change teachers' practice.

It is obvious from this examination of the literature that a number of carefully crafted and executed studies have used pre-service teachers as subjects. Likewise, the proposed study attempts to add to the current body of knowledge by studying pre-service teachers to determine how peer coaching might affirm or alter their practices in the classroom.

Chapter Summary

This chapter reviewed the literature, defining and describing peer coaching and establishing the historical significance of peer coaching. It also discussed the key elements essential for peer coaching and examined current research relevant to peer coaching with pre-service teachers. Chapter Three explains the methodology and design used for this study.

CHAPTER 3: METHODOLOGY

Introduction

The previous chapter of this thesis established the basis for the research question that this study presents, as indicated in a review of the literature. This chapter discusses the methodology used to test this research question: Is there a relationship between teacher interns participating in peer coaching exercises and their practices in the classroom? This discussion includes descriptions of the specific research methodology and design used for the study and justifications for choosing that methodology and design. Included are explanations of setting, sample selection, instrumentation, and procedures. Discussions also include data collection, recording, processing, and analysis.

Research Method and Design

This study is basic research. According to Patton (2002), the purpose of basic research is to add to the knowledge base on a specific concept or idea. This study examines the relationship between peer coaching and the teaching practices of pre-service teachers. The primary purpose of this study is to gather and examine data investigating the effects of peer coaching on the affirmation or alteration of practices of pre-service teachers. In addition, the study examines evidence of training for peer coaching and responses to the overall effectiveness of the experience.

Using a convenience sample, the researcher collected qualitative data from open-ended interviews, reflection questions, and raw data from classroom observations. The qualitative data was analyzed for themes and patterns to reach conclusions about the results of this study. Figure 1 explains the overall research design.

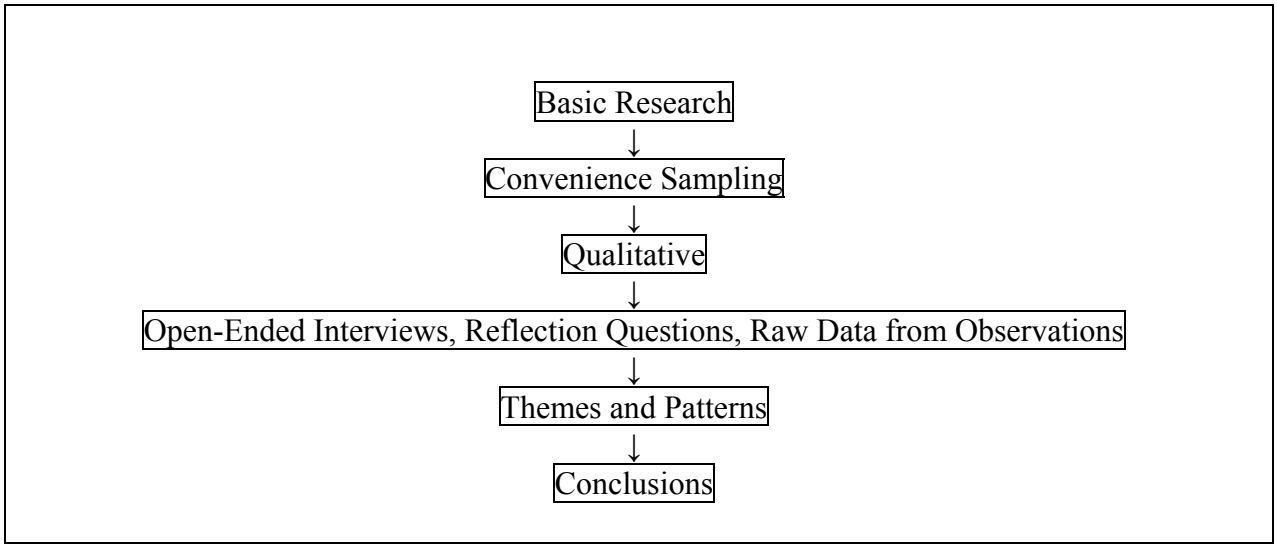

Figure 1. Research design for this thesis study

Setting

The setting for this study was a high school in southeastern North Carolina. Along with several other area schools, this site trained pre-service teachers for initial teaching certification, working in partnership with the Watson School of Education at the University of North Carolina Wilmington. Thus the high school served as a host site for the culminating teacher intern field experience. Hereafter, the pseudonym "Harvest High School" identifies the site school.

At the time of this study Harvest High School had a racially and economically diverse student population of approximately 1900 in grades nine through twelve. The school had five administrators and a combined staff of approximately 160 licensed and support staff members.

The study was conducted between mid-March and late April of 2006. The timeframe for the study coincided with the spring semester of the University of North Carolina Wilmington and also with the second semester of the local public school system.

The researcher applied for and received approval from the Institutional Review Board at the University of North Carolina Wilmington to conduct this study. In compliance with requirements of the Institutional Review Board, the researcher received written consent for this study to be conducted on the Harvest High School campus (see Appendix A). The researcher received permission from the principal of Harvest High School to enlist study participants, conduct necessary training, and to culminate the study by collecting audio taped interviews and written reflections. Participants completed training for the study in mid-March and engaged in peer coaching in early April. The researcher conducted interviews during the last week of April and subsequently collected written reflection questions, completed transcription of interviews, verified interviews and reflections, and analyzed of data from the study.

Sample Selection

The sample for this study was a convenience sample of four pre-service interns from the University of North Carolina Wilmington. Prior to the initiation of the study, supervisors from the Watson School of Education at the University of North Carolina Wilmington assigned eight student interns to Harvest High School. Each student was expected to serve approximately four months as a pre-service intern under the supervision of a classroom teacher at Harvest High School.

The researcher solicited the study sample from these eight student interns, based on their placement at Harvest High School and their willingness to participate in the study. Prior to the study, these eight interns attended a training session that initially acquainted them with the purpose and techniques of peer coaching. In addition to providing training for peer coaching, this training session met requirements for on-site instructions per university guidelines. At the training session, the pre-service teachers participated in a discussion of the rationale for peer coaching, and they learned techniques for conducting peer conferences and observations. Each participant received written information to reinforce the main ideas of the training. Appendix B includes samples from the training materials, including basic principles of peer coaching and examples of raw data gathered by the researcher during actual observations. At the close of the training session, the researcher verbally informed each intern of the purpose of the proposed study and offered each intern an opportunity to participate in the study. The researcher provided a consent form to the eight interns, requesting that they read the requirements of the study and consider participating in the study (see Appendix C). After several days, the researcher contacted the interns again, providing them with a written invitation to join the study (see Appendix D). Four of the eight student interns volunteered to participate in the study, and four interns declined

participation. The four volunteers each signed and returned to the researcher the consent form required by the Institutional Review Board.

The sample consisted of one male and three female interns. Each participant was between the ages of 21 and 25. Pseudonyms (Alice, Betty, Charles, and Diane) were assigned to each participant. During the intern semester, Alice taught social studies, Betty and Diane each taught English, and Charles taught science.

Instrumentation

As early as 1978, Denzin (as cited in Flick, von Kardorff, and Steinke, 2004), described triangulation of data as a research technique combining "data drawn from different sources and at different times" (p. 178). In an attempt to achieve triangulation of data for this peer coaching experience, the researcher used two different instruments to collect participant responses. In addition, the researcher examined samples of raw collected by the participants during peer observations.

The researcher compiled and used a set of twenty-five questions to conduct an audio taped interview for each participant (see Appendix E). In a manner recommended by Patton (2002) for standardized open-ended interviews, "The exact wording and sequence of questions [were] determined in advance. All interviewees [were] asked the same questions in the same order" (p. 349). Although the interviewees were free to elaborate or curtail their responses, this pattern of questioning increased the possibility of comparing responses and helped the researcher to organize and analyze the data (Patton, 2002). The researcher attempted to craft interview questions to ascertain understanding and adherence to the key elements of peer coaching (established previously in the literature review for this thesis) and to elicit responses that might inform the researcher if classroom practices had been affirmed or altered. In addition, the

researcher designed some questions to evaluate overall comments on the peer coaching experience. Following the completion of the peer coaching cycles and the audio taped interviews, participants responded (in writing or by e-mail) to five additional questions (see Appendix F). The researcher designed the reflection questions to reiterate in an abbreviated form the general content of the interview questions. The researcher mailed copies of transcribed interviews and responses to reflection questions to each participant for verification of content.

Procedures

University supervisors from the Watson School of Education at the University of North Carolina Wilmington expected intern teachers to attend at least four on-site seminars during the intern semester. The researcher, who is also site coordinator for the school-university partnership, conducted one of those on-site seminars in March 2006. At this instructional seminar, the researcher informed the eight pre-service teachers of the purposes, principles, and mechanics of peer coaching and provided written instructions intended to enhance understanding of the peer coaching process (see Appendix B). In addition, the researcher presented opportunities for the eight interns to ask questions and to discuss issues pertinent to the instruction.

At the conclusion of the training session, the researcher elucidated details of the proposed study and presented an opportunity for each intern to consider volunteering for the study. After several days, the researcher then issued a written invitation to join the study (see Appendix D) and provided a copy of a participant consent form required by the University of North Carolina at Wilmington Internal Review Board (see Appendix C). Finally, the researcher personally contacted each intern to determine intention to participate in the study. Four interns declined

participation, and four interns agreed to participate. Each agreeable person returned the signed consent form to the researcher.

The researcher assumed responsibility for pairing participants in this study. Several factors affected the choice of pairs. Betty and Diane interned in the same discipline and expressed an interest in working with each other. Alice and Charles did not express preferences for pairing, but they knew each other from previous contacts at the University of North Carolina Wilmington. Intending to use these common bonds to accelerate the building of trusting relationships, the researcher paired Betty with Diane and Alice with Charles. The researcher gave participants written notification of the pairings along with suggestions for implementing the conferencing, observation, and reflection stages of the peer coaching experience (see Appendix G). The researcher also offered to ameliorate scheduling problems for observations, but that intervention was not requested.

At the outset of the study, the researcher clarified that each participant would be expected to engage in a pre-observation conference with a peer, observe a lesson taught by a peer, collect data during the observation of a peer, present the data to the coaching partner, and provide an opportunity for the coaching partner to assess the data and consider its implications for instruction. Likewise, participants understood that they would repeat this series of activities as the person being observed. Participant pairs communicated in person or by e-mail to schedule opportunities to pre-conference, observe, and post-conference.

Data Collection and Recording

Patton (2002) states that the opinions and responses of participants in a qualitative study are "the important data source for the evaluation" (p. 176). Likewise, the primary sources of data for this qualitative study were the interviews and reflection responses provided by the

participants. Several weeks after initiating the study, the researcher contacted each participant requesting an opportunity to conduct an individual interview following the completion of the peer coaching activities (see Appendix H). After arranging interviews, the researcher provided each participant with a copy of the proposed interview questions. The researcher anticipated that having an advance copy of the interview questions might offer participants an opportunity to contribute in-depth answers. Subsequently, the researcher conducted and audio taped interviews (approximately 20 minutes each) with each participant, attempting to conduct "interviews that capture [d] direct quotations about people's personal perspectives and experiences" (Patton, p. 40). With the exception of extemporaneous questions posed to clarify a particular response, the researcher used the same sequence and content of interview questions for each participant. Participants also completed (in writing or by e-mail) five additional reflection questions and returned those responses to the researcher. In addition, the researcher collected copies of the raw data that were collected during each peer observation (see Appendixes I, J, K, and L).

After collecting data by audio taping interviews, receiving written responses to reflection questions, and collecting raw data from observations, the researcher transcribed each interview. Fillers such as "uh", "okay", "like", "you know", etc. were eliminated. The researcher mailed a copy of each transcription to the participants for verification of content. In an accompanying cover letter (see Appendix M), the researcher informed participants that their responses would be evaluated for content and meaning only and not for grammatical or structural content. Betty and Charles replied by e-mail that the transcriptions were accurate and indicated they did not wish to make any changes in their responses. However, Diane elected to return the transcription and reflection responses by mail, making several handwritten grammatical and structural changes on the transcribed copy of her interview. The changes she indicated for the transcribed interview did

not change the meaning or intent of her original responses, and the researcher made the changes as requested by Diane. Diane confirmed that her reflection responses should remain as originally written. Alice completed the audio taped interview but did not respond to the reflection questions. Despite efforts by the researcher to contact her by mail, by e-mail, and by telephone, Alice did not respond to additional requests to verify her interview responses or to complete the reflection questions. Consequently, Alice contributed only unverified responses to the interview questions and raw data from her peer observation.

Data Processing and Analysis

Following an analysis sequence recommended by Glatthorn (1998), the researcher initially read through the transcribed interviews and the written reflection questions "to tentatively identify categories of responses" (p. 161). Patton (2002) declares that one of the key assumptions of basic research is "the world is patterned; those patterns are knowable and explainable" (p. 224). Using inductive analysis techniques suggested by Patton (2002), the researcher examined "the details and specifics of the data to discover important patterns, themes, and interrelationships" (p. 41). As described by Patton (2002), the researcher chose this analytical framework to establish a logical basis for organizing the data, to look for "emergent patterns in the data" (p. 468), and to "illuminate key issues" (p. 439) examined in the study. The primary purpose of data analysis in this study was to investigate the affirmation or alteration of the practices of the pre-service teachers. In addition, data was analyzed to examine evidences of training for peer coaching and the overall effectiveness of the peer coaching experience. Having identified those themes and patterns consistent with the purpose of the study, the researcher repeatedly examined the transcriptions, reflections, and raw data from observations, confirming the final criteria for categorizing responses.

The researcher uses anecdotal quotes and information gleaned from interviews and reflection questions to indicate the apparent patterns in the data. In addition, tables display major themes, exhibiting comments relevant to a particular theme. Within the tables, comments are attributed to individual interns. The researcher also identifies the source of the comments by referencing the question that elucidated each comment.

Chapter Summary

This chapter explains the design and methods used to establish the parameters for this thesis study and explains the procedures for sample selection, data collection, and analysis. The following chapter reports the results of the data analysis, using text and tables to display the inherent themes.

CHAPTER 4: RESULTS

Introduction

Chapter Three presented methodological rationales for this thesis study. Chapter Four presents the results of the analysis of the data that were collected for this study. The presentation of results begins with foundational themes, namely prior experience with peer coaching, the purpose of peer coaching, and adequacy of training for the study. Data relevant to key elements of peer coaching (trust building, conferencing, observation and data collection, and analysis and reflection) follow the introductory data. This chapter discusses themes relevant to the affirmation or alteration of teaching practices. In addition, this chapter presents themes relevant to any unfavorable aspects of the study and several miscellaneous recurrent themes.

Responses to interview questions are noted with sequential numbers 1 through 25. Numbers 1-5, proceeded by an "R", designate responses to reflection questions. Tables display some of the data. The letter "Q" and the number of the interview or reflection question identify the origin of each response displayed in the tables.

Foundational Themes

Three themes that emerged from the data helped to form a foundation for examining and analyzing the peer coaching study. Those themes were previous experience with peer coaching, the purpose of peer coaching, and the adequacy of training for this peer coaching experience.

Data Relevant to Previous Experience with Peer Coaching

The researcher used responses to question 2 to establish evidence of prior experience with peer coaching. No participants had engaged in peer coaching, although each person had experienced other types of peer interactions. Alice had observed other teachers but not "made reports back to them". Betty said she had participated in peer observations, but she specified,

"Not the coaching aspect, but just the peer observations." Charles described being engaged in "peer interactions between each other where we've given criticisms and good reviews of other people's work." He followed that description by musing, "I don't guess you'd call that peer coaching." Diane stated, "Before this study I had never peer coached, and it was actually just the first time I had observed anyone while I was doing student teaching."

Data Relevant to Purpose of Training

The researcher used responses to questions 1, 4, and 10 to gather data relevant to participant understanding of the purpose of peer coaching. Question 1 specifically asked for an explanation of each participant's understanding of the purpose of peer coaching. Alice described the purpose of peer coaching by saying, "I would say peer coaching is having a teacher peer come into your classroom, give them a specific problem that you may be having or a concern to look at and make observations for you." Betty's description included the statement, "I think peer coaching is to teach and learn from somebody who is the same level, … the same situation that you're in." Charles described going into another teacher's classroom, talking to the teacher beforehand, and giving help and advice on a specific problem identified by the teacher. In a manner similar to Charles, Diane identified elements to be addressed by the peer coaching process, including "figuring out what issues you're having problems with, using observations to pinpoint those problems, and finding solutions."

Question 4 asked participants if they understood the purpose of peer coaching prior to observing a peer. Each participant responded in the affirmative. Diane elaborated on her "yes" response to question 4 by saying, "I did feel that I understood it because you explained to us that the reason for it was to just, in an informal way, be able to critique each other and give

suggestions." Question 10 asked participants if they thought their peer partners understood peer coaching. Again, each participant answered affirmatively.

Diane's response to question 25 revealed additional relevant data. She said peer coaching is "just genuinely something to help you improve as a teacher, and that's the only goal." In her response to question R-1, Diane stated, "The sole purpose was to improve specific things in my classroom."

Data Relevant to Adequacy of Training

A third preliminary consideration in the data analysis was to examine data relevant to the training process used in the study. Question 3 asked participants to assess the adequacy of their own preparation for peer coaching. Each participant reported feeling prepared to peer coach. In response to question 11, all participants again responded affirmatively, indicating that their peer coaches were adequately prepared to peer coach. Table 1 shows additional comments relevant to the adequacy of training for this peer coaching experience.

Table 1

Data Relevant to Adequate Training for Peer Coaching

Interns	Responses associated with training and preparation
Alice	Q3: "We did a review of what the peer coaching was"
	Q11: "I thought he was pretty well trained."
Betty	Q3: "Your directions were really clear and really step-by-step, so we knew exactly what we had to do. There were no questions about what we had to do to be a peer coach."
	Q4: "your directions were really, really clear"
	Q10: "I was kinda on the roll with peer coaching, knew what it was all about, knew what I was looking for."
Charles	Q3: "So I felt like I was prepared for it."
Diane	Q3: "So I definitely felt prepared."
	Q11: "I definitely felt that Betty knew what she was doing."

Themes Relevant to Key Elements of Peer Coaching

The literature review established key elements that are crucial to the peer coaching process. In addition to establishing foundational themes for this peer coaching experience, themes relevant to the key elements of peer coaching emerged. The researcher inspected the data for comments relevant to each of those key elements.

Data Relevant to Establishing Trusting Relationships

A basic step in the peer coaching process is the development of a trusting relationship between peer coaches. The researcher examined the data for comments indicating the building of relationships. As noted in Table 2, data associated with relationship development was sparse. However, the researcher chose to display the data in table form to facilitate comparison with data for the other key elements that were examined.

Table 2

Data Relevant to Establishing Trusting Relationships in Peer Coaching

Interns	Comments relevant to building relationships
Alice	None
Betty	Q3: "over the internship we've gotten to know each other so I felt really comfortable with her"
Charles	None
Diane	Q18: "I felt very comfortable with her because she's my age, she's a peer"

Data Relevant to Conferencing

The researcher posed questions 5 and 12 to specifically address the initiation and completion of pre-observation conferences, intending to determine if participants engaged in discussions prior to observation and data collection. Each peer coach answered both questions affirmatively. Alice and Charles indicated that their pre-conferences occurred through e-mail. Betty and Diane described sitting face-to-face to accomplish the pre-conference. Table 3 displays additional comments relevant to conferencing. Table 3 does not differentiate between pre-observation conferences and post-observation conferences.

Table 3

Data Relevant to Conferencing in Peer Coaching

Interns	Responses associated with conferencing
Alice	Q3: "the person that I observed, the person that observed me, I had them go over everything with me about what I wanted them to look for"
	Q5: "We e-mailed back and forth about what we needed one another to look at"
Betty	Q5: "We actually set up a little what we were gonna do…so the person knew what to look for"
	Q6: "Diane decided what she wanted me to look for in her class"
	Q12: "I told my peer observer what I was going to be doing and what I wanted her to look for"
Charles	Q1: "we're to go into another classroom, that we have talked to the teacher beforehand"
	Q3: "We talked beforehand---not talked, we did it through e-mails"
	Q4: "we came back together and talked about it again"
	Q5: "We communicated through e-mails"
	Q11: "We were communicating through e-mails"
	Q12: "Through e-mails"
Diane	Q3: "before I went and observed her we talked about several different issues that she was having"
	Q5: "We both sat down and kinda talked about several different issues we were having and what issues would be a good thing to do the peer coaching"

Data Relevant to Observations and Data Collection

Because observations are the means for collecting data, the researcher did not separate the two occurrences in this discussion of results. Therefore, the researcher searched for themes relevant to either of these activities in the interview and reflection data and reported that data collectively. The researcher originally posed question 7 to help determine how the data collected during observations was interpreted. From her response to question 7, it is evident that Alice did not clearly understand the intent of the question. However, her response does clarify her understanding of observation and data collection. Alice replied,

> I was supposed to look at students who were talking out in class and what they were talking about and when the teacher called on them or interrupted them and told them to be quiet. I just looked at a seating chart, I made myself familiar with where the students were sitting and kept a running tally of who was talking, what it was about, and what time it was.

In a similar manner, Betty also discussed observations and data collection in question 7. She responded,

> She wanted me to watch the order in which she answered questions; … she wanted me to see if she went to the people in the right order by when they raised their hand. Did she go to them first or did she go to someone who raised their hand after? So I just put little symbols down on their seating chart if she answered the question right as they answered [asked] it or if she skipped them. Just made symbols to mark that.

Commenting on the overall process of observing a peer to collect data, Charles remarked in his response to question 24, “I think it’s a very good thing mainly because of the fact that you’re looking at one problem in your class and you’re not observing the teacher, you’re

observing a problem and that problem is given to you by the teacher." He reiterated this opinion in his response to question R-1, stating, "Peer coaching is great for focusing on just one problem. Most observations look at the class as [a] whole, but peer coaching looks at one problem that the teacher being observed has identified." Additional responses associated with observations and data collection appear in Table 4.

Alice, Betty, Charles, and Diane each accumulated raw data as they observed their peers. The researcher inspected these sets of raw data and considered their relevancy to observations and data collection. Alice collected the raw data found in Appendix I, using a list of student names and their off-task behaviors. Charles also recorded off-task behaviors, electing to list the behaviors chronologically (see Appendix J). Betty and Diane each used a seating chart to collect data. Betty focused on the order that Diane answered questions (see Appendix K), and Diane marked the nature of student responses (see Appendix L).

Table 4

Data Relevant to Observations and Data Collection in Peer Coaching

Intern	Responses associated with observations and data collection
Alice	Q1: "Give them a specific problem that you may be having or a concern to look at and make observations for you" Q6: "The other peer intern that was observing me was responsible for collecting it. And I collected data watching his class." Q12: "I told him that I wanted him to look for students who were not participating in the class, they're not paying attention to the lecture"
Betty	Q4: "we understood how we had to pick a certain aspect of the class that we wanted to observe" Q5: "we decided what kind of thing we were gonna analyze so the person knew what to look for. We got our seating charts all set and switched them before we did the observation" Q6: "We talked about what I would do, what I would mark down on the paper." Q12: "She had my seating chart and it went well." Q13: "I came up with the idea of what I wanted to do…. So I just wanted to see who actually raises their hand."
Charles	Q1: "it's not to be a broad problem but a very specific problem that she's having problems with" Q4: "We set down what we wanted to look for and we looked for it, and found some instances where it happened."

	Q11: “we determined what we were going to look for and then we were ready to go. We set times up and seating charts”
	Q24: “you’re looking at one problem in your class and you’re not observing the teacher, you’re observing a problem and that problem is given to you by the teacher.”
	Q25: “And it can be beneficial to both the observer and the observee because the observer sees how you handle the class the way you do and while they’re observing they can pick up things.”
	Q25: “they [peer observers] also see another viewpoint of how to work with a problem or even see where the problem’s coming from”
Diane	Q1: “have someone observe you and pinpoint what those problems are”
	Q3: “we just pinpointed one that we really thought, ‘Well this will be a good thing to observe, this is how I could observe it’”
	Q6: “I was responsible for actually writing the data. She gave me a seating chart and that was how I was able to collect the data while she was teaching”
	Q13: “She wrote down the data as I was teaching.”

Data Relevant to Analysis and Reflection

The final category of data relevant to key elements used in peer coaching is analysis and reflection. The original purpose of question 14 was to examine the roles of peer coaches in the analysis process. In her response to question 14, Betty succinctly described how she analyzed and reflected on the data collected by her peer coach. She reflected,

> It was pretty informative, really. After I got my thing back and I looked at it I saw what kids I wanted to really focus on and not answer their questions until they raised their hands and ask with the right procedure. I saw what kids already have that down. They know how to raise their hand and I don't have to worry about them. So I kinda saw the problem areas of certain students more that others that just shout things out.

Table 5 displays additional comments associated with analysis and reflection.

Table 5

Data Relevant to Data Analysis and Reflection in Peer Coaching

Intern	Responses associated with data analysis and reflection
Alice	Q8: "I went back through it afterwards and noticed that one student was just talking a lot about nothing during the whole time that I was in there." Q9: "After I did this I was a lot more aware of who I was calling on and who wasn't talking or who was talking just all the time."
Betty	Q8: "I pointed out areas where I saw that she skipped people or was real good with answering their questions immediately." Q9: "I kinda put myself in her situation, where I was like, 'Do I do the same thing that she does, like skip people?'"
Charles	Q4: "we came back together and talked about it again." Q7: "I guess she knew where her problem was, and I guess it just helped her concentrate on it more and then be more aware of how she reprimanded her students and how she called people down." Q14: "the main thing I wanted to see was make sure that I was treating everybody fairly when I would call them down or talk to them. And I saw where in some instances it was fair and in others I could improve on [it]'
Diane	Q1: "it allows you to…find solutions to those problems" Q8: "when we discussed it afterwards I didn't just give her the seating chart back. We really went through and I explained what symbols I used, what that meant, and how I really saw where the problems were."

Q9: “addressing questions when students don’t raise their hand was something that I actually hadn’t ever thought about”

Q14: “After the observation she sat down and showed me---she had made notes on my seating chart and they were just shorthanded---so she went through and explained what each one of them meant.”

Q15: “we both went through and kinda discussed what she had seen and how we could change that.”

Themes Relevant to Affirmation and Alteration of Practices

In addition to searching the data for themes related to elements of peer coaching, the researcher sought themes relevant to the effects of peer coaching, namely the affirmation or alteration of teacher practices. Each of these effects is addressed separately.

Although each intern contributed data implying an affirmation of personal feelings about her teaching, there was no data to indicate affirmation of practices. Having made that stipulation, this section includes only data relevant to affirmation of personal feelings. In her response to question 20, Alice reflected on her feelings after observing her peer teach a lesson. She commented, "Watching the other teacher and how he conducted himself, I felt that I was actually doing pretty much the same as him, which felt pretty good". Betty made a similar remark in response to question 17, saying, "It made you feel better about yourself to watch somebody else." She reiterated a similar sentiment in response to question 20, stating, "I saw the same problems that I have she has and [that] made me feel like, 'Okay, it's not just me'". Charles' contribution to this line of thought was, "It made me think that most classrooms are pretty much the same. You know, problems I have in my classroom other teachers are having in theirs…" In his answer to question 22, Charles also commented, "It helped me feel better". Diane stated in her response to question 20, "Having somebody else see me in action and getting positive feedback from them I think definitely boosted my confidence."

In contrast to the paucity of data on affirming practices, data associated with practice alteration occurred frequently throughout responses to the interview and reflection questions. Question 23 specifically asked participants if peer coaching altered their practices. Alice did not answer affirmatively or negatively, but responded by describing how she rearranged student seating. Betty's response was "not really". However, it is clear from the remainder of her

response that Betty did not address the intent of the question. Instead, she referred specifically to how having a peer observer impacted her normal classroom procedure, not to alteration of her practices in general. Her reply was, “I would have done the same lesson if I had a peer coach there or not. The same thing was planned, so I don’t think I would really change what I was doing.” Both Charles and Diane responded affirmatively to question 23, indicating that peer coaching altered their practices. Table 6 displays evidences of alteration of practice detected in the data.

Table 6

Data Relevant to Evidence of Alteration of Practices

Intern	Responses associated with altering practices
Alice	Q19: "I started moving around the classroom more to see what's going on I the back" Q23: "Just the movement in the classroom, moving students that were in the back of the class forward to get them more involved".
Betty	Q9: "It kinda put me in her shoes, and I applied it to my own classroom and what would do with the same kind of issues." Q15: "I looked at it and kinda realized what students I want to focus on more for my following lessons" Q16: "Just made me realize how I want to be more strict and have more uniform rules for raising your hand and having me call on you and not put up with people just shouting things out whenever they want to." Q19: "just trying to have kids raise their hand when they have a question" Q19: "So I tried to have a good lesson and look like a good teacher." Q21: "Having your peer there definitely made me more focused and have more desire to have a really good lesson." Q23 "But having someone there kinda changed my enthusiasm and the way I constructed the classroom a little bit more." QR-3: "I feel like I tried extra hard that day to run a great class"
Charles	Q7: "it helped her with asking them questions or asking them questions about notes or stuff they were taking"

Q9: “maybe by talking to them it can help me figure out better ways to set my classroom up or even deal with problems.”

Q16: “I wanted to try harder at that [treating all students fairly], and I think it made me recognize more where that wasn’t taking place and to which students and then I tried to fix that.”

Q19: “it let me recognize where I wasn’t doing that [treating all students fairly] and to whom I wasn’t doing it”.

Q21: “when you fix a problem that really messes with you…when you fix those problems you’re just happier”

Q23: “It made me start calling more on students that I would normally, especially the ones that were the talkative bunch. That way when they figured out that I was going to start calling on them, they started paying attention a little more and stopped talking.”

QR-3: “Peer coaching helped me treat all of my students the same. I did not know if I was calling students down for talking the same or if some were getting away with talk more than others. I started calling students down for talk and did it the same way for all.”

Diane

Q9: “So it definitely affected me because after I saw her and really took notice of that [students not raising hands to be recognized] I started taking notice of it in my own classroom.”

Q16: “It definitely had an impact because the issue that we were looking at was something that I had tried to improve on as I’ve been student teaching, and after she kinda really showed me what I was doing I was really able to be conscious of it and try to make changes.”

Q19: “so I definitely afterwards have tried to be a lot more aware of when I do that, “Just a minute, I’ll be with you!’" I tried to go in order and be fair about the way I address questions in class.”

Q23: “It helped me figure out how can I delay that question so I can finish my thought without blowing off their question. So I definitely was able to work on that.”

Themes Relevant to Unfavorable Aspects of the Study

The researcher posed two questions to ascertain any negative aspects or outcomes of the study. In response to question 18, Alice, Betty, and Diane each commented that they had no frustrations or disappointments with the peer coaching process. However, Charles expressed a personal concern. Asserting that he was able to predict the outcome of the data analysis, Charles said, "I guess I was frustrated because I knew what the data was going to say. That's why I was frustrated."

Question R-2 asked participants to discuss any negative aspects of the coaching experience. Unfortunately, Alice did not respond to any of the reflection questions and therefore did not contribute data. Betty stated, "I can't say anything negative about it. Everything was a positive." Charles replied, "One thing with any observation [is] students seem to act better and it is hard to see the problem when that happens." Diane responded to each of the reflection questions except R-2 and R-5.

Question R-4 gave participants an opportunity to discuss why their practices may have remained unaltered. Betty replied, "The overall data I collected didn't really alter my teaching practices." However, this answer is inconsistent with other responses attributed to Betty (see Table 6). Charles responded that his peer coaching experience "changed [his] teaching practice in the area [he] was being coached", a response that is incongruent with the question. Diane did not respond to this question.

Additional Themes

In addition to the major themes previously noted, additional themes recurred in varying degrees in the data. Relevant comments accompany a brief discussion of some of those themes.

Using peer coaching under other circumstances was one recurring theme. Question 24 addressed this theme directly by asking participants if they would be interested in participating in peer coaching again. Each respondent replied affirmatively. Alice added, "I'd have them look at other things." Betty said, "I will definitely do it again", a sentiment that was repeated by Charles and Diane. Diane specified that she would use peer coaching "in another semester with other students and in dealing with different issues, because each class comes with its own issues." Also addressing the theme of using peer coaching again, question 17 asked participants how peer coaching might be useful to them in the future. Neither Alice nor Betty offered possibilities for future use. Instead, Alice explained that that being an observer in another classroom was enlightening, and Betty discussed several aspects of the process that she liked. Charles explained that he could easily teach another teacher to come into his classroom to observe him and to assist him in solving classroom issues. Diane echoed Charles' ideas, remarking that she might enlist a peer coach to help solve classroom problems instead of always relying on a formal administrative observation.

Anxiety level was addressed frequently. Betty asserted in response to question 17 and again to question 25 that she felt relaxed and that the process was devoid of "any sort of pressure". In question 25 she commented, "We're always having, you know, big scary adults come in and watch you and the pressure's on…. It was really, really, way more relaxed." She continued to expound on this theme in her answer to question R-3 by saying she felt very comfortable teaching in front of her peer. In response to question 25 Diane commented that peer coaching is "a really relaxed feeling". Responding to question R-1 she said, "There was not pressure from my peer coach." She concluded her response to question R-5 by saying, "It is a very stress-free way to look at concerns you are having about your classroom."

Another theme that evolved from the data was the ease or difficulty of implementing peer coaching. Responding to question 18, Betty commented twice on this theme, saying, "It was real easy to set up" and "It was very simple and very informative, too." She repeated that sentiment in her response to question 25 and again in question R-1 where she asserted, "Peer coaching was easy to coordinate. My partner and I had to do minimal preparation to take part in the experience. It hardly required any planning." Question R-5 gave Betty a final opportunity to say, "It required no planning or work for me, which was great." In his response to question 25, Charles described peer coaching by stating, "It's simple and can be explained really, really easily." His response to question R-5 was, "It is very easy to teach others how to do it."

Data indicated that several interns compared peer coaching to being observed by a supervisor. Betty responded to question 17 by saying she "liked watching someone my age versus watching someone who has like a million years of experience". Diane reported in her answer to question 20 that she enjoyed having feedback from someone other than her supervising teacher. She commented in question R-1, "I liked being able to focus on that rather than on a grade or an administrator's critique." In her response to question 25, Diane remarked, "It wasn't like when someone comes from UNCW and is determining whether you're getting an "A+" or a "B" or keeping your job or being criticized."

Participants also mentioned their level of satisfaction with the peer coaching process. Betty stated very succinctly in her answer to question R-5, "I thought the peer coaching process was fun." In response to question 25 Charles said he "really enjoyed learning about it".

Other notable themes were collegiality and camaraderie with peers. Betty asserted in question R-1, "When I watched Diane I was happy to see that her students talked without permission too!" Charles commented in question R-5, "I think this is a great way for teachers to

help each other." Diane enjoyed seeing Betty transition "from how she is as a 'regular person' to a teacher, which is something we've both been dealing with this semester".

Chapter Summary

Chapter 4 presented the results of the analysis of data collected for this thesis study. Emergent themes included data relevant to the purpose of the study, training for the study, key elements of peer coaching, effects on practices, unfavorable aspects, and miscellaneous themes. Chapter 5 utilizes these findings to discuss conclusions and implications of this study.

CHAPTER 5: CONCLUSIONS AND RECOMMENDATIONS

Introduction

Chapter Four presented results and findings of this thesis study. This final chapter discusses conclusions from those findings. In addition, Chapter Five considers limitations and delimitations that may have affected the study, reveals implications of the study for pre-service teacher education, and includes recommendations for future research.

Discussion of Conclusions

The results of this study suggest that peer mentoring is a process that is simple to teach, easy to learn, and positively viewed by the participants. In addition, results indicate that pre-service teachers engaged in peer coaching are able to evaluate classroom practices and to positively alter those practices. Discussion of data relevant to these results follows the same order used to present the results in Chapter Four.

Evidence of Training

Examination of the data indicated that the training for this study provided an initial introduction to peer coaching for each of the participants. Comments from participants indicated that none of the four individuals had previously engaged in peer coaching as defined in this study. The researcher therefore concludes that results attributed to peer coaching can be attributed primarily to the training utilized in this study and experiences resulting from the study.

Having established that participants had not previously engaged in peer coaching, the researcher looked for evidence to ensure participants understood the purpose of the peer coaching process. When asked to explain the purpose of peer coaching, each intern gave a statement explaining the peer coaching process. Using different terminology, each participant clearly highlighted some of the key elements associated with peer coaching. In addition, all

interns responded affirmatively when asked specifically in question 4 if they understood the peer coaching process. Thus the researcher concluded that each participant, after receiving initial training, began the study with an adequate understanding of the peer coaching process.

After searching for basic understanding of the peer coaching process, the researcher examined the data to find evidence that participants felt adequately trained to peer coach. Adequate training was a concern because the training for this study included only one formal session, followed by written instructions and reminders (see Appendixes D and G). The researcher posed two questions (3 and 11) to examine the adequacy of training. Affirmative responses to question 3 indicated that each participant felt prepared to peer coach. Likewise, responses to question 11 indicated that participants perceived their peer coaches to be adequately trained. Additional comments presented in Table 1 refer positively to clarity of the training instructions. These comments also indicate that participants felt confident to peer coach. The researcher therefore concluded that participants were adequately trained to understand the essential characteristics of peer coaching. However, the researcher acknowledges that certain aspects of the training process might merit further scrutiny and possible revision and discusses suggestions for improving the training in "Recommendations".

Evidence of Key Elements

Next the researcher examined the data for evidence of the key elements of peer coaching. The purpose of this examination was to help determine progression from understanding the theory of peer coaching to putting that understanding into practice. A search for themes relevant to the key elements of peer coaching revealed a plethora of comments. Some elements were more evident in the data than others.

As established in the literature review, building trusting relationships is considered to be a primary step for establishing a viable peer coaching partnership. Table 2 reveals that data indicating the formation of trusting relationships was sparse. Neither Alice nor Charles contributed comments indicating that they had formed such a relationship. However, Betty and Diane made similar remarks, each indicating that she was comfortable working with her peer coach. Several factors may have contributed to the scarcity of data related to building trusting relationships. Because participants engaged in only one peer coaching cycle, it is possible that they did not have the opportunity to form meaningful bonds that might have emerged from extended interaction. It is, however, also interesting to note that the interns who requested pairing indicated at least some level of comfort with each other, while the pair that was assigned without request did not indicate that comfort level.

In addition, other circumstances may have influenced the comfort level experienced by Betty and Diane. They taught on the same hallway, shared mutual planning periods, and taught in the same discipline, factors that may have allowed them to become better acquainted outside the parameters of the study. In contrast, Alice and Charles taught in different parts of the school building, did not share the same planning period, and did not teach in the same discipline. Based on the data presented and consideration of these influences, the researcher surmises that this study did not foster ideal peer relationships. However, other key elements of peer coaching were evident and are discussed individually.

Evidence of post-conferencing is inherent in comments made by participants about their meeting to analyze and reflect on observation data. Therefore, only pre-conference data is discussed in this section. All responses to questions 5 and 12 were affirmative, indicating that each individual participated in pre-observation conferencing prior to observing a peer and prior

to being observed. Participant comments indicate that pre-observation conferences occurred in face-to face meetings or through e-mails. Table 3 displays data associated with conferencing. An examination of that data reveals comments primarily related to pre-observation conferencing. Comments indicate that all candidates conferred with their peer coaches and established the focus of upcoming observations. The researcher concluded that each candidate sufficiently utilized pre-observation conferencing prior to completing observations and collecting data.

Without observations and data collection, peer coaches have no basis for reflecting on and altering practices. In peer coaching, the purpose of observations is to gather data, and data is collected during observations. Therefore these two elements are somewhat inseparable and were examined together. Table 4 displays at least three comments from each participant indicating the incorporation of observations and data collection in the peer coaching process. Participant comments in Table 4 indicate that each person observed a peer and collected data. Comments also illustrate that the specific data that was collected was predetermined in the pre-observation conference. Additional comments by Alice, Betty, and Charles emphasize clear, in-depth understanding and implementation of the principles of observation and data collection. Further evidence of data collection exists in the samples of raw data collected by each participant, found in Appendixes I, J, K, and L. As noted in Chapter Four, participants chose different techniques for gathering their raw data. Examination of these sets of raw data indicates that participants had specific and predetermined goals in mind as they collected the data. This evidence of goal-oriented data collection signifies and reiterates understanding of the data gathering process. Based on participant responses, the researcher concluded that each intern was successful in collecting data while observing a peer.

A final examination of themes relevant to key elements of peer coaching considered data relevant to implementing analysis and reflection. Again, each participant contributed multiple comments indicative of analyzing and reflecting on the observation data. Throughout the responses the researcher found persistent use of terms and phrases indicating that participants were engaged in analysis and reflection. Examples of comments indicating analysis and reflection are: "I…noticed", "I was a lot more aware", "talked about it", "I saw", "it allows you to…find solutions", "we discussed it afterwards", "we really went through it", "I explained", "something that I actually hadn't ever thought about", "went through and explained", and "we both discussed how we could change that". Betty's response to question 14 clearly indicates that she succinctly analyzed the data from her observation and that she clearly reflected on its implications for changing her practice.

In summary, with the exception of building trusting relationships, there is ample evidence in the data to indicate that participants successfully implemented the key elements of peer coaching as they participated in this study. Therefore, having examined the effectiveness of the training, the researcher considered data relevant to the impact of peer coaching on the practices of the participants.

Evidence of Affirmation or Alteration of Practices

The primary focus of this study was the effects of peer coaching on the teaching practices of the participants. In the following discussion, the researcher discusses data relevant to both affirmation and alteration of practices.

As noted in Chapter Four, comments from participants implied that each person felt affirmation of feelings about performance in the classroom. However, there is no indication of affirmation of practice. The researcher asserts that the lack of evidence for affirming practices is

likely attributable to the limited classroom experience of the pre-service teachers. It is conceivable that lack of experience resulted in an inability to acquire confidence in and affirmation of classroom practices. Therefore, it seems reasonable to conclude that data may not indicate affirmation of practices because the interns are in the initial stages of learning viable practices and essentially had few practices to affirm. Even though there is no indication that practices were affirmed, it is noteworthy that all participants contributed positive comments relevant to affirmation of personal feelings about their teaching.

There was, however, considerable evidence that participants altered or understood how to alter their classroom performances. The researcher intended question 23 to elicit affirmative or negative responses per alteration of practices. Alice's comments indicated an affirmative answer, and Charles and Diane each answered affirmatively. Based on Betty's response, she either misinterpreted or misunderstood question 23. However, Table 6 displays numerous comments relevant to reflection on practice or alteration of practice. Data in Table 6 also indicate that each participant commented on altering practice and that Betty, Charles, and Diane each contributed several responses. The researcher concluded from this collection of data that the peer coaching experience described in this study was influential in altering the practices of pre-service teachers.

Additional Conclusions

Several other interesting themes emerged from this study. One important discovery is that each participant positively perceived both the study and the peer coaching process. The researcher asked three questions in an attempt to reveal any negative aspects of the study. None of the participants responded negatively, although two participants commented on personal concerns. Therefore, it appears that each of the participants found both the study and the peer coaching process appealing.

Further confirmation of satisfaction with this peer coaching experience is evident in several miscellaneous themes that appear in the data. Each participant affirmed a desire to use peer coaching again, and each person stated that the process could be useful in the future. Betty and Diane each remarked that peer coaching was easy to understand and to implement. In addition, Betty commented that peer coaching was fun, and Charles stated he "enjoyed learning about it". It seems likely that a process that is satisfying to the participants might be successful in achieving its goals. Kettle and Sellars (1996) concluded that positive peer interaction "models for students the process of collaborative professional development which may encourage them [student teachers] to continue such collaboration with colleagues when they become teachers" (p. 23). Thus an additional benefit of peer coaching might be the extension of peer collaboration into the actual teaching career. It is feasible that this positive experience may encourage the participants to engage in peer coaching again when they acquire their own classrooms.

Finally, data indicates that interns liked the peer coaching process because it was "stress-free" and afforded them an opportunity to communicate with and observe their peers. Participants who compared peer observations to observations by university instructors or supervising classroom teachers indicated that they particularly enjoyed receiving feedback from their peers. Confirming the appeal of peer relationships, Betty, Charles and Diane each commented that they enjoyed the camaraderie with their peers.

In summary, the researcher concluded from the data that this thesis study provided a first time experience with peer coaching for each participant. It seems that each participant sufficiently understood the purpose of peer coaching and that training was evident and adequate for the scope of this study. With the exception of building trusting relationships, participants demonstrated use of the key elements of peer coaching. Although there was no evidence that

teaching practices were affirmed, there is evidence to confirm that teaching practices were altered. Overall, participants perceived both this study and the peer coaching process positively, indicating they might use the process again in the future.

Limitations and Delimitations

Patton (2002) asserts, "The researcher or evaluator is obligated to discuss how the sample affected the findings, the strengths and weaknesses of the sampling procedures, and other design decisions that are relevant for interpreting and understanding the reported results" (p. 246). In an attempt to meet those obligations with integrity, this section discusses both the limitations and the delimitations of this study.

As noted elsewhere, Alice scheduled her exit interview prior to a post-observation conference with her peer coach. Thus the untimely interview conducted with Alice presents a special limitation for this study. Had Alice completed the final interview after participating in a post-observation conference with her peer coach, she might have given different responses. In addition, it has been noted that Alice did not verify her interview responses. It is probable that she may have altered some of her responses had she reviewed them. Finally, Alice did not respond to any of the reflection questions. It is entirely possible that altered or enhanced feedback from Alice may have enriched the data.

As noted in the presentation of the data in Chapter Four, the respondents misinterpreted several interview questions. Misinterpretation is evident in Alice and Betty's responses to question 7, Betty's response to question 23, and Betty's response to question R-4. Although responses to those questions ultimately yielded data relevant to the study, the researcher acknowledges that greater care and expertise in crafting interview and reflection questions may have helped to elicit more definitive information.

Another limitation specific to one particular participant is noteworthy. The participant reported feeling nervous during the audio taped interview. As a result, some responses from that participant appeared to be somewhat curtailed, and some responses were difficult to assess for meaning. Although the researcher could not easily control this situation, its occurrence might indicate that in future research the researcher should be careful to build relationships with participants to ensure a maximum comfort level for interviewees.

Other limitations present in this study include the inability of the study to measure enthusiasm for the study. It is probable that some of the participants were more seriously engaged in the peer coaching process than others. Although each person seemed agreeable to the study, the researcher could not control or measure the enthusiasm of the participants as they pursued the process.

In addition, the researcher was unable to gauge the impact that other commitments might have had on this study. Interns participated in this study during the final weeks of their intern experiences. During that time period, university requirements obligated each participant to successfully complete the internship and to finalize commitments for university classes. Although participants indicated that the experience was simple to implement and complete, the participants may not have given peer coaching their full attention.

Finally, although participants indicated that this was their first experience with peer mentoring, other factors may have influenced the apparent alteration of practices. Just as Hasbrouck (1997) noted in discussing the limitations of her study, the design of this thesis study does not clearly indicate that all effects on practices can be assigned to peer coaching. In particular, teaching experience acquired during the field experience may have affected the facilitation of the changes in practices. In a similar manner, it is not possible to ascertain

whether the relationship between Betty and Diane existed as a result of their collaboration for this study or because of other variables. As indicated earlier, those variables included teaching in the same discipline, sharing mutual planning periods, and teaching on the same hallway.

Sample size is a delimitation of this study. Although Patton (2002) maintains that convenience sampling "yields information-poor cases" (p. 244), time constraints for this study did not permit inclusion of a larger sample size. However, the researcher acknowledges that using more than four participants would certainly have added to the volume of the data and might have contributed to the depth of the data.

Another delimitation is limiting the study to one site. Including pre-service teachers from different school environments (other high schools, elementary schools, etc.) may well have enriched the data or possibly contributed conflicting data.

In addition, although every effort was made to avoid bias, it is possible that the researcher may have exerted some unintended influence on the outcome of the study. Because the researcher teaches at the site of this study, it is conceivable that her association with the participants might have influenced some aspect of the study.

Data presented in Table 5 indicate that participants shared the responsibility of analyzing and reflecting on the data collected during observations. The literature review in Chapter Two affirms that it is most ideal for the person observed to take the lead in the post-observation conference activities. In other words, the peer coach should merely guide the conversation and not offer conclusions (Jenkins, et al., 2002). It is possible that more explicit instructions in the training phase might have clarified the roles of the participants for the post-observation conference and avoided this delimitation. The researcher recommends that future studies consider emphasizing expectations for peer coaches in the post-observation conference.

Patton (2002) points out that time constraints can affect the data collected for a study and the analysis of that data. Therefore, a final delimitation of this study might be the brevity of the study and the scope of the peer coaching experiences. From training to data collection, the study encompassed approximately six weeks. In addition, each participant completed only one coaching cycle. The researcher therefore acknowledges that extending the study and allowing more opportunities for peer coaching might have added to the depth and implications of the data.

Any of these limitations and delimitations might have influenced the outcome of this study. The researcher recommends that each limiting and delimiting factor be carefully considered in an evaluation or adaptation of this study.

Implications of this Study

This study indicates that peer coaching can effectively alter classroom practices for emerging teachers. Data also indicate that participants in this study enjoyed learning about and participating in peer coaching and that the peer coaching process is easy to implement and complete. Therefore, the researcher recommends that peer coaching be added to the undergraduate curriculum for teacher education at the Watson School of Education at the University of North Carolina Wilmington. Addition of peer coaching to the existing teacher preparation curriculum might easily provide a means to instill new teachers with quality practices before they enter the teaching profession.

However, certain aspects of peer coaching should be considered prior to incorporating peer coaching into pre-service teacher instruction. One consideration relates to the timing of instruction and training for peer coaching. The results of this study concur with the results of Bowman and McCormick (2000), who concluded that peer coaching could be learned and incorporated by pre-service teachers in a short span of time, contrary to conclusions from the

initial studies of Showers and Joyce (1996). However, Forbes (2004) concluded that teachers already in the classroom found the time commitment for peer coaching to be "problematic" (p. 235). The time commitment conflict described by Forbes (2004) would also seem to apply to interns in a field placement who have the same classroom responsibilities as licensed teachers. Therefore, the researcher recommends that training for peer coaching would likely be most effective prior to the intern semester, allowing interns time to learn and test the principles of peer coaching before actually using them in the intern field experience. In her study of pre-service teachers, Hasbrouck (1997) found that early introduction to data based critiques of teaching practices positively impacted self-confidence and sense of professionalism, traits that could help build a foundation for facilitating the alteration of instructional practices.

Jenkins et al. (2002) presented several excellent elements that might be easily and quickly incorporated into pre-service teacher instruction on peer coaching. For instance, they found that early in the training process pre-service teachers experienced difficulty discerning important elements that should or could be observed. Taking a cue from the experiences of Jenkins et al. (2002) at the University of Wyoming, this researcher recommends that in the early training stages, university instructors should provide simple data collection instruments that could expedite understanding of the data collection phase of peer coaching. Other appealing aspects of the Jenkins et al. (2002) model that could be easily implemented include introducing the concepts of peer coaching in phases, increasing the responsibilities of peer coaches as they progress through each training phase, and providing concrete measures for achieving the goals of the coaching process.

Although data from this thesis study indicate that participants altered practices as a result of using peer coaching, the researcher echoes the concern expressed by Hasbrouck (1997) that

inexperienced pre-service teachers might lack sufficient experience to discern quality in classroom practices. In addition, Ling Li (2004) noted, "When the teachers observed 'new' activities in colleagues' classrooms, they judged the new practices according to whether or not they 'work'" (p. 150). Lack of experience and discernment could be problematic for pre-service teachers in determining best techniques for altering practices. Therefore, it seems prudent that the peer coaching process should be periodically monitored and evaluated by supervising professors or teachers in order to maintain integrity and excellence. This monitoring should occur in both the instructional phase in the undergraduate classroom and in the implementation phase during the field experience.

Based on the limitations discussed earlier, the researcher recommends caution in generalizing the results of this study to other settings. However, there is sufficient evidence from this thesis study to indicate that peer coaching offers a relatively simple technique that may help pre-service teachers assess and alter their practices. In addition, participants seem to like the simplicity of peer coaching. Contingent on further study as suggested below, using peer coaching appears to be a viable means to instill or alter classroom practices for pre-service teachers.

Recommendations for Future Research

Although this study implies that peer coaching is a valuable tool for pre-service teachers, altering or adding certain elements might enrich the data and add to the findings of this study. As suggested in the delimitations, including a larger sample size and utilizing multiple sites might expand the data. In addition, increasing the magnitude of the sample might open possibilities for incorporating quantitative data instruments. Using quantitative data-gathering techniques would create an interesting opportunity to compare the qualitative data accumulated in this study. The discussion of the data for this study revealed that interns in the same academic discipline

indicated that they had initiated a trusting relationship, whereas the other pair of participants did not imply that a trusting bond had developed. Future studies might evaluate the effects of peer coaching on teaching practices by focusing on criteria for formation of peer pairs.

Summary

This study addresses the question: Is there a relationship between teacher interns participating in peer coaching exercises and their practices in the classroom? The qualitative data gathered in this study indicate that there is a relationship. Data indicate that pre-service teachers can easily implement peer coaching and can use it to assess their classroom practices. More importantly, data indicate that peer coaching is a tool that allows pre-service teachers to contemplate their classroom practices and consequently to alter their classroom practices. Incorporated into an undergraduate curriculum and subsequently used in an intern experience as recommended earlier, peer coaching seems to be a promising tool for helping to define and affirm quality practices for pre-service teachers.

In closing, it is worth noting that ascertaining cause and effect in educational processes is often difficult. Musing on the elusive nature of change in education, Sagor (1996) wondered if collaborative efforts precede successful changes in education or if successful change elicits collaborative effort. Likewise, even though this thesis study indicates that peer coaching can alter practices, it is reasonable to argue that the quality of observed practices might easily influence the effectiveness of peer coaching. It is certainly not within the scope of this study or the abilities of this researcher to resolve this variation of the ancient question of whether the "chicken precedes the egg". However, the researcher believes that the possibility of changing pre-service teacher practices by using peer coaching does merit further research and practical application.

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Appendix A. Letter giving permission to use site school for study.

February 15, 2006

This letter is to give my consent and support for Linda R. Britton, graduate student at the University of North Carolina at Wilmington, to use _____ High School as a site for the educational research activities outlined below. This study is in compliance with _____ County Schools Board of Education Policy #2240 (Relations With Education Research and Service Centers). A copy of that policy is attached to this letter.

- The study will include UNCW students who are completing teaching internships at _____ High School during the Spring 2006 semester.
- These UNCW interns will be trained to understand and to participate in peer coaching.
- These students will be given the opportunity to actively participate in a study of the effects of peer coaching on classroom practices.
- After participating in peer coaching, each intern will be interviewed.
- Interviews will follow a scripted set of questions as outlined in the IRB protocol form submitted by Ms. Britton.
- Each interview will be recorded on audiotape for purposes of future transcription and analysis.
- The researcher will conduct a member check to affirm the accuracy of the transcription of the interviews.
- Members of the study will complete a brief reflection on their peer coaching experiences.
- The researcher will analyze all data to determine if there is a relationship between participating in peer coaching and the practices of pre-service teachers.
- If results of this study indicate that peer coaching is beneficial for pre-service teachers, recommendations will be made to include peer coaching in UNCW methods courses.
- _____ County school personnel will be given access to the results of this study in order to consider the benefits of peer coaching for new teachers.
- The study will begin in March 2006 and will conclude in May 2006.
- Participants in the study will be protected by confidentiality measures as listed in the IRB protocol form submitted to and approved by the UNCW IRB.

Principal

_____ High School

File: 2240

RELATIONS WITH EDUCATION RESEARCH AND SERVICE CENTERS

The superintendent is authorized to cooperate insofar as possible with colleges, universities, and other recognized research agencies in promoting potentially useful research. Because of the school system's proximity to the University of North Carolina at Wilmington, there is the potential for unusually large numbers of requests for studies in our schools. Accordingly, it may be necessary to limit the number and establish guidelines for the approval of studies. Generally, decisions in connection with research involving students, teachers, or other employees will be influenced by the following factors:

1. The objectives of the research should be clearly stated and the design should produce valid and reliable results which will then be made available to the schools of this district.
2. The research should be expected to contribute to the improvement of education or the general welfare of children.
3. Data derived from school records, interviews, or questionnaires which have potential for invasion of the privacy of students or their families must have advance written authorization of parents or guardians even though the data are to be collected and reported under conditions of anonymity.
4. Research proposals should be of sufficient scope and depth to justify the time and effort of students and staff members.
5. In general, instructional activities will not be interrupted unless there is a clear significance for the educational program of the schools.
6. Projects involving student researchers must have prior written approval by a faculty member of the institution in which the student is enrolled. This faculty member must assume direct responsibility related to the student's research.

Current practice codified 1986
Adopted: 04/14/87
_____ County Public Schools, _____, North Carolina

Appendix B. Samples of materials used for training session

KEY ELEMENTS OF PEER COACHING:

1. ESTABLISH A PEER RELATIONSHIP

2. PLAN A COACHING SESSION:
   - Decide what data will be collected
   - Agree on a time for a classroom observation

3. OBSERVE A LESSON AND GATHER DATA

4. ANALYZE DATA

5. REFLECT ON IMPLICATIONS OF DATA

What Teachers Want Observed

Teachers generally request that coaches observe two rather distinct categories of behaviors: their own and their students'. The following is a list of verbal and nonverbal behaviors, with examples of factors teachers most often want coaches to observe in the classroom.

VERBAL FEEDBACK ABOUT STUDENTS

1. Positive Participation
   - Volunteering responses
   - Speaking out while on task
   - On-task student-to-student interaction
   - Requesting assistance
2. Negative Participation
   - Speaking out while off task
   - Off-task student-to-student interaction
3. Positive Social Interaction
   - Taking turns
   - Listening and allowing for differences
   - Sharing and establishing ground rules
   - Assuming and carrying out roles
   - Following rules of games, interactions
4. Negative Social Interaction
   - Interrupting, interfering, hitting
   - Name-calling, put-downs, racial slurs, foul language
   - Hoarding, stealing
5. Performing Lesson Objectives
   - Using correct terminology
   - Applying knowledge learned before or elsewhere
   - Performing task correctly
   - Conducting experiments
   - Applying rules, algorithms, procedures, formulas
   - Recalling information
   - Supplying supportive details, rationale, elaborations
6. Language Patterns
   - Using correct syntax
   - Using correct grammar, spelling, and punctuation
   - Using correct numbers and mathematical terms
   - Supplying examples
7. Insights Into Student Behaviors and Difficulties
   - Learning styles: verbal, auditory, kinesthetic
   - Cognitive styles: field-dependent, field-independe
   - Friendships, animosities
   - Tolerance for ambiguity and chaos
   - Distractibility

NONVERBAL FEEDBACK ABOUT STUDENTS

1. Attentiveness
   - On task, off task
   - Note taking
   - Volunteering for tasks
2. Preparedness
   - Participation
   - Sharing
   - Homework
   - Materials
   - Volunteering knowledge
3. Movement
   - Negative: getting out of seat, squirming, fidgeting, causing discomfort, interfering with others
   - Positive: following directions, transitioning, following self-direction, taking initiative, consultin reference books
4. Managing Materials
   - Audiovisual equipment, textbooks, art supplies, musical instruments, lab equipment
   - Care of library books
   - Returning supplies

NOTE: This information is from Appendix B of *Cognitive Coaching: A Foundation for Renaissance Schools*, Costa and Garmston (2002). Reprinted with written permission form Christopher Gordon Publishers, Inc., Norwood, Massachusetts.

VERBAL FEEDBACK ABOUT TEACHERS

1. Mannerisms
   - Saying "okay" or "ya know"
   - Nodding the head excessively while speaking
2. Sarcasm During Negative Feedback
   - Gender references
   - Criticism
   - Put-downs
   - Critical intonation of voice
3. Other Positive and Negative Feedback
   - Use of praise and criticism
   - Ignoring distracting student responses
4. Response Behaviors
   - Silence
   - Accepting, paraphrasing, clarifying, empathizing
   - Responding to students who give "wrong" answers
5. Questioning Strategies
   - Posing questions at appropriate taxonomy level
   - Asking questions in sequence
6. Clarity of Presentation
   - Giving clear directions
   - Clarifying assignments
   - Checking for understanding
   - Modeling
7. Interactive Patterns
   - Teacher to Student to Teacher to Student
   - Teacher to Student to Student to Student
8. Equitable Distribution of Responses
   - Favoring gender
   - Favoring language proficiency, race, perception of abilities, placement in room
9. Specific Activities, Teaching Strategies
   - Lectures, group activities, lab exercises, discussion
   - Movies, slide shows

NONVERBAL FEEDBACK ABOUT TEACHERS

1. Mannerisms
   - Pencil tapping
   - Hair twisting
   - Handling coins in pocket
2. Use of Time
   - Interruptions
   - Transitions from one activity to another
   - Time spent with each group
   - Time spent getting class started (e.g., dealing with routines such as attendance)
   - Punctuality of starting and ending times
3. Movement Throughout the Classroom
   - Favoring one side of the room over another
   - Monitoring student progress and seat work
4. Modality Preference
   - Using balanced visual, kinesthetic, and auditory modes of instruction
5. Use of Handouts
   - Clarity, meaningfulness, adequacy, or complexity
6. Use of Audiovisual Equipment
   - Placement, appropriateness, operation
7. Pacing
   - Too fast, too slow, "beating a dead horse" (tempo, rhythm)
   - Coverage of desired material in time allotted (synchronicity)
   - Time spent in each section of lesson sequence (duration)
8. Meeting Diverse Student Needs
   - Making allowances for gifted, slow, cognitive styles
   - Considering emotional needs, modality strengths, languages, and cultures
9. Nonverbal Feedback
   - Body language, gestures, proximity
   - Moving toward or leaning into students when addressing them
   - Eye contact
10. Classroom Arrangements
    - Furniture placement
    - Bulletin board space
    - Environment for learning
    - Provision for multiple uses of space

NOTE: This information is from Appendix B of *Cognitive Coaching: A Foundation for Renaissance Schools*, Costa and Garmston (2002). Reprinted with written permission form Christopher Gordon Publishers, Inc., Norwood, Massachusetts.

This paragraph is a brief description of data gathered during an initial observation of a university intern. The following page displays the raw data collected during that observation.

In the pre-conference for the first coaching cycle _____ expressed an interest in seeing how he handled off-task questions. I gathered data for him that showed which students asked off-task questions and the content of their questions. I also recorded his responses to those questions. _____ analyzed the data to determine whether he was able to remain focused on the lesson when inappropriate questions were asked. He was able to use that information to increase his consciousness of the need to remain on task, and he developed a special e-mail address where students could channel their off-task questions.

(approximately 20 minutes)
Questions monitored during class discussion only) 9/22/04

Q's	On Task	Off Task	Student	(Q Content / Teacher Response)	Teacher Remained on Task
1	✓	—	Ben	—	—
2	✓	—	Gene	—	—
3	✓	—	Ben	—	—
4	✓	—	Ben	—	—
5	✓	—	Chelsea	—	—
6	✓	—	Boyce	(Refocus to picture)	—
7	—	✓	Ben	(monitor) *Continued W/O comment	YES
8	—	✓	Christen	(Halogen light bulbs) *Gave website to check	YES
9	✓	—	Boyce	—	—
10	✓	—	Ben	—	—
11	—	✓	Christen	(How are they Eng. I or Schools) *"Shows periodic trends" (Wilkes 57)	YES
12	—	✓	Christen	- Continued W/O comment	YES
13	✓	—	Alleigh ?	—	—
14	—	✓	Christen	(F what Z spoken out) - continued W/O comment	YES
15	✓	—	Chelsea	—	—
16	—	✓	Christen	(what happened to 7P?) - continued W/O comment	YES
17	✓	—	Boyce	—	—
18	✓	—	Ben	—	—
19	✓	—	Christen	—	—
20	✓	—	Boyce	—	—
21	✓	—	Staci	—	—
22					
23					
24					
25					
26					
27					

Note: [redacted] completed this column together. The rest (to the left of the line) is what I collected

This paragraph is a brief description of data gathered during a second observation of a university intern. The following two pages display the raw data collected during that observation.

In the second coaching cycle, _____ decided to again look at questions, but this time he wanted to look at how student questions related to the lesson. He was especially interested in looking at questions that were repeated. As I gathered data I recorded the gist of all questions that were asked within a fifty-minute time-span. Along with question content I included the name of the student who asked each question. _____ analyzed that data and determined that some questions were repeated and several questions were repeated more than once. After in-depth reflective questioning he was able to discern that many of the repeated questions came from students who were talking or otherwise not engaged in the lesson.

(Cycle #2)

Note: 8:30 - 9:20 : Students Copying notes / Returning papers

Student	Questions Only (Not responses)	Time
Blair	What are the 1-1-1-1- ?	8:44
Mary R.	What?	8:44
Caroline	Did we need to do #40?	
Pierce	In the book... I didn't know what to put (all of 43).	
Cari	Can you move the glucose thing - I can't see.	
Alex(?)	What about #39?	
Blair	I still don't understand what the numbers mean.	
Mary R.	~~Isn't it~~ Does it have to be in a certain order?]	
Mary R.	Can the numbers be in a different order?]	
Nick	Can you do 43c?	
Blair	Why would that balance out? There are...	
Mary R.	Why do you always put hydroxide?	
Caroline	How do know what to do?	
(?)	Was that 43c?	
(?)	What about # 40	8:54
Blair/Edith	Where did the 0 come from?	
Gini	Is that balanced right there?	8:56
Pierce	Is that balanced?	8:57
Cody	Do we get to keep them (the packets)?	
Cody	Do we have to decide for each one?	
Cody	I forgot the rules	
Cody	What's precipitate?	
Cody	That means its insoluble?	9:01
	(Students giving answers to solubility q's)	
Edith	Do we just have to fill out rest of pre-lab?	9:12
Shaquandria	Second sheet?	
(?)	What? I'm so lost!	

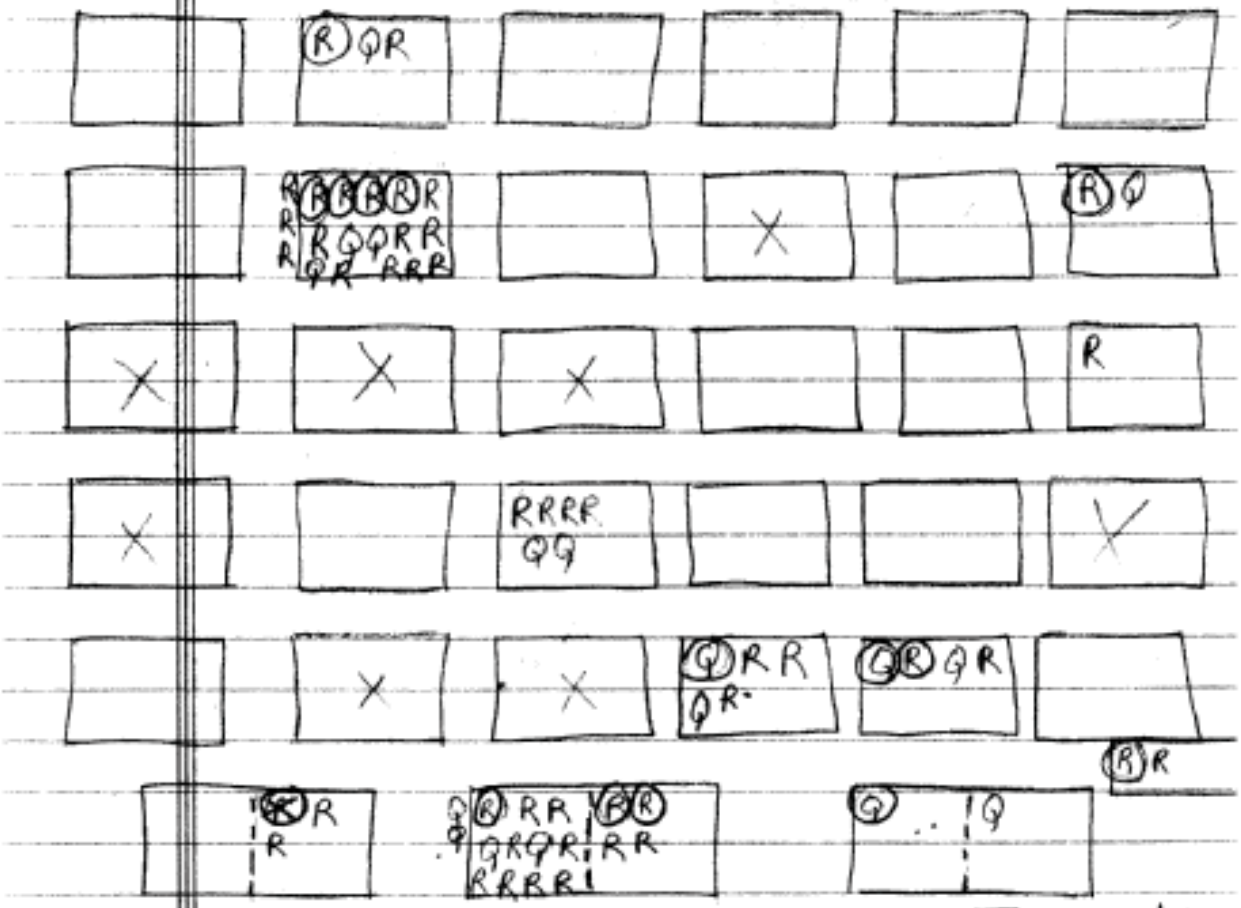
(Cycle #2)

Blair So right now - what are we doing?
Alex/Graham(?) Didn't you say we could just staple it?
Graham How are we supposed to write the procedure?
Cody Do we leave space to answer the Q's? 9:14
Mary R. We write down the proced. on p. 1, Q's on p. 2?
Graham You said we could staple it?
Sean Where do we get the procedure?
Chaquadria You said we _____? (sorry - I missed the rest of the Q!)
Alex We write down the Q's 9:16
Sean Should we be wearing our ID's
Chaquadria Do they have to be in order?
Crews Are the labs due on Monday?
Edith ~~Bob~~ our am partner? 9:20

This paragraph is a brief description of data gathered during an observation of a colleague. The following page displays the raw data collected during that observation:

At our post observation meeting my colleague indicated that she had looked over the data that I had gathered. I had already studied the data and noticed some very distinct patterns, but I asked my colleague what patterns she noticed and did not discuss my own observations. She initially commented on the data by commenting that "only a couple of students participated". Literally speaking, certainly more than two students responded during the lesson. However, I interpreted her comment to mean that only a few students were participants in the questioning and response process. She also commented that students who did not respond probably thought that they did not need to participate in the discussion. That had been very apparent to me during the lesson; I had observed that the students who were not responding were fairly disengaged from the lesson and discussion. My colleague indicated that she was not pleased with the possibility that students would choose not to participate. When I asked what she saw in the data and how it might change her teaching practices, she said that she could tell that she needed to change the seating arrangement in the classroom, moving some students to the front of the room. She also said she wanted to find a way to get more widespread class participation, but she seemed stymied for a way to do that. At that point I asked if she had used the "Popsicle" stick method. (Students names are written on Popsicle sticks and are pulled randomly from a container for responses to questions.) She said she had done that in the past but had run out of sticks. I offered to give her some sticks, since I have a generous supply in my room. At the conclusion of our meeting she said that the data had been helpful to her and that she would like to have me observe her again, perhaps during a class period other than the one that I observed for this cycle.

(Began recording responses/questions at 8:39) [X] Student was not present



(8:32 - 8:39) Students completed bellwork
(8:39 - 8:45) Discussed bellwork
(8:47 - 9:15) Notes + discussion (review)

Code:
- R - Responded to Q
- R - Had no response
- Q - Asked Q

w/ circle: Q's/R's During bellwork discussion

w/out circle: During notes/discussion review

Note: Responses include both those given in direct response to teacher Q's and those offered by students who were not singled out to answer. (Off-task responses are not included.)

10/25/05
Room 25

Appendix C. Participant consent form required by Institutional Review Board.

Consent to Participate in a Research Study

TITLE OF STUDY:
PEER COACHING: DOES IT WORK?
EXAMINING THE EFFECTS OF PEER COACHING ON THE PRACTICES OF PRE-SERVICE TEACHERS

(Linda R. Britton, Student Researcher)

What Is The Research About?
This research study is about the effects of peer coaching on the practices of pre-service teachers. If you take part in this study, you will be one of about seven people to do so.

Who Is Doing The Study?
The person in charge of this study is Dr. Kenneth Anderson (Principal Investigator) of the University of North Carolina Wilmington. UNCW Watson School of Education graduate student, Linda R. Britton, will be gathering and analyzing the information for the study.

What Is The Purpose Of This Study?
By doing this study we hope to learn if there is a relationship between participating in peer coaching and the practices of pre-service teachers.

Where Is The Study Going To Take Place And How Long Will It Last?

- The research procedures will be conducted at _____ High School.
- The study will begin in March 2006 and will conclude by early May 2006.
- Participants will attend one training session (Room 22, _____ High School). The training will last approximately 1 hour.
- Participants will peer coach another intern (in the classroom of that intern's partnership teacher). Preparing for and completing that observation will require approximately 1 hour.
- Participants will receive peer coaching by another intern (in the classroom of their partnership teacher). This activity will be performed during the normal course of your teaching duties and will not require any additional time commitment on your part.
- Participants will participate in one interview session (in a location at the site school convenient to them). The interview session will be recorded on audiotape. The interview will take approximately 30 minutes.
- Participants will be asked to check a transcript of that interview for accuracy. That review will require approximately 15 minutes.
- Participants will write a brief reflection on their peer coaching experiences (in a location convenient to them). Completing the reflection will require approximately 15 minutes.
- The total amount of time participants will be asked to volunteer for this study is approximately 4 hours over the next 2 months.

What Will I Be Asked To Do?

- You will receive training on peer coaching.
- At the convenience of your schedule, you will participate in peer coaching by observing another intern's classroom instruction.
- You will also allow another teacher intern to observe your classroom practices.

- Coaching sessions will include a brief meeting with the other intern to assess the data gathered during the observations.
- Following the classroom observations, you will participate in an interview to discuss your peer coaching experience. This interview will be recorded on audiotape for purposes of future transcription and analysis.
- You will be asked to review the written transcript of your interview to verify its content.
- You will be asked to write a brief reflection on your peer coaching experiences.

Are There Reasons Why I Should Not Take Part In This Study?
There are no reasons that you should not participate in this study.

What Are The Possible Risks And Discomforts?
To the best of our knowledge, the things you will be doing have no more risk of harm than you would experience in everyday life.

Will I Benefit From Taking Part In This Study?
By participating in this study you will become familiar with a self-evaluation technique that you can employ in your own classroom when you become a licensed teacher.

Do I Have To Take Part In This Study?
If you decide to take part in the study, it should be because you really want to volunteer. There will be no penalty and you will not lose any benefits or rights you would normally have if you choose not to volunteer. You will not be treated differently by anyone if you choose not to participate in the study. You can stop at any time during the study and still keep the benefits and rights you had before volunteering.

What Will It Cost Me To Participate?
There are no costs associated with taking part in this study.

Will I Receive Any Payment Or Reward For Taking Part In This Study?
You will not receive any payment or reward for taking part in this study.

Who Will See The Information I Give?
Your information will be combined with information from other people taking part in the study. When we write up the study to share it with other researchers, we will write about the combined information. You will not be identified in these written materials.

We will make every effort to prevent anyone who is not on the research team to know that you gave us information or what the information is. Your name will not be used in the report of the study. Your interview, reflection, and other information will be assigned a pseudonym. Information linked to names will be kept in a locked cabinet.

However, there are some circumstances in which we may have to show your information to other people. We may be required to show information that identifies you to people who need to be sure that we have done the research correctly, such as the UNCW Institutional Review Board.

Can My Taking Part In The Study End Early?
If you decide to take part in the study you still have the right to decide at any time that you no longer want to continue. There will be no penalty and no loss of benefits or rights if you stop participating in the study. You will not be treated differently by anyone if you decide to stop participating in the study.

What Happens If I Get Hurt Or Sick During The Study?
(Not applicable to this study.)

Do Any Of The Researchers Stand To Gain Financially Or Personally From This Research?
This research is being completed as part of a graduate student's thesis. None of the researchers participating in this study stand to gain financially or personally.

What If I Have Questions?
Before you decide whether or not to participate in the study, please ask any questions that come to mind now. Later, if you have questions about the study, you can contact Dr. Kenneth Anderson (Principal Investigator) at 910-962-3175 or the student researcher, Linda Britton, at 910-791-8673. If you have any questions about your rights as a research participant, contact Dr. Candace Gauthier, Chair of the UNCW Institutional Review Board, at 910-962-3558.

What Else Do I Need To Know?
All pertinent information has been disclosed.

Research Participant Statement and Signature
I understand that my participation in this research study is entirely voluntary. I may refuse to participate without penalty or loss of benefits. I may also stop participating at any time without penalty or loss of benefits. I have received a copy of this consent form to take home with me.

_____ _____
Signature of person consenting to take part in the study — Date

_____
Printed name of person consenting to take part in the study

_____ _____
Name of person providing information to the participant — Date

Appendix D. Invitation to participants to join study.

Just a note to thank you again for meeting with me and the other ____ High School interns today. I really appreciated your being there after a long day at school.

I hope that I was able to convey to you how excited I am about the concept of peer coaching. This evening I received an e-mail message from one of the graduate students who was scheduled to attend our meeting. She regretted missing the meeting, but she wanted you to know the following:

> "Please tell the interns that I really enjoyed my experience with peer mentoring. Having a partnership teacher as a mentor is great, but there are some things that only another intern can understand. Sharing experiences, tips, strategies, problems, etc. is integral to your development as a teacher. We all do this with one another, but having a formal plan for peer mentoring helps to keep you focused and on task when trying to improve as an instructor. I would highly, highly, highly recommend establishing a mentoring relationship with a peer. I also think its great to work with people outside your department. It is amazing how beneficial it can be to work with someone in another subject area. "

I will be very grateful if you decide to participate in my thesis study, and I can help you arrange peer observations during the two weeks after Spring break. The following information is taken from the beige consent form that I gave you today. As you look at this list, I think you will realize that your obligations for the study will be minimal.

- You will receive training on peer coaching. (COMPLETED 3/15/06)
- At the convenience of your schedule, you will participate in peer coaching by observing another intern's classroom instruction.
- You will also allow another teacher intern to observe your classroom practices.
- Coaching sessions will include a brief meeting with the other intern to assess the data gathered during the observations.
- Following the classroom observations, you will participate in an interview to discuss your peer coaching experience. This interview will be recorded on audiotape for purposes of future transcription and analysis.
- You will be asked to review the written transcript of your interview to verify its content.
- You will be asked to write a brief reflection on your peer coaching experiences.

Please take time to read the consent form carefully and let me know as soon as possible if you would like to participate. If you have questions or concerns, please contact me at school, call me at home at 791-8673, or e-mail me at home at brittonlr@juno.com

If you decide not to participate, I hope that our discussion of peer coaching was helpful and that you will have another opportunity to engage in peer coaching.

Linda Britton
3/15/06

Appendix E. Questions used in audio taped interviews.

INTERVIEW QUESTIONS

Please Note:

- **The wording of the following questions may be modified slightly to conform to the actual interview format.**
- **Some questions may be eliminated as deemed necessary by the researcher.**
- **Additional questions may be added to allow an opportunity for the interviewee to clarify or elaborate on a previous answer.**

1. Explain your understanding of the purpose of peer coaching.

2. Discuss any experiences you had with peer coaching prior to participating in this study.

The following questions are about your experience as a peer observer:

3. Did you feel adequately prepared to observe another intern?
    a. If yes, explain why you felt prepared.
    b. If no, explain why you felt unprepared.

4. When you observed another intern, did you feel that you adequately understood the purpose of peer coaching prior to observing that intern?

5. Did you discuss the observation with the other intern prior to your visit?

The following questions refer to data that was collected during the observation:

6. Who was responsible for determining the data that was collected during the observation?

7. Discuss how the data collected during the observation was interpreted.

8. Were you an active participant in interpreting the data?
    a. If yes, what role did you play?
    b. If no, who interpreted the data?

9. Discuss any impact that collecting data for a peer had on *your* teaching practices.

The following questions are about your experience in being peer coached by another teacher intern:

10. At the time you were observed by another intern, did you feel that you understood the purpose of peer coaching?

11. Did you feel that the person who observed your classroom was adequately trained to be a peer coach?
    a. If yes, explain why you felt the peer coach was adequately trained.
    b. If no, explain why you felt the peer coach was not adequately trained.
12. Did you discuss the observation with the peer observer prior to your observation?

The following questions refer to the data that was collected during the observation of your classroom:

13. Who was responsible for determining the data that was collected during the observation?

14. Discuss how the data collected during the observation was interpreted.

15. Were you an active participant in interpreting the data?
    a. If yes, what role did you play?
    b. If no, who interpreted the data?

16. Discuss any impact that the data had on ***your*** teaching practices.

Final Questions:

17. Discuss how peer coaching might be helpful to you in the future.

18. Discuss any frustrations or disappointments with the peer coaching process.

19. Discuss specific ways that peer coaching has caused you to alter your teaching practices.

20. Did participating in peer coaching affect your self-confidence as a teacher? If yes how was you self-confidence affected?

21. Did participating in peer coaching affect your enthusiasm for teaching? If yes, please explain how your enthusiasm was affected.

22. Did peer coaching affect your performance in the classroom? If yes, explain how peer coaching affected your performance.

23. Did peer coaching cause you to alter your teaching practices? If yes, explain any changes that you made.

24. Given the opportunity, would you be interested in participating in peer coaching again?

25. Is there anything else that you would like to share about this experience that you think is important to this study?

Appendix F. Reflection questions answered by participants following the study.

REFLECTION

Please reflect on your experience with peer coaching as a participant in this graduate study by completing the following questions.

R-1. Discuss any positive aspects of this peer coaching experience.

R-2. Discuss any negative aspects of this peer coaching experience.

R-3. Discuss how this peer coaching experience affected your teaching practices.

R-4. If this peer coaching experience did not affect your teaching practices, please discuss why you think your practices remained unchanged.

R-5. Discuss your overall opinion of peer coaching.

THANK YOU FOR ANSWERING THESE QUESTIONS!

Appendix G. Letter to participants giving peer coaching assignments and expectations.

<u>Thank you</u> for volunteering to participate in my graduate study on peer coaching.
Hopefully the following checklist will help you to have a successful peer coaching experience.

Your partner for this study will be _____, Room _____.
His/her schedule is:
1st_____2nd_____3rd_____4th_____

Meet with your coaching partner. (This meeting should take no more than 10-15 minutes.) At that meeting do these things:

- _____ Discuss what you'd like your partner to observe in your classroom and what you will observe in his/her classroom. (If you're not sure what area of your teaching practice to examine, you can get some ideas from the list that was included in your training materials.)
- _____ Decide what data will be collected during the observations. It might be helpful to bring copies of seating charts to the meeting; they could be useful tools for data collection. (For ideas on data collection, see the examples of raw data that are also in your training materials.)
- _____ Determine dates and class periods that you will observe each other. (You may need to observe/be observed for only part of a class period. That's up to you and your partner.)
- _____ As soon as possible after you observe your partner, give a copy of the raw data you've collected to your partner. (Feel free to make notes on the data to explain what you collect, but try to avoid interpreting the implications of the data.) If at all possible, get the raw data to your partner before you meet for your follow-up discussion (see next step).
- _____Meet with your partner once more and do the following things:
    1. _____ Clarify any questions he/she may have about the data that you collected.
    2. _____ Encourage your partner to discuss the data you collected. Listen as your partner interprets the data and allow him/her to discuss any implications the data might have for his/her teaching practices.
- _____ After you complete the coaching cycle, please give me a copy of the raw data that was collected during each observation.

(PLEASE NOTE: If you have time and would like to observe/be observed more than once, please do so. Although my study only requires one observation per partner, extra coaching cycles would be super! Just follow the same procedures listed above.)

Even though I assume that each of you will continue to teach full-time until mid-to late April, I hope you can complete your peer observations before Easter vacation. (Remember we'll be out of school again on Friday, April 14th.) Ideally you could wait until you begin to hand your classes back to your partnership teachers to do your peer observations, because that would give you more time to observe outside your own classroom. However, waiting might make it more difficult to coordinate a visit with your partner, since he/she will also have fewer classroom responsibilities.

- PLEASE let me know if you have any questions:
  (H-791-8673; W-251-6100, ext. 305; <u>brittonlr@juno.com</u> or <u>lbritton@nhcs.k12.nc.us</u>)
- Let me know <u>right away</u> if you have scheduling conflicts. (Think about observing your partner on a day when *your* class is testing. Hopefully your partnership teacher would fill in for you while you are observing, since your students would be working independently and would simply require monitoring.)
- Once you've completed the coaching cycle and given me your raw data, I'll arrange to interview you per your experience. The interview can certainly be done later in the month, when your teaching responsibilities have lightened. It will definitely be at your convenience!

Once again, thank you! I'm really excited to hear about your experiences with peer coaching.

Linda Britton 4/4/06

Appendix H. Letter to participants requesting interviews.

I know you're excited to be finishing your internship next week! It's hard to believe that your four months at _____ High School have come and gone. I hope the days you've spent here have been productive and memorable for you.

Thank you again for completing the peer coaching sessions for my graduate thesis. As you know, I need to meet with you to audiotape your responses to questions about your experiences as a participant in this study. The entire interview should take less than 30 minutes.

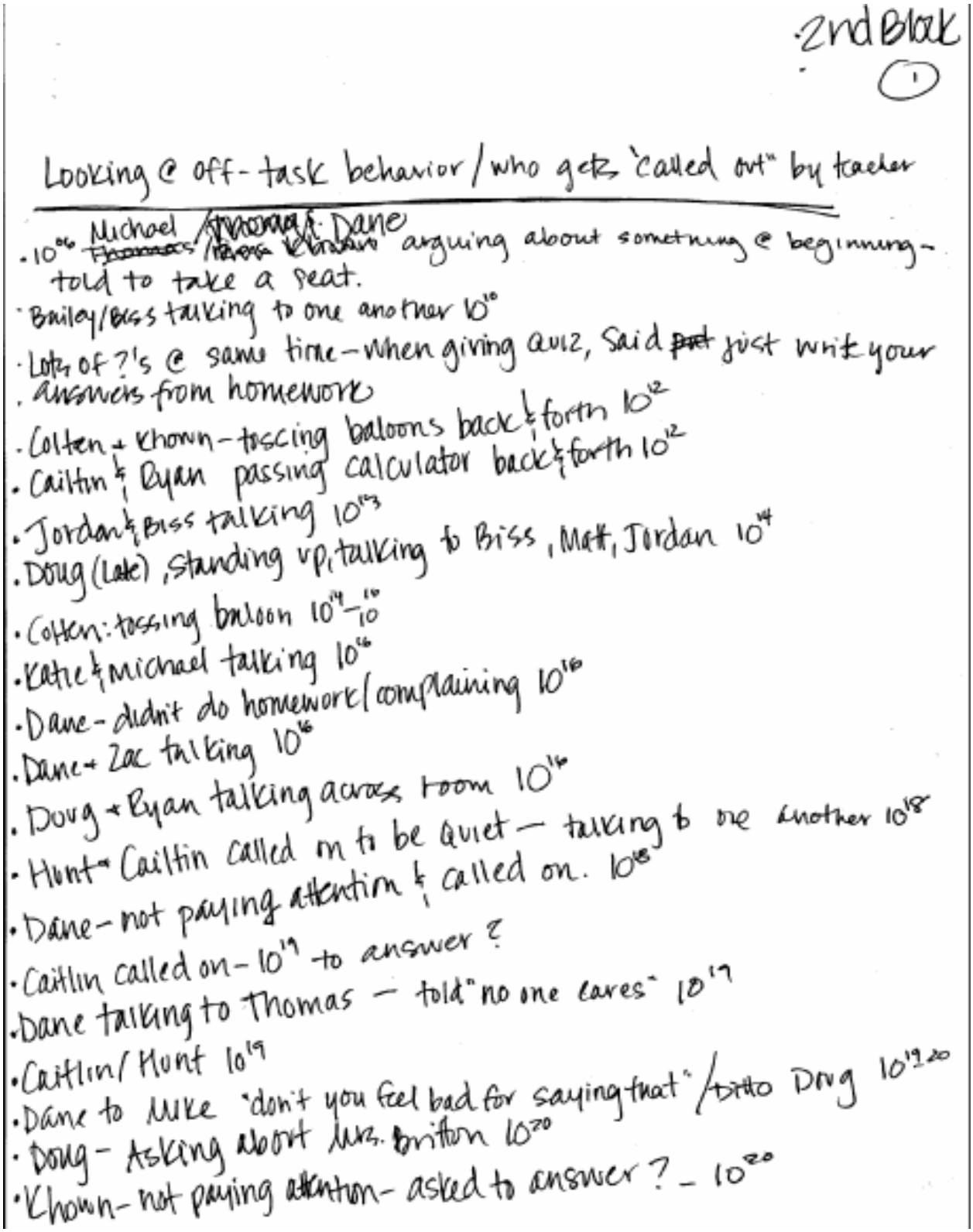
I've included below some possible times to meet with you. Please return this form to me as soon as possible, and I'll confirm a time for your interview. If it's possible for you to meet at more than one of the suggested times, please select more than one. If you choose more than one time, let me know if you have a preference. If for some reason none of the times is convenient, please indicate a time that is more convenient for you.

Thurs. 4/20:	Before school _____
	1st period _____
	2nd period _____
	After school _____
Friday. 4/21	Before school_____
	1st period _____
	2nd period_____
	4th period_____
	After school_____
Mon. 4/24	Before school _____
	4th period _____
Tues. 4/25	Before school _____
	4th period _____
	After school_____
Wed. 4/26	Before school _____
	4th period _____
Thurs. 4/27	Before school _____
	4th period _____
	After school _____

Any day at B lunch: _____
Another time: _____

THANKS!

Appendix I. Raw data collected for Charles by Alice.



2nd Block

(1)

Looking @ off-task behavior / who gets "called out" by teacher

- 10^{00} Michael / ~~Thomas~~ / ~~Travis~~ & Dane arguing about something @ beginning - told to take a seat.
- Bailey/Biss talking to one another 10^{10}
- Lots of ?'s @ same time - when giving quiz, said ~~just~~ just write your answers from homework
- Colten + Khown - tossing baloons back & forth 10^{12}
- Caitlin & Ryan passing calculator back & forth 10^{12}
- Jordan & Biss talking 10^{13}
- Doug (Late), standing up, talking to Biss, Matt, Jordan 10^{14}
- Colten: tossing baloon 10^{14}–10^{10}
- Katie & Michael talking 10^{16}
- Dane - didn't do homework / complaining 10^{16}
- Dane + Zac talking 10^{16}
- Doug + Ryan talking across room 10^{16}
- Hunt + Caitlin called on to be quiet — talking to one another 10^{18}
- Dane - not paying attention & called on. 10^{18}
- Caitlin called on - 10^{19} - to answer ?
- Dane talking to Thomas — told "no one cares" 10^{19}
- Caitlin / Hunt 10^{19}
- Dane to Mike "don't you feel bad for saying that" / ditto Doug $10^{19,20}$
- Doug - Asking about Mrs. Britton 10^{20}
- Khown - not paying attention - asked to answer ? - 10^{20}

.10^{20}: Doing something (?) – told "that's gross" 10^{21}
·10^{21} "All done?" – quieted down
. Jordan answers ? – told "that's really good"
· Jordan talking to Doug 10^{21}
· Doug talking to class 10^{22}
· Ryan said "Learn how to add" – told to hush
· Biss "god, nadia"
· Mike – playing w/something – taken away
. Mike talking to a-e & Sara
. Caitlin to Ryan
· Hunt, Caitlin
· Doug talking "accurate + precise" – acknowledged – moved on. 10^{24}
· 10^{24} "y'all seriously – thank you"
· Everyone talking – told to "just wait – almost done, 6 more ?'s"
· Zac Thomas talking 10^{25}
· Dane – head down 10^{26}
· Amy raising hand (calcium ?) 10^{26}, (for all ?'s)
· Thomas – laying on desks 10^{26}
· Doug "called out" – "Not surprised, Doug's talking"
· Sara talking – asked to answer ? – not paying attention 10^{27}
. Doug/Zac talking
. Ashley told to "hush"
. Colten – told "that's hilarious" – non answer ?
· Katie calls out answer to ? 10^{27}

- Caitlin/Hunt talking (not paying attention) 10^{29}
- Doug/Biss talking (Biss tells him to be Quiet) 10^{29}
- Dane - hed on desk
- 10^{29} "Hush"
- Doug/Zac Thomas talking across room
- Katie/Sara talking 10^{29-30}
- Jordan/Katie 10^{30}
- Dane/Thomas 10^{30-32}
- Katie/Sara 10^{31}
- Doug/Thomas 10^{31}
- Doug - called to answer, not paying attention — "not paying attention" said:
- Ryan - called on " " " " — "
- Thomas - Laying down, called on, no hmwk out
- Doug "good job thomas" 10^{32}
- Biss - raising hand & called on
- Caitlin - "what page is it?" 10^{33}
- Katie - periodic table is so much fun — Is it?
- "Havent been quiet the whole time"
- "Hey y'all, be quiet"
- Doug "y'all shut up", "Be quiet" - Hunt
- Thomas "catfish"
- Doug "Shut it"
- Sat Quietly & wai

- "guys, every time!" 10^{34}
- Jordan - hand raised, called on
- Zac raised hand - called on.
- Dane/Thomas fighting over pen
- Biss "Known my brother...." 10^{35}
- Caitlin/Hunt 10^{35} – ^{37}
- Baily + Nick 10^{36}
- Hunt/Zac 10^{36}
- Dane/Biss/Zac 10^{36}
- Baily - not p. attention - asked to repeat answer.
- Dane - not paying attention - called on to answer?.
- Baily raised hand 10^{37} – not called on., called on 10^{38} (other?)
- Thomas raising hand – wants to answer? –
- Dane/Doug - Fighting over calculator
- Thomas "Dude" – Everyone repeats it
- Doug standing up - wants to go to RR says "we're gonna fight"
- Hunt/Zac [illegible] 10^{37} – 10^{39}
- Doug/Colten across room
- Caitlin "where do I start?"
- Zach – looking out window
- 10^{40} "Alright – pay attention to this"
- Thomas/Dane talking (still! aaah!) 10^{40}

Appendix J. Raw data collected for Alice by Charles.

Room 202 Students talking and OFF task

12:24 Right corner talks out loud about Q?

12:26 Keeps student on task by helping with Q that was asked out loud

12:27 Starts discussion

12:28 Tancsion look out window
- called on to answer Q?

12:30 start taking notes

12:31 Alex not taking note
Called on him to answer Q

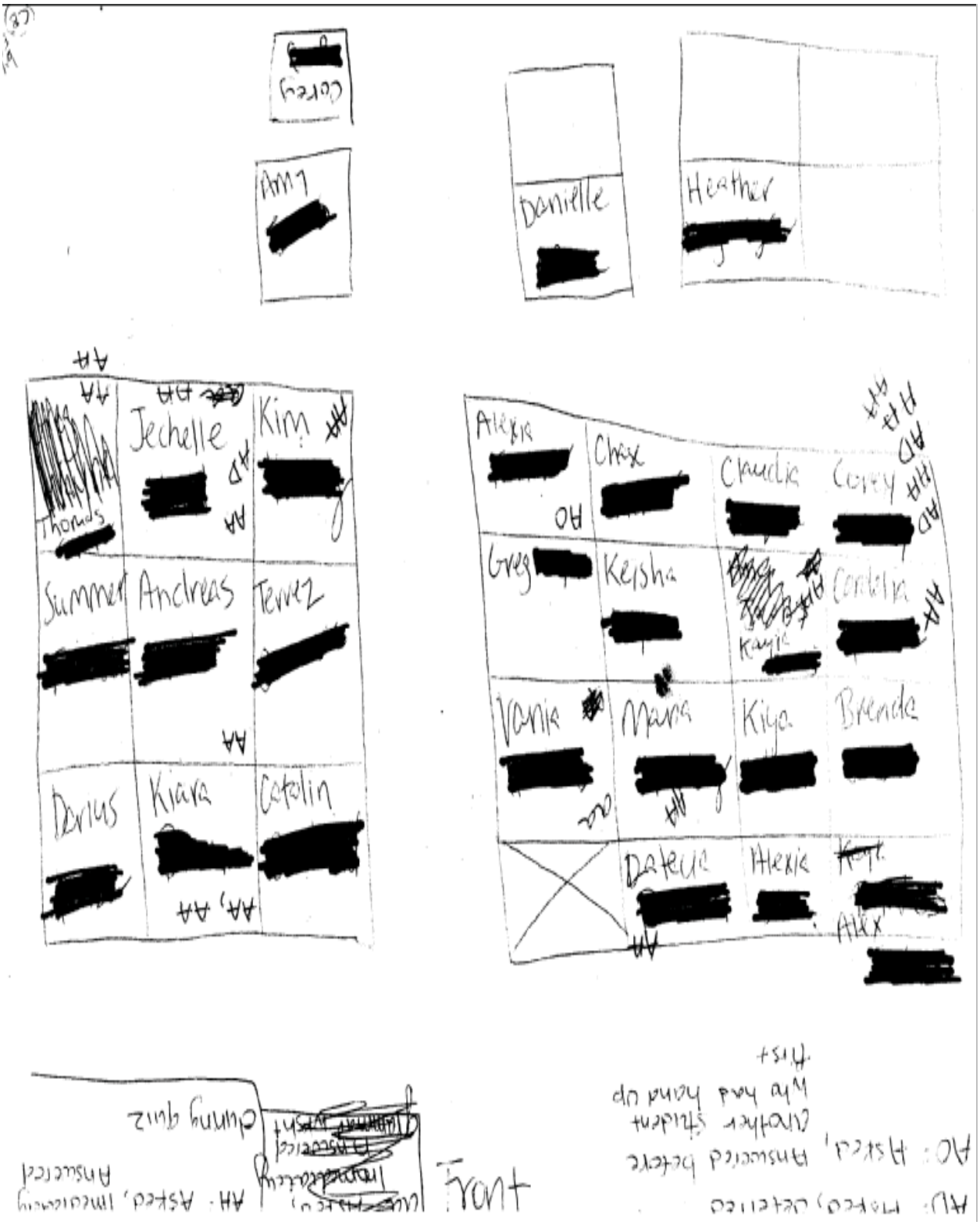
12:35 Alex, Tenseisha talking
- "pay attension"

12:36 Kid in right corner distracted by thing outside
"nina sit down"

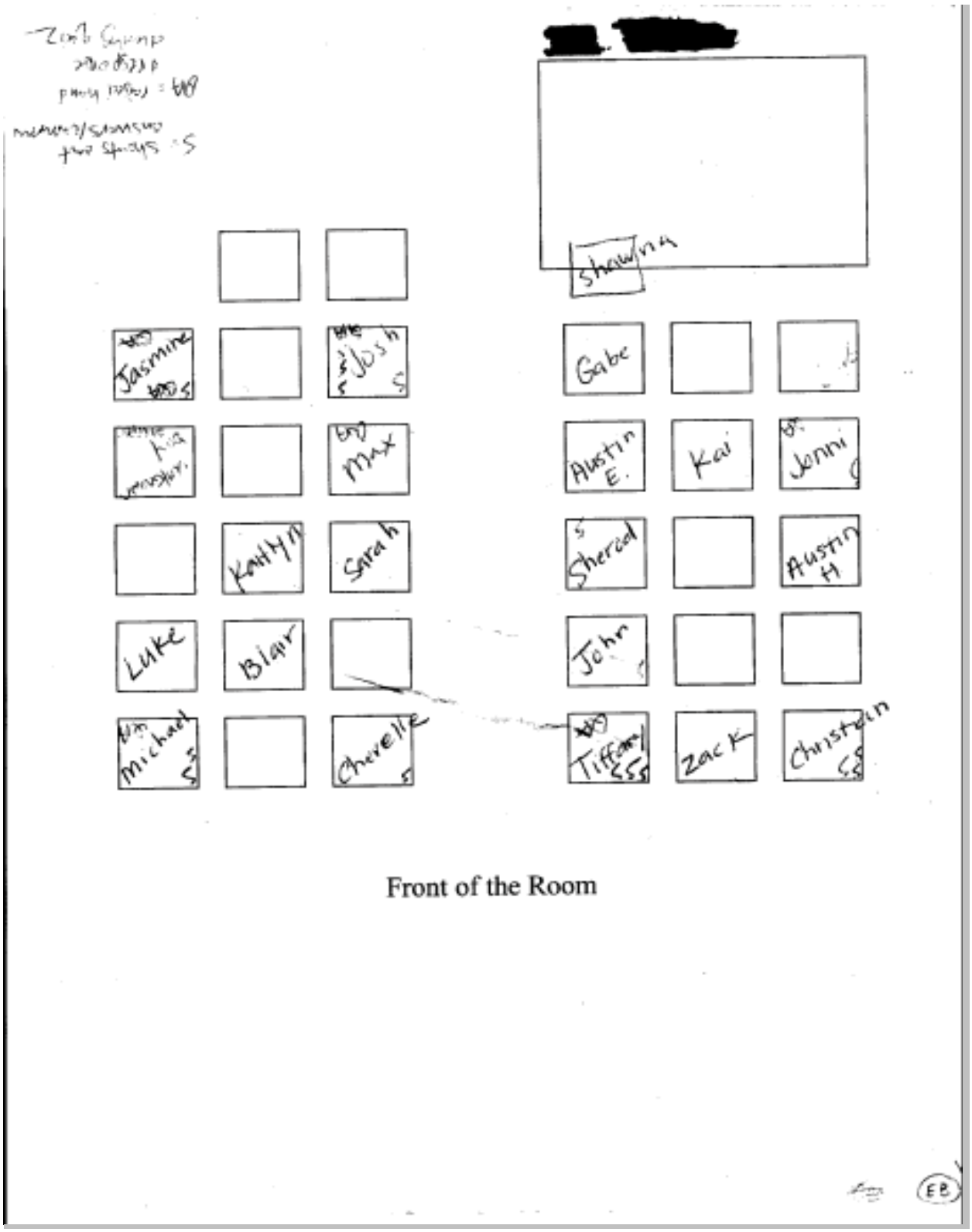
12:37 Taneisha looking out window
"focus" Blinds are Closed

12:40 Student are taking notes there are small
out Breaks of noise but it gose with lesson
keeps Student on task by talking about lesson with kids.

Appendix K. Raw data collected for Diane by Betty.



Appendix L. Raw data collected for Betty by Diane.



Appendix M. Letter to participants requesting verification of interview transcriptions and reflection responses.

June 4, 2006

I hope this finds you well and enjoying your summer. I can't believe it's been almost six weeks since you left _____ High School!

As you'll see, I'm sending a copy of the Interview that you completed for my thesis study. Except for omitting fillers that you might have used on a regular basis (for instance, "like" or "you know"), I've attempted to transcribe your interview word for word. As you read through your replies, please remember that your interview was collected as an extemporaneous conversation, so you shouldn't be embarrassed if you find that you repeat yourself or if your thoughts seem to meander temporarily. I've also typed and included your responses to the five Reflection questions.

I'd really appreciate your reading through both the Interview and the Reflection to confirm that what you said was indeed what you meant to say. If you're satisfied with what you've said and don't want to make any changes, please e-mail me as soon as possible and let me know. (brittonlr@juno.com)

If, after reading the transcripts, you decide that you would like to correct, clarify, or expand a response, please make your corrections or comments on the sheets I've sent you. I've included a stamped, addressed envelope; hopefully that will make it easier for you to return the pages to me. This should be the very last thing I'll ask you to do for my study!

Once again, I can't begin to tell you how grateful I am to have you help me with this study. Thank you for being such a willing and helpful participant. I hope that you found the study interesting and that you'll have an opportunity to use peer coaching in the future.

Looking forward to hearing from you!

Linda Britton
708 Midland Drive
Wilmington, NC 28412

BIOGRAPHICAL SKETCH

Linda Britton moved with her family to Wilmington, North Carolina, when she was very young. She is still a Wilmington resident. She graduated from the University of North Carolina Wilmington with an undergraduate degree in Chemistry and a minor in Mathematics.

Mrs. Britton began her teaching career in 1969. She taught five years, then "retired" for more than fifteen years to nurture and educate her own children. She returned to full-time teaching in 1992 at her high school alma mater. In her current position she teaches General, Honors, and Advanced Placement Chemistry and chairs the science department.

In 1998, Mrs. Britton was named High School Teacher of the Year for New Hanover County and New Hanover County Teacher of the Year. In 2005 she received the Saul Bachner Secondary Mentoring Award from the Watson School of Education at the University of North Carolina Wilmington.

Mrs. Britton is married. She and her husband Jack have two children and two grandsons. They anticipate becoming grandparents again as 2006 ends.