THE RELATIONSHIP BETWEEN BEGINNING TEACHERS' ENGAGEMENT WITH INDUCTION PROGRAM COMPONENTS AND STUDENT ACHIEVEMENT

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DEDICATION

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ABSTRACT

THE RELATIONSHIP BETWEEN BEGINNING TEACHERS' ENGAGEMENT WITH INDUCTION PROGRAM COMPONENTS AND STUDENT ACHIEVEMENT

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The purpose of this study was to examine induction programs in North Carolina during the 2010-2011 school year to determine beginning teachers received the support as recommended by State Board of Education policy. Participants were second-year high school teachers participating in district level beginning teacher induction programs and were teaching courses that required state-mandated standardized tests. Research questions were developed to gather data relative to the components of induction: orientation, mentor support, administrator support, and professional development. Data gathered from the researcher-designed *Beginning Teacher Induction Program Survey* (BTIPS) were used to answer research questions.

A correlational research design was used. Predictor variables were engagement level scores and perceived impact on teaching. The criterion variable was change in student achievement as measured by performance on state standardized tests. Using the Rasch Rating Scale Model, engagement scores were calculated. Pearson r ($p < .05$) found no significant correlations between engagement with induction components and

student achievement. A multiple regression analysis further shows that engagement scores did not significantly contribute to predicting student achievement. The relationship between perceived impact on teaching and student achievement was also examined. Several important findings emerged. The data revealed that teachers in this study had access to and participated in the four induction program components recommended by the State School Board. However for many beginning teachers, support was lacking. Results showed that responding teachers were significantly low engaged in the support provided by administrators as opposed to orientation, mentor support and professional development and were high engaged with the support provided by mentors.

Schools and school systems are facing challenging times. The current climate of high stakes testing and uncertain economic conditions magnify the importance of having data to inform educators as they make decisions about their teaching force. Important questions about induction must be answered to best guide future policy. More research is needed that will distinguish the relationship between specific program components and student achievement.

CHAPTER ONE: INTRODUCTION

In this age of high-stakes testing, schools and school systems are under increasing pressure to ensure the success of their students. New laws such as *No Child Left Behind* require a rigorous accountability system that expects all teachers to be highly qualified and schools to be held accountable for teacher effectiveness. As a result, teachers find they are facing increasing pressures to make certain that a growing number of students achieve at higher levels (Bartell, 1995; Feiman-Nemser, 2001). Although new teachers are held to the same standards as experienced teachers they have additional challenges: learning to manage behavior in the classroom, becoming knowledgeable about district policies and job expectations, and translating theory into practice (Dollase, 1992; Feiman-Nemser, 2010; Kane, 1991; Megay-Nespoli, 1993; Ryan, 1992; Sachar, 1991). Increasingly, beginning teachers become disillusioned as the expectations they bring to the profession conflict with their first experiences in the classroom often resulting in an early departure from teaching (Darling-Hammond, 1997; Ingersoll, 2001).

Most school districts have implemented induction programs, professional development opportunities developed to train, support, and retain new teachers. Induction programs are developed to address beginning teachers' needs by giving them the support and time necessary for professional growth (Feiman-Nemser, 2001). In fact, most well-conceived and well-implemented teacher induction programs have been shown to positively influence teacher effectiveness, increasing the likelihood that new teachers will stay in the profession (Feiman-Nemser, 2001; Gareis & Nussbaum-Beach, 2008; Holloway 2001; Kelley, 2004; Smith & Ingersoll, 2004; Wilson, Darling-Hammond, & Berry, 2001).

Background of the Problem

Over the past fifty years, retention has been the primary focus of new teacher support and was most often addressed through programs that provided mentoring to beginning teachers (Feiman-Nemser, 2001). Comprehensive induction programs were developed that included components in addition to mentoring: administrator support, ongoing professional development, and opportunities to network with other new teachers (Darling-Hammond, 1997; Lowrey & Reaves 2008; Sawchuk, 2008; Smith & Ingersoll, 2004). Effective induction programs have been found to, "help new teachers construct a professional identity and practice consistent with a vision of good teaching yet responsive to the realities of schools and classrooms" (Feiman-Nemser, 2001, p 1029). Most recently, research has determined that students of beginning teachers made greater academic progress (as measured by standardized test scores) if their teachers took part in a comprehensive induction program (Ingersoll and Strong, 2011). The North Carolina induction program, the focus of this study, consists of four components: (a) orientation, (b) mentor support, (c) administrator support, and (d) professional development (North Carolina State Board of Education, 2008).

Researchers recommend that additional research is needed regarding the interactions of induction components and effective teaching (Wang, Odell, & Schwille, 2008). Although "there have been efforts to provide comprehensive and critical reviews of empirical studies on the effect of induction" (Ingersoll & Strong, 2011, p. 5), it is significant that few of these studies relate program effects to student achievement and none identify which program components are most effective. It is also difficult to find studies that use more sophisticated research methodology to control for group differences

or relationships dependent on school, the classroom, or teacher characteristics (Ingersoll & Strong, 2011). The results of this research review reinforce the need for more rigorous studies that focus on induction program components and the impact they have on the learning of students in beginning teachers' classrooms.

Significance of the Problem

In response to the recommendations of prominent researchers working in the field of teacher induction, this study addressed the gap in the literature by exploring the relationship between beginning teachers' engagement with induction program components and student achievement. Knowing which components contribute significantly to student achievement will allow both time and financial resources to be dedicated to those components. Research has shown that experienced teachers are more effective than less experienced teachers and that effective teaching leads to greater student achievement (Hattie, 2009). It is anticipated that findings will assist educators responsible for implementing these programs to develop evidenced-based comprehensive programs that provide critical support to beginning teachers, improving their effectiveness, and ultimately improving the learning of their students. It is anticipated that findings from this study will also assist policymakers as they are faced with making hard decisions regarding the funding of beginning teacher support.

Statement of the Problem

The purpose of this study was to examine the relationship between second year high school teachers' engagement in components of North Carolina's beginning teacher induction program and student achievement, as reflected in performance on standardized tests (the North Carolina End-of-Course tests). Identified induction components:

orientation, mentor support, administrator support, and professional development. The extent to which beginning teachers had access to and participated in NC induction program components was determined. In addition, the study considered beginning teachers' perceived impact of induction components on their teaching and how these perceptions related to student achievement.

Theoretical Framework

The role that new teacher induction programs in North Carolina play in the achievement of students in beginning teachers' classrooms supports a framework of understanding based on the work of Feiman-Nemser (2001) and Thompson, Paek, Goe, and Ponte (2004a). Feiman-Nemser posits that induction theory is built on the notion that teaching is complex work, all of which cannot be learned in pre-service training. The goal of induction is to provide a bridge between the training received in teacher education programs and the first years in the classroom, improving teaching practices. Thompson et al. propose that beginning teachers' engagement with induction programs may be the key to student learning, which in turn will result in improved student achievement. The theoretical framework that guides this study will be detailed in Chapter Two.

Research Questions

The following research questions are addressed in this study:

1. To what extent do high school teachers have access to and participate in North Carolina's beginning teacher induction program during their first two years of teaching?
2. How do second year high school teachers' engagement level scores differ across induction components?

3. What is the relationship between second year teachers' engagement level scores with induction components and the learning of students as measured by performance on state standardized tests?
4. What are the perceived impacts of second year high school teachers' induction components on their teaching? Furthermore, how do these perceptions relate to student achievement in their classrooms?

Operational Definitions

The following are operational definitions for the purpose of this study:

1. Beginning teacher/new teacher/novice. A teacher in his/her first three years in the teaching profession
2. Engagement. Interest in, enthusiasm for and investment in teaching; centered on the work teachers do with students in classrooms (Kirkpatrick, 2007)
3. Induction. A professional development program designed by a school system to provide training and support for new teachers (Wong, 2003)
4. Logit. "The unit of measurement that results when the Rasch model is used to transform raw scores obtained from ordinal data to log odds ratios on a common interval scale" (Bond & Fox, 2008, Kindle Locations 12730-12732).
5. Mentor. A career teacher charged with responsibility to help a new teacher in his/her first years in the profession (Wong, 2003)
6. Orientation. An introduction to the profession that may consist of a single session or several days of professional development and helps beginning teachers become familiar with critical information about the community at

large, the culture of school, and school district policies and procedures (Feiman-Nemser, 2001; Stanulis et al., 2007)

7. Professional development. Formal or informal training received as part of the school system induction program, which can take place face-to-face or online, in groups or through individual sessions.

Delimitations and Limitations

A decision was made to exclude first year teachers in this study. Research supports the findings that the first year of teaching, most commonly called the survival year, is critical (Feiman-Nemser, 2001; Mewborn & Stinson, 2007; Wayne, Youngs, & Fleischman, 2005; Ye-He, 2009). One year of support may not provide enough time to determine relationships between induction program components and student achievement. Second year teachers are the ideal population because they have just completed that first year and are refining their teaching (Hayes, 2006). However, they are not far removed from their first year induction program experiences and should continue to participate in their school system induction program (NC SBE, 2008).

The economic recession of 2009 was a limitation of this study. As early as 1997, the National Commission on Teaching and America's Future (NCTAF) reported that resources for new teacher induction programs are often targets for elimination during times of economic crisis, decisions that adversely affect school systems committed to retaining their beginning teachers. The funding for the North Carolina induction program changed between year one (2009-2010) and year two (2010-2011) for this cohort of teachers. Due to these hardships, state funds typically set aside for mentoring beginning

teachers were eliminated. As a result, many districts did not offer or provided only limited services for first and second year teachers.

Organization of the Study

This study is organized into five chapters, a bibliography, and appendices. Chapter Two presents a review of the literature related to the induction programs of beginning teachers and student achievement and delineates the theoretical framework. Chapter Three describes the research design and methodology. The instrument used to gather data, procedures followed, and methods for selecting the sample are also described. The analysis of the data and discussion of the findings are presented in Chapter Four. Chapter Five contains a summary, conclusions, and recommendations for further research and concludes with a bibliography and appendices.

CHAPTER 2: REVIEW OF LITERATURE

This chapter presents a critical review of empirical and theory-based literature pertinent to the relationship between beginning teacher induction components and student achievement. The review is divided into five sections. The first section describes the criteria used to select the literature included in this study. The second section provides a review of induction programs, including the North Carolina induction program and a description of its components. Section three explores teacher quality and the role it plays in student achievement. An examination of the relationship among beginning teacher induction programs, teacher engagement, and student achievement is the focus of section four. Section five defines the theoretical framework for this study and acknowledges areas that merit further research.

Selection Criteria

The literature included in this chapter pulls together information about the issues surrounding beginning teacher induction and addresses gaps that led to this study. The review included studies that were either empirical or theory-based works from peer reviewed journal articles, books, critiques, reviews, reports, and conferences; provided understanding of the problem studied; and were scholarly in nature.

Various methods were used to review the research on beginning teacher induction and student achievement. The search for applicable variables began with relevant articles from the *Review of Educational Research* journal. Searches using electronic databases (i.e., Educational Resources Information Clearinghouse or ERIC, Psychological Abstracts, Dissertation Abstracts, Academic Search Premier, and Google Scholar) resulted in combinations of key words: *beginning teacher, beginning teacher induction*

programs, mentoring programs, principal support, student engagement, student achievement, teacher induction, teacher retention, teacher turnover, and teacher quality. Additional searches included the key words: *mentor, instructional practice, principal leadership, and professional development*.

Induction Program Review

The challenges of teachers in their first years in the profession have been widely documented (Breaux & Wong, 2003; Cohen, 2005; Corbell, 2008; Dollase, 1992; Feiman-Nemser, 2001; Ingersoll & Smith, 2004; Kane, 1991; Megay-Nespoli, 1993; Ryan, 1992; Sachar, 1991; Wang et al., 2008). New teachers must navigate the rules and regulations of their school and school district and become familiar with the culture of the local community, all while assuming the overwhelming responsibility of learning to manage and teach students (Luther & Richman, 2009). These issues often lead to turnover of 40-50% during the first five years (Darling-Hammond, 1997; Ingersoll, 2001). Although the challenges of providing the support needed to keep beginning teachers in the classroom must be confronted, retaining teachers is not enough. The first years in the classroom are a critical, intense and formative time that shapes future teaching patterns as well as influences longevity in the profession (Feiman-Nemser, 2001; Ingersoll & Smith, 2004). Bush (1984) explains,

> The conditions under which a person carries out the first years of teaching have a strong influence on the level of effectiveness which that teacher is able to achieve and sustain over the years; on the attitudes which govern teachers' behavior over even a forty year career; and, indeed, on the decision whether or not to continue in the teaching profession (p.3).

By receiving the support and guidance needed for growth, beginning teachers can improve their level of effectiveness in the classroom and ultimately impact the learning experiences of P-12 students (Gareis & Nussbaum-Beach, 2008).

Most school districts across the nation have implemented induction programs, professional development opportunities designed to provide new teachers with the knowledge and skills to successfully address the needs of the students in their classrooms. On the teacher development continuum, induction is viewed as a predetermined period of time, most often the first three years of teaching, between pre-service teacher education and in-service teaching (Feiman-Nemser, 2001; Odell, 2006). In essence, induction programs provide support as these young professionals transition from students of teaching to teachers of students (Moskowitz & Stephens, 1997). Well-designed programs have been shown to successfully influence job satisfaction and teacher effectiveness, increasing the likelihood that new teachers will stay in the profession (Feiman-Nemser, 2001; Gareis & Nussbaum-Beach, 2008; Holloway 2001; Kelley, 2004; Smith & Ingersoll, 2004; Wilson et al., 2001).

Induction literature dates from the 1960's and 1970's (Blackburn 1977; Johnson, 1969; Swanson, 1968) with the bulk of research appearing in the 1980's in response to mounting concerns surrounding new teacher attrition (Cohen, 2005). In the early 1980's, the predominant rationale for most new teacher support programs was for mentors to orient beginning teachers to the system and help with the stress of teaching (Odell, 2006). According to Odell, "interpersonal skills were key for the mentor. Mentors needed to be emphatic listeners and help novices build their self-esteem and confidence" (p. 205). From the mid 1980's to 1990's, induction programs began to move beyond this

perspective to the notion of mentor as educational companion (Feiman-Nemser & Parker, 1992). Educational companions helped new teachers reflect on their teaching, learn about effective teaching strategies and student assessment. Wang and Odell (2002) reported that another shift in purpose came in the late 1990's. During this time, mentors were encouraged to move their mentees toward standards-based teaching with a focus on inquiry teaching where teachers provided opportunities for their students to actively construct knowledge and make personal connections with the content. Some mentors arranged for their mentees to visit other classrooms, encouraged collaboration with colleagues, and built networks of support connecting new teachers to career teachers (Feiman-Nemser, 2001). As noted by Wang & Odell (2002) the programs that included classroom-based teacher learning focused around the unique and diverse needs of the beginning teacher's classroom provided a more significant and powerful form of professional development.

Recently, in response to the additional pressures brought on by the 2001 federal legislation *No Child Left Behind,* many program developers have revisited induction goals and are revising programs to provide opportunities that are in line with both state and national standards (Sweeny & DeBolt, 2000; Wang et al., 2008). With about three quarters of states having regulations requiring some form of support for new teachers (Wang, Tregidgo & Mifsud, 2002), induction has become the focus of nationwide efforts to reduce teacher shortages, reinforce teaching as a profession, and improve student achievement.

While there is general consensus regarding the need for induction, there is considerable variability in program implementation from state-to-state and system-to-

system, (Furtwengler, 1995; Ingersoll & Kralik, 2004; Villani, 2002). Programs differ according to the legislative and policy environment; particularly in the funding they receive locally and from state and national funds. Induction goals vary (e.g., emotional support, teacher development, assessment, and/or student achievement) as do program elements (e.g., orientation sessions, mentoring, workshops, or common planning time with peers) but there has been little research regarding which goals or program elements positively impact teacher outcomes (Ingersoll & Strong, 2011).

Some induction programs are short-lived, offering only cursory assistance such as school system orientation, occasional workshops, or instruction in the most basic, nonspecific classroom management strategies (Gold, 1996). Based on interviews of 50 teachers in the early stages of their careers, Johnson and Kardos (2002) concluded that induction programs often fail to provide adequate support and guidance for beginning teachers who need "sustained, school-based professional development—guided by expert colleagues, responsive to their teaching, and continual through their early years in the classroom" (p. 13). Without this "clinical, real-world training" (American Federation of Teachers, 2001), beginning teachers often become frustrated and overwhelmed, ending their careers after only a few years. However, there have also been numerous studies that suggest comprehensive induction programs can make a difference in new teacher support (Johnson, 2004; Reiman, Cordell, & Thomas, 2007; Smith & Ingersoll, 2004). For the purposes of this study, comprehensive induction is defined as a program of support developed by school systems for new teachers that include several components such as: orientation, mentor support, supportive communication from administrators, seminars, common planning time with colleagues, and/or an external network of support with peers

(Smith & Ingersoll, 2004).

In practice, new teacher induction including mentoring or colleague support is typical, but induction that is rigorous, comprehensive, and developed in response to the needs of beginning teachers is less so (Darling-Hammond, 1997; Glazerman et al., 2010; Lowrey & Reaves 2008; Sawchuk, 2008; Smith & Ingersoll, 2004). In 2004, The Alliance for Excellent Education's, *Tapping the Potential: Retaining and Developing High-Quality New Teachers* reported that comprehensive beginning teacher support programs created to provide new teachers with the support and tools needed to succeed cut attrition levels in half. In addition, it was found that these programs could shorten the time it takes new teachers to perform as experienced teachers. A study of the California Beginning Teacher Support and Assessment (BTSA) program by Villar and Strong (2007) went a step farther when they determined that first and second year teachers in a comprehensive induction program performed at the same level of experience as teachers with three to seven years in the classroom.

In 2011, Ingersoll and Strong reviewed 500 studies focusing on the effects of induction programs on new teacher retention, classroom instructional practice, and student achievement. The purpose of the study was to respond to a growing concern that "there have been few efforts to provide comprehensive and critical reviews of empirical studies on the effect of induction" (p. 5). These scholars determined that only18 empirical studies met all three identified criteria. These studies: (a) used teacher outcomes to evaluate the effects of induction; (b) compared data from participants to non-participants; and (c) provided detailed descriptions of the sources of data, sampling methods, methodology, and results. A brief summary follows, organized by teacher

outcome.

- Teacher retention: six of seven studies provided evidence that novices were less likely to leave the profession or district if they participated in an induction program.
- Classroom practice: beginning teachers in four of six studies demonstrated improved performance on several facets of teaching if they participated in an induction program. Examples of performance were time on task, differentiating instruction, and effective classroom management.
- Student achievement: students in the classrooms of beginning teachers who participated in an induction program experienced an increased score in academic achievement on standardized tests in four out of five studies.

One study reviewed by Ingersoll and Strong was a U.S. Department of Education project by Mathematica Policy Research (Glazerman et al., 2010) used a randomized controlled trial design to determine the effect of beginning teacher induction outcomes on retention, instructional practice, and student achievement. Data was collected from 17 large urban public school districts from 2005-2008. The sample was 1,009 beginning teachers from 417 randomly assigned schools. The school districts provided student test score data to determine student achievement. Although there were no significant differences found between teachers in the treatment and control groups regarding retention and classroom practices, significant differences were found in the achievement of students "equivalent to moving the average student from the 50th percentile to the 54th percentile in reading and to the 58 percentile in math" (Glazerman et al., 2010, p. 222). However, it is important to note that differences were found in the third year of the study

– after two years of receiving induction support.

Today's new teachers often enter the profession unsure how long they will stay (Peske, Liu, Johnson, Kauffman, & Kardos, 2001). Many base their decision on the support they receive and the success they have with their students (Johnson & Birkeland, 2002; Johnson, Kardos, Kauffman, Liu, & Donaldson, 2004). It is essential that educators make informed decisions regarding which supports provide rich opportunities that develop the knowledge, skills, and confidence new teachers need to impact the learning of their students.

To provide context for the current study, the following section provides an overview of the North Carolina induction program, developed to support the needs of teachers in their first three years of service to the state.

North Carolina Induction

States have increasingly depended on induction as the primary means of support for new teachers and North Carolina is one of those states. The principal elements in which teacher induction programs vary are the types of services teachers receive, program purpose, and the duration and intensity of involvement (Ingersoll & Kralik, 2004). The *Report on the Effectiveness of Representative Mentor Programs 2008-2009* presented to the State Board of Education (NC SBE, 2008) included a review of the induction programs in North Carolina's public school systems. This report found that since 1998, all NC teachers new to the profession were required to participate in an orientation session as part of their induction program. At the time of this study, the NC State Board of Education required each public school system to develop an Initial Licensure Plan describing their program for teachers in years one - three. Plans were

required to include four components: (a) orientation, (b) mentor support, (c) administrator support, and (d) professional development.

It has been found that supporting beginning teachers during their early years in the profession can make a difference in the learning experiences of their students (Furlong, 1997; National Commission on Teaching and America's Future, 1997). According to Gold (1996),

> Few experiences in life have such a tremendous impact on the personal and professional life of a teacher, as does the first year of teaching. The initial experiences are imprinted, embedding perceptions and behaviors regarding teaching, students, the school environment, and their role as a teacher….thus, a teacher's instructional and teaching-related behaviors are influenced significantly by initial imprinting (p. 548).

Beginning teacher induction, including North Carolina's program, is designed to positively impact the professional experiences of teachers' first years in the profession. A review of the relevant literature by component follows.

Induction Program Components

Orientation

Orientation provides an introduction to the profession and offer important learning experiences that help beginning teachers become familiar with pertinent information about the community at large, the culture of the school, and the school district policies (Feiman-Nemser, 2001; Stanulis, Burrill, & Ames, 2007). Having this knowledge before they enter the classroom provides a better understanding of the students and families they will be working with in the upcoming year. Often orientation

is also an opportunity for beginning teachers to meet their mentors for the first time (Stansbury & Zimmerman, 2000).

Orientation may vary in length and content. Some orientation programs offer only a seminar while others provide a full week of activities (Arends and Rigazio-DiGilio, 2000; Feiman-Nemser, 2001; Stansbury and Zimmerman, 2000; Wong, 2003). After studying new teacher support for many years, Breaux and Wong (2003) recommended that induction programs begin with four or five days of orientation before school begins. North Carolina school systems are mandated to provide three days of orientation. Essential elements include information regarding available services, overview of professional development opportunities, introduction to the teacher evaluation process, and explanation of the process needed for receiving a Standard Professional I license in that state (NC SBE, 2008).

The effectiveness of orientation has not been researched widely. Andrews, Gilbert, and Martin (2007) studied fourteen induction programs in two states and found that four of twelve support strategies were most often provided to the majority of new teachers, with orientation identified as one of the four. The authors surveyed novices teaching in these systems to determine which strategies were considered most valuable to them. Participating in special orientation sessions was one of only two supports that were rated as highly valued. However the focus of research looking at orientation as a component of induction was the effect on new teacher retention. No studies to date have considered the relationship between orientation and student achievement.

Mentor Support

Mentoring, assigning an experienced teacher to a teacher new to the profession for support and guidance, is the most commonly used element of new teacher support (Corbell, 2008) and mentors may have the greatest opportunity to influence beginning teachers. An expanding body of research indicates that teachers new to the profession benefit from mentoring programs but like orientation, mentoring programs vary by design and quality of experience (Lowrey & Reaves, 2008; Sawchuk, 2008; Smith & Ingersoll, 2004). Some beginning teachers are assigned mentors who do not teach the same subjects or grades as their novice partners. In other programs, mentors are located in different buildings or schools even when studies show that matching new teachers with carefully selected mentors can make a difference (Cohen, 2005; Huling & Resta, 2007; Wayne, Youngs, & Fleischman, 2005). Unfortunately, this practice continues, as reported by Smith and Ingersoll who determined that seven out of ten mentors did not teach the same subject or grades as their assigned novice partners (2004).

Mentoring programs also differ in the time mentors spend with their mentees. Mentors may only meet with their mentee before the school year begins with the remainder of the meetings consisting of brief conversations and chance meetings held in the hallway. Other mentor programs are highly structured, featuring frequently scheduled meetings. In this scenario, the beginning teacher and mentor may receive release time to plan together or to observe each other and other teachers. The amount of time spent working together can make a difference. Eberhard, Reinhardt-Mondragon, and Stottlemyer (2000) found that new teachers who reported meeting with their mentor for more than one hour each week had greater retention intentions in the profession than

did new teachers meeting less than one hour weekly with their mentor. In fact, in less successful schools (as measured by the extent mentors and beginning teachers used computer-based technologies for teaching mathematics), principals did not provide for or even schedule release time for mentors or beginning teachers to meet (Holahan, Jurkat, and, Friedman 2000).

Some mentors do not have the expertise needed to effectively guide beginning teachers to improve their practice. Wang et al. (2008) reviewed the literature on teacher induction since 1997 and analyzed what mentors do and what impact they have on beginning teachers' practice. They reported that some mentors are successful in moving beginning teachers forward in their learning and practice; however, effective mentoring is dependent on mentors who have the knowledge, skills and dispositions essential for success. "Such conceptions and skills do not naturally grow out of mentors' teaching experience" (Hughes, 2006, p.16) and working with another adult is very different from working with children. Mentors must be properly trained to support beginning teachers' learning. Evertson and Smithey (2000) found that beginning teachers with mentors who received proper training for their mentoring role were more organized, had better classroom management, and their students were more engaged than the students in classrooms of novices with mentors who were not trained.

The North Carolina mentoring program is based on best practice. It states that the induction program for beginning teacher will be "based on the belief that quality mentors are a critical key to the success of beginning teachers, providing needed emotional, instructional, and organizational support, each beginning teacher is to be assigned a qualified, well-trained mentor as soon as possible after employment" (NC SBE, 2008, p.

2). The State Board recommended that each beginning teacher is assigned a qualified mentor in his or her area of licensure for two years and housed in the same building as their mentee when possible. State board policy requires an established system for the selection and assignment of mentors. In addition, mentors participate in a training program (totaling 24 hours), enabling them to receive a minimal stipend for their efforts if funds are available.

Mentoring is often considered the most important element of a new teacher induction program (Wong, 2003) but the selection, assignment, and compensation of mentors are dependent on policies of the state, district, and/or school (Ingersoll & Strong, 2010). Wang et al. (2008) discovered that most mentors believe that their primary task is to provide emotional and technical support. Mentors also highlighted the importance of orienting novices to the school culture and policies, helping with time and classroom management skills, and providing feedback. These tasks are important indeed, but they stop short of guiding the beginning teacher through an active process of tying theory to practice that can only take place within the context of the classroom (Feiman-Nemser, 2001; Wang & Odell, 2002).

Researchers agree that providing time for on-going collaboration with mentors within the context of the classroom is especially critical for beginning teachers still learning their craft. Induction programs that include opportunities to engage with peers have been shown to have positive effects on beginning teachers' effectiveness as measured by standardized test scores (Berry, Daughtrey, & Wieder, 2010; Ingersoll & Strong, 2011; Kelley, 2004; Wong, 2003). However, little data is available relating mentoring to the achievement of students in the classrooms of beginning teachers.

Administrator Support

The importance of providing a variety of induction activities in addition to mentoring, supports the conclusion drawn by Johnson (2004) that schools should not assume one-on-one mentoring is the most effective induction service for all new teachers. The role administrators' play in the development of new teachers is readily acknowledged, and most comprehensive induction programs include administrative support (Grossman & Thompson, 2004; Kardos, Johnson, Peske, Kauffman, & Liu, 2001; Youngs, 2007). Critical to new teacher development is administrator involvement in the induction process (Coffey, 2008). Since 1968, the role that principal leadership plays in the success of both new and career teachers has been stressed. Swanson (1968) writes,

> A crucial factor in the cooperating teacher's (mentor teacher's) effectiveness is the degree to which the principal is willing to support the program. For if the principal considers the cooperating teacher's job as just another duty…the cooperating teacher will be forced to treat it as such and his accomplishments will be minimal. But if, on the other hand, the principal is convinced that schools must actively participate in the training of teachers and is willing to invest some time and energy in an induction program by carefully selecting a cooperating teacher who can be a 'teacher of teachers,' providing him with some extra time, and supporting him throughout the year in his work with beginners, then the results will more than justify the investment (p. 83).

The extent to which administrators support mentors' work can affect the extent to which beginning teachers learn their craft. Too often principals merely assign career teachers as mentors but never follow up to see if the relationship is working or if students are

learning (Wang, 2010; Wong, 2003).

Principals influence teacher growth according to the professional culture they establish in their schools. Principals who understood beginning teachers' challenges maintained a balance between career and new teachers. These principals "were actively present and responsive in the school; they focused on instructional issues, organized support for professional growth, and they purposefully promoted teamwork toward instructional improvement within the school" (Kardos et al., 2001, p. 279). Leadership practices can affect beginning teachers' experiences. In fact, teachers' descriptions of "principals they regarded as exemplary could be drawn from a textbook list of leadership traits: 'visible,' 'encouraging,' 'has high standards,' 'sets clear expectations,' 'consistent with discipline,' 'supportive,' and 'collaborative'" (Kardos, et al., 2001, p. 278).

Administrator's decisions to foster the professional growth of beginning teachers are influenced by their own professional backgrounds and beliefs about leadership, teacher evaluation, and an understanding of the ways induction programs can inform new teachers' practice (Youngs, 2007). In a qualitative study of twelve beginning teachers in six Connecticut elementary schools, Youngs (2007) builds on existing research (Burch & Spillane, 2003; Stein & D'Amico, 2002) by determining that interactions of principals promote new teachers' professional growth. According to Youngs, "principals who view themselves as instructional leaders are more likely to facilitate novices' work with mentors and colleagues and to address instructional issues in direct interactions with them" (p. 126). Conversely, school leaders who believe that the central purpose of induction is to assist new teachers with student behavior may provide fewer opportunities to address instructional issues (Feiman-Nemser, Carver, Schwille, & Yusko, 1999;

Youngs, 2007).

Youngs (2007) also identified principals as effective leaders if they had prior professional experiences that led to extensive knowledge of and commitment to new teacher development (i.e., experience leading beginning teacher seminars, conducting graduate research, or mentoring). Because of the small sample size the study cannot be generalized, but the researcher does recommend future research focusing on the relationship between administrator's beliefs and beginning teachers' perceptions of success. Consistent administrative support maintained across the induction period has emerged as a common thread in successful induction programs (Bartell, 2005; Breaux & Wong, 2003; Smith & Ingersoll, 2004).

In North Carolina, the induction program for beginning teachers will "provide for the involvement of the principal or designee in supporting the beginning teacher" (NC SBE, 2008, p. 1). However, the SBE did not specify what that involvement might entail. As expected, NC administrators are involved with the evaluation of new teachers. The teacher evaluation process requires at least three observations annually for new teachers by a qualified administrator or designee and at least one observation by a peer. Observations must be one continuous period of instruction (minimum 45 min.) followed by a post-conference. The NC Professional Teaching Standards provide the framework for the process and is the basis on which the principal rates the performance of the teacher and prepares a summative evaluation (NC SBE, 2008).

The literature presented in this review connected principal influence to retention, examined the importance of principals establishing a supportive professional culture, and determined that administrator's decisions and actions are influenced by their backgrounds

and professional beliefs about induction and leadership. Missing from the literature are studies that link the influence of administrators to the achievement of students in the classrooms of beginning teachers.

Professional Development

Most induction programs include professional development activities designed specifically for beginning teachers. Seminars, workshops, group or team meetings, and conferences are examples of activities often included in this component (Wang & Odell, 2002). Ideally, professional development for beginning teachers should meet the best practices criteria established for all professional development. One group of researchers, Timperley, Wilson, Barrar, and Fung, (2007), identified characteristics of effective professional development as activities that are sustained over time and engage teachers in challenging topics about learning.

Although Darling-Hammond, Wei, Andree, Richardson, and Orphanos (2009) report that 67.6% of beginning teachers in the United States participated in seminars for beginning teachers in 2003-2004, a number of studies they reviewed found seminars to be ineffective. Even when induction workshops were sustained over time, with one program requiring workshops stretching over four years, no changes were reported in the practice of beginning teachers (Wang et al., 2008). Essentially, clearly identifiable connections between professional development and student outcomes are often difficult to determine (Guskey, 2003; Harrison, 1980; Joslin, 1980; Wade, 1985; Yoon, Duncan, Lee, Scarloss, & Shapley, 2007).

In an experimental study in 2008, NCTAF and Georgia State University (GSU) designed *Cross Career Learning Communities,* an induction program for new teachers

hired to teach in high-need schools in the Atlanta area. Program components incorporated opportunities for professional development. Learning communities were established to facilitate conversations about professional development and were available face-to-face or through a technology-mediated platform. The expected outcomes of this support included higher retention rates for new teachers and increased student achievement as measured by performance on standardized testing. The final report indicated that the NCTAF/GSU project was beneficial in creating an environment that was positive for teachers (Black, Neel, & Benson, 2008). This study is significant because of the connection found between induction and student achievement. Statewide testing data was positive, showing "statistically significant improvement in elementary treatment schools contrasted with the comparison schools and a continued superior achievement in middle schools" (p. 17). An increase in achievement scores was also seen for high schools, but the increase was not statistically significant.

Schaffer, Stringfield and Wolfe (1992) reported on a North Carolina induction program that required first and second year teachers to meet weekly for three hours addressing topics such as classroom management, instructional feedback, or analyzing student assessment data. Teachers shared observational data about their own instructional practice within a small group setting. Although this study reported gains in teacher behaviors that *could (emphasis added)* lead to higher levels of student achievement there were several limitations: 1) No correlations were made between the gains in teacher behaviors and improvements in student learning; 2) A comparison group was not part of the study; and 3) the researchers failed to isolate specific program elements that could determine impact on outcomes (Schaffer et al., 1992).

Kaplan and Owings (2004) affirmed that professional development can improve teaching quality and student achievement. Most recently, Guskey and Yoon (2009) reported on a syntheses of over 1,300 studies on professional development between 1986-2006, entitled *Reviewing the Evidence on How Teacher Professional Development Affects Student Achievement.* While only nine of the studies met the criteria established by the What Works Clearinghouse, the following are common threads showing a positive relationship between professional development and improvement in student learning appeared:

- Workshops or summer institutes that "focused on the implementation of research-based instructional practices, involved active-learning experiences for participants, and provided teachers with opportunities to adapt the practices to their unique classroom situation" (p. 496).
- Time spent in professional development is critical with positive effects realized if the professional development included 30 or more contact hours.
- As recommended by Shulman (1986) all nine studies "centered directly on enhancing teachers' content knowledge and pedagogic content knowledge" (p. 496).

In North Carolina, professional development is addressed through the induction program that will "provide for a formal means of identifying and delivering system-wide and school-level services and technical assistance (i.e., Professional Development) needed by beginning teachers" (North Carolina State Board of Education, 2008, p. 2).

Currently, little empirical evidence identifies the relationship between professional development activities and beginning teacher outcomes. Instead research

about this component must be "pieced together from studies focused on induction generally" (Cohen, 2005, p. 35). There are several explanations for the lack of research about professional development that is focused solely on beginning teachers: (a) it is not easily distinguishable from the professional development opportunities offered to all teachers; (b) mentoring has been the primary focus in the induction literature; (c) high-quality professional development as a component in teacher induction may be uncommon (Cohen, 2005). In addition, many induction program developers do not provide professional learning opportunities within the context of teaching that: (a) engage new teachers in challenging topics, (b) encourage practice-centered conservations, and (c) create a community of learners (Timperley et al., 2007).

Teacher Quality and Student Achievement

Uncertainties surrounding the quality of teachers are great: new teacher attrition; an absence of effective induction programs that help beginning teachers translate theory to practice; the lack of standards for mentors and preparation for mentors that will provide the knowledge and skills needed to move novice teachers to the next level of teaching and learning; and dwindling resources to resolve these problems in today's economic crisis. Research confirms the important role that consistently knowing what and how to teach plays in student achievement (Darling-Hammond, 1997; Kaplan & Owings, 2004). Unfortunately, the *No Child Left Behind* act described an effective teacher as one who was considered highly qualified. This legislation went on to define highly qualified teachers as those who earned a bachelor's degree, state licensure, and could prove that they knew the subjects they teach, most often by taking a test or a predetermined number of content courses. As a result, many policymakers narrowly

define teacher quality in terms of teachers' academic abilities (Brown, Morehead, & Smith, 2008), even though there is little evidence that educational level or degree makes a difference in student achievement (Rockoff, 2004).

The research makes clear that teachers can make a difference and do impact the learning of the students in their classrooms. African American children, according to a study by Sanders and Rivers (1996), were found to make gains almost three times as large as Caucasian students if they were assigned to an effective teacher (as measured by student achievement on state standardized tests). Additionally, Nye, Konstantopoulos, and Hedges (2004) reported that in Dallas in the mid-1990s, children scored an average of 49 percentile points greater on a standardized reading assessment if they were placed with effective teachers three years in a row than did children who spent three years in a row in the classrooms of ineffective teachers. The findings in these reports indicate that student performance is influenced more by teacher quality than race, class, or school and the quality of the teacher is even more important for disadvantaged children than for advantaged children (Clotfelter, Ladd, & Vigdor, 2007). In fact, Wong (2003) reports "differences in teacher quality account for more than 90 percent of the variation in student achievement" (p. 1).

Research also shows that with each year of experience, teachers improve their proficiency and effectiveness. A 2009 study by Huang and Moon found that additional years of teaching at the same grade level lead to direct positive impact on student achievement for up to 20 years of teaching experience. Most recently, Henry, Thompson, Fortner, Zulli, and Kershaw (2010) report that all teachers make a difference on student achievement, but for teachers with less than five years experience the impact is greater.

These researchers determined that having a beginning teacher in a North Carolina public school system has a significant, negative impact on student achievement as evidenced by North Carolina End-of-Course (EOC) and End-of-Grade (EOG) standardized test scores in elementary, middle school and high school. Specifically,

> The average difference in being taught by a beginning (elementary mathematics) teacher amounts to the loss of approximately 17 days of schooling…and in middle school (the loss) is equivalent to almost 39 days of schooling…or 20% of instructional time during that year (Henry et al., 2010, p.9).

Induction, Engagement, and Student Achievement

New teacher induction varies in the number and comprehensiveness of program components. Even among induction programs that originate from state level policies sensitive to the needs of new teachers, "individual program quality may vary considerably within states and reflects the different capacity, needs, and commitment of local schools and school systems" (Cohen, 2005, p. 31). Induction programs originally grew out of concerns regarding the retention of beginning teachers until recently when induction goals were revised in response to calls for education reform and greater teacher accountability. The next logical step is to explore the connection between new teacher induction and student learning.

Studies that focused on the potential relationship between induction programs and student achievement are most often centered on mentoring, the most common induction component (Ingersoll & Smith, 2004). As previously stated, the structure of mentoring may vary widely according to the selection and training of mentors, amount of release time the mentor receives, appropriateness of the mentor-mentee match, or the type of

support provided by mentors. Serpell and Bozemann (1999) posit that student learning is improved if the induction program includes opportunities for teachers to gain knowledge of and implement effective instructional practices. New teachers supported by mentors who participated in mentor training are more likely to make changes in instructional practice. And instructional practice may be related to changes in student achievement (Evertson and Smithey, 2000).

Ingersoll and Strong (2011) reviewed four studies that linked beginning teacher's participation in induction (specifically mentoring) to the academic achievement of their students. The first study by Rockoff (2008) used standardized test scores to compare New York City fourth through eighth grade beginning teachers who spent more time with their mentors to novices who received less time. This study found evidence that novices who spent more time with effective mentors had greater student gains as measured by performance on achievement tests in both mathematics and reading than those who spent less time working with their mentor. The extent of these effects is great, with student achievement increasing by 0.10 standard deviations in mathematics and 0.06 standard deviations in reading with just 10 additional hours of mentoring.

A two-year study conducted by Fletcher, Strong, and Villar (2008) also reviewed the effects of varying models of mentor support to student achievement data in mathematics and reading of beginning teachers. Three models were explored– beginning teachers who were assigned:

- Full-release mentors for two years (15:1 ratio)
- Full-release mentors for year one (15:1); full-release mentors for year two with higher caseloads (35:1)

- Full-release mentors for year one (15:1); onsite mentors with no release time for year two.

Using regression analysis on the class-level value-added test score data, the authors determined that students in the classrooms of teachers supported by full-release mentors for two years showed greater gains as measured by performance on standardized tests than students in classrooms of teachers who had full-release mentors (15:1 ratio) for only one year. These results suggest that there is a positive relationship between the amount of mentor contact time and student achievement scores (Fletcher, Strong, & Villar, 2008).

The third study reviewed by Ingersoll and Strong (2011) examined the relationship between different mentoring designs and the achievement of students (Fletcher & Strong, 2009). Two types of mentoring were in place: (a) full-release mentors and (b) onsite mentors who were also teaching fulltime. The findings show that students in classrooms of beginning teachers who were supported by full-release mentors had greater gains on standardized tests, regardless of grade level or content. Until further research corroborates the results, the authors caution against making generalizations because the number of classes in the study was small. The fourth study by Thompson, Paek, Goe, and Ponte (2004c) had three goals: (a) investigate the role of induction on retention, (b) document changes in beginning teachers practice, and (c) investigate relationships between the achievement of students and novices' engagement with induction programs. This study will be more thoroughly discussed in the conceptual framework section that follows.

Ingersoll and Strong (2011) note limitations in the induction literature reviewed regarding the effects of induction and teacher outcomes. "Since the activities of an

induction program are at least one step removed from the students, it is challenging to design research that can test the existence of a causal relationship between new teacher induction and student achievement" (Ingersoll & Strong, 2011, p. 220). They found these limitations: (a) the research design: no studies used random assignment of students, teachers or mentors and (b) controls: factors were not controlled (e.g., district resources may vary between schools or levels of students in classrooms may vary).

Glazerman, et al. (2010) and Isenberg et al. (2009) concluded that: (a) Scholarship lacks adequate definitions of the constructs of induction, retention, and teacher quality; (b) Researchers often rely only on self-report; (c) Many of the studies use only one outcome measure; (d) Outcome measures are not always aligned with the treatment(s) teachers receive; (e) Contamination of the treatment groups because the comparison groups are in the same school; and (f) Poor attention is paid to participant attrition.

Most educators are familiar with the concept of student engagement, especially the possible relationship between high student engagement and greater student achievement (Marks, 2000). According to Hakanen, Bakker, and Schaufeli (2006) although there have been few studies focusing on teacher engagement, greater involvement among personnel in other professions has demonstrated a connection to increased motivation, productivity, and retention. These researchers posit that students of teachers who are highly engaged might also be highly engaged, which in turn could lead to higher student achievement.

What is teacher engagement? Marks (2000) found that teachers' engagement "centered on the work they do with students in classrooms, or as more than one

participant described it, 'the teaching part of teaching' (that was) essential to their professional motivation" (p.10). In turn, teachers who were not focused on their work may not have had opportunities to engage with other professionals or they may lack support by administrators in their school or school system (Kirkpatrick, 2007). More studies that focus on teacher engagement could provide a better understanding of teacher development. The operational definition of engagement used in this study is the "interest in, enthusiasm for and investment in teaching; centered on the work (teachers) do with students in classrooms" (Kirkland, 2007, p.10)

The literature on the relationship between new teacher induction and student achievement is conflicting, suggesting that more developed programs seem to make a difference in teachers' instructional practice as well as student achievement. However, empirical studies are not common and few demonstrate observable changes in instructional practice or report measurable impacts on student achievement (Darling-Hammond et al., 2009; Ingersoll & Strong, 2011). In summarizing their research, Ingersoll and Strong did not uncover findings that proved beyond a reasonable doubt that there is a relationship between induction and student achievement. The results of this research review reinforce the need for more rigorous studies of the impact of induction program components on the student achievement of students in beginning teachers' classrooms. "Without this connection, claims that induction programs directly support teaching reform for novices are empirically premature" (Wang, et al, 2008, p.146).

Theoretical Framework

The role that new teacher induction programs play in student achievement supports a framework of understanding based on the work of Feiman-Nemser (2001) and

Thompson et al. (2004c). Feiman-Nemser posits that induction theory is built on the notion that teaching is complex work all of which cannot be learned during pre-service training. Induction programs are charged to provide the knowledge and skills needed to improve classroom-based teaching practices, ultimately improving student learning. Thompson, et al. (2004c) propose that beginning teachers' *engagement (emphasis added)* with induction programs provides a key to student learning, which in turn effects student achievement.

Pre-service preparation can be defined as the education teacher candidates receive before they are hired in the schools. This period of time includes numerous field experiences and culminates with a student teaching or internship experience. Although many new teachers graduate from outstanding teacher education programs with yearlong internships, they often feel they are not ready to face the realities of the classroom (Johnson & Birkeland, 2002). Becoming a teacher requires "a change in role orientation – moving from knowing about teaching through formal study to knowing how to teach by confronting the day-to-day challenges (that occur in the classroom)" (Feiman-Nemser, 2001, p. 1027).

One study that linked induction to student achievement was a research project by Thompson et al., (2004c). Using a quasi-experimental design, Thompson et al. compared the engagement of teachers who participated in a statewide induction program to the achievement of their students. To determine engagement level, survey responses from 1,125 third-year teachers were rescaled and weighted based on different aspects of teacher experience, learning, and attitudes. Engagement scores were used to classify respondents into three groups: high, middle, or low. Using hierarchical linear modeling,

the authors compared teacher engagement scores to their students' performance on six subtests of California's testing program. The analysis found that, "across all six subtests of the standardized achievement exam, the students of teachers who had a high level of induction engagement outscored the students of teachers with a low level of engagement, after controlling for other factors" (p.13). Although the scores were not statistically significant, the researchers found consistency across the tests leading them to the conclusion that the California induction program had a positive impact on student achievement.

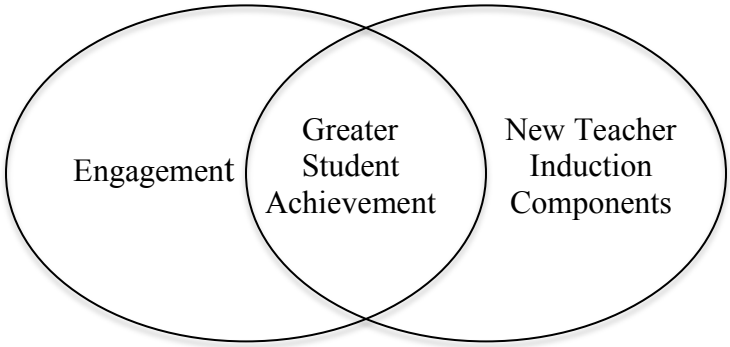
The purpose of this study is to examine the relationship between teachers' engagement in North Carolina's beginning teacher induction components and the learning of their students, as reflected in performance on standardized achievement tests (End-of-Course tests) by answering the following questions:

1. To what extent do high school teachers have access to and participate in North Carolina's beginning teacher induction program during their first two years of teaching?
2. How do second year high school teachers' engagement level scores differ across induction components?
3. What is the relationship between second year teachers' engagement level scores with induction components and the learning of students as measured by performance on state standardized tests?
4. What are the perceived impacts of second year high school teachers' induction components on their teaching? Furthermore, how do these perceptions relate to student achievement in their classrooms?

Findings that assist school leaders and policymakers to develop evidenced based induction programs, consisting of components that will not only keep beginning teachers in their classrooms but also provide them with the knowledge and skills to make a positive difference on the learning of their students are anticipated. Figure 1 presents the theoretical framework model for this study representing the relationship between beginning teachers' engagement in new teacher induction components and student achievement.

Figure 1

Model: Theoretical Framework



This chapter presents a review of induction literature relevant to the relationship between beginning teacher induction components and student achievement. Chapter Three provides clarity of the research design and methodology. The instrument used to gather the data, procedures, and selection of the sample are also described.

CHAPTER 3: METHODOLOGY

This chapter describes the methodology used in carrying out this research study, giving special emphasis to the development of the survey instrument. The chapter is divided into three sections. First, the characteristics of the participants will be described. Second, the psychometric properties of instruments will be explained. Third, procedures regarding data collection will be detailed. The following research questions were used to guide this inquiry:

1. To what extent do high school teachers have access to and participate in North Carolina's beginning teacher induction program during their first two years of teaching?
2. How do second year high school teachers' engagement level scores differ across induction components?
3. What is the relationship between second year teachers' engagement level scores with induction components and the learning of students as measured by performance on state standardized tests?
4. What are the perceived impacts of second year high school teachers' induction components on their teaching? Furthermore, how do these perceptions relate to student achievement in their classrooms?

Rationale

The purpose of this study was to examine the relationship between beginning teachers' engagement with induction program components and student achievement. In addition, this study determined which induction program components were available to second-year teachers; the perceptions new teachers had regarding their impact on student

learning; and how those perceptions related to student achievement. One outcome was to determine if engagement in induction components predicts student achievement. A correlational research design was used. In addition, an online survey was selected as the preferred method of administration for several reasons (Evans & Mather, 2006). Online surveys:

- Permit branching options, which allow participants to see only the questions pertinent to them.
- Can be administered and data downloaded in a timely manner; follow-up reminders to increase response rate can be sent easily.
- Allow respondents to answer at a time most convenient to their schedules.
- Are capable of including a wide variety of question types, i.e., dichotomous, multiple choice, scale, and open-ended.

Context

This study was conducted in North Carolina public school systems over the course of eight weeks, April 11, 2011 – June 6, 2011. Permission was requested from 62 central office administrators to conduct the study March 15, 2011. High school teachers who were in their second year of teaching and who were teaching courses requiring the NC standardized End of Course tests were recruited. Twenty-one coordinators (34%) responded positively that their second year high school teachers had permission to participate in the survey. For purposes of confidentiality, the names of the school systems who participated will not be revealed.

Respondents

The target population for this study was North Carolina high school public school

teachers in their second year of teaching in 2010-2011. The decision to focus on teachers in their second-year was based on the premise that they have completed the critical first year of teaching and according to Hayes (2006) are moving toward a refinement of teaching and improvement in student learning. In addition they are close to their first year induction program experiences. Second year teachers are also required to participate in the induction program provided by their school system (NC SBE, 2008).

The study was also limited to high school teachers, at the recommendation of the North Carolina Department of Public Instruction (DPI). The primary reason is that scores from state mandated tests can only be accurately linked to high school teachers due to the reporting method, i.e., the test scores for Algebra I students are matched to the teacher who taught that Algebra I course. At the middle or elementary levels, scores are often reported by homeroom, not necessarily by the teacher who taught the tested subject. End of Course testing is part of the North Carolina statutory growth and performance accountability requirements of the *No Child Left Behind* act. Only courses included in the accountability program are required to administer a statewide-standardized test, therefore the sample was drawn from those high school teachers teaching courses requiring End of Course (EOC) tests. The sample therefore, consisted of the teachers responding to the survey who are teaching in the same school system for their second year and who taught an EOC tested course in 2010-2011. The tested subjects are algebra I, algebra II, biology, civics/economics, English I, geometry, physical science, and United States history.

Teachers who transferred from another state were not included in the study, because participants were asked to report on their induction experiences in North

Carolina from years one and two. Charter and private school teachers were not considered because their schools are not required to submit Beginning Teacher Support Program Plans to the North Carolina State Board of Education (NC SBE, 2008). In addition, they are not required to follow state board recommendations for beginning teacher induction programs.

Instrumentation

The instrument used in this study was the researcher-designed North Carolina Beginning Teacher Induction Program Survey (NC BTIPS). This survey, located in Appendix A had several purposes: (a) To verify the extent 2nd year teachers had access to and participated in the North Carolina Beginning Teacher Induction Program; (b) To determine 2nd year high school teachers' engagement level with induction components; and (c) To determine which components the teachers perceived to have the most impact on their teaching. The items on this survey were identified from both the practices of the participating districts and the induction literature. An instrument designed to determine the engagement level of beginning teachers also impacted the development of the BTIPS (Thompson et al., 2004a). Information regarding the reliability and validity of that instrument (Beginning Teacher Support and Assessment Program/ California Formative Assessment and Support System for Teachers BTSA/CFASST) can be found in the *Study of the impact of the California formative assessment and support system for teachers: Relationship of BTSA/CFASST engagement and student achievement* (Thompson, et al., 2004a).

The construction of the *Beginning Teacher Induction Program Survey* (BTIPS) instrument was guided by the induction literature and recommendations of the NC State

Board of Education regarding the induction of beginning teachers in the state. BTIPS incorporates items that are conceptually related to four induction components: (a) orientation, (b) mentor support, (c) administrator support, and (d) professional development (NC SBE, 2008). An additional section is included to gather participant demographic information. Data from the North Carolina End of Course tests were used to determine if induction components related to student achievement.

Pilot Testing

Pilot Instrument

The BTIPS instrument was piloted in March 2011 using third-year high school teachers. This group was preferred because they are very similar to the research sample in the following ways:

- Classroom experience –only one additional semester of experience in the classroom than the sample
- Grade level – high school teachers teaching EOC courses
- Induction – participants in the North Carolina induction program

On February 9, 2011 Beginning Teacher Coordinators from the seventeen public school systems in the university's service area were sent an email explaining the purpose of the pretest and requesting permission to survey third year high school teachers. Eleven coordinators responded (65%). The names and email addresses of the teachers in ten systems were collected from coordinators and entered into Qualtrics, an online software survey tool supported by the university. The eleventh school system had a policy that prohibited external groups to distribute surveys to their teachers. The beginning teacher coordinator volunteered to forward information about the survey to the teachers in that

system.

BTIPS was posted on Qualtrics on March 3rd. An email message was then sent to 59 qualifying teachers providing information regarding the purpose of the study, guarantee of confidentiality, and a link to the survey. Pilot participants had two weeks to respond. As cited by Sue and Ritter (2007), Kittleson reports that response rates increase if follow-up email reminders are sent to potential participants. The most optimal time is one-week after the initial email with response rates increasing from 27.5% to 52.2%. Capitalizing on this research, one follow-up email was automatically sent by Qualtrics after the first week to those who had not responded. It is unknown if the coordinator sent the reminder to the teachers in the eleventh system. The response rate for the pilot was 32% (N=19). Two responses were incomplete, leaving seventeen cases for analysis.

The pilot group was asked to identify items that were confusing or misleading and to note if the survey directions were clearly stated. Because the survey was online, the pilot group was also asked to pay close attention to the layout of questions on the screen, or the visual presentation – important to the success of online surveys (Presser, Couper, Lessler, Martin, J., Martin, E., Rothgeb, & Singer, 2004). Pilot participants were encouraged to write comments at the end of the survey regarding their thoughts while completing survey items. The pilot survey contained:

- 148 total items
- 139 Likert-like scale items
- 9 optional open-ended items
- 10 demographic items
- 30 items addressing the survey

Goritz (2006) conducted two meta-analyses to determine the effectiveness of incentives in online studies and found that material incentives motivate participants to begin virtual surveys by as much as 27%. Based on these analyses, offering material incentives was used as a strategy for increasing response rates. At the end of the survey, pilot teachers had the option of entering their name in a drawing for two Visa gift cards in the amount of $50.00 each. They were reminded that their responses were confidential. Those choosing to participate submitted their name and their mailing address. Respondents who did not enter their name were routed to the last screen thanking them for participating. Visa gift cards were purposefully selected as incentives because they can be used at multiple businesses and are relevant for all participants, regardless of age, gender or geographic region. Respondents choosing to enter in the drawing were assigned a number. The Stat Trek random number generator selected the recipients (http://stattrek.com/Tables/Random.aspx). Table 1 displays descriptive statistics for pilot-teacher responses to question clarity, appropriateness of content, and format.

Table 1

Descriptive Statistics: Pilot Responses

Variable	Mean	Standard Deviation
Visual appearance	3.200	0.41
Number of items on each screen	3.000	0.37
Ease of navigation	3.133	0.51
Items addressed typical induction supports	3.000	0.37
Topics were relevant	3.000	0.37

Note. Likert-like scale ranged from 1=Strongly Disagree to 4= Strongly Agree. N = 15.

The internal consistency reliability of the pilot was established by calculating coefficient alphas, which describe how well items fit together in their measurement of the same construct. Coefficient alphas were computed for the questions in each construct (component), with an alpha of 0.70 or above considered to indicate good internal reliability (Gilem & Gilem, 2003). Mini-Tab 16, a statistical analysis package, analyzed internal consistency of the pilot BTIPS. All coefficients correlated at 0.78 or higher. Table 2 displays these data.

Table 2

Internal Consistency Reliability Item Analysis: Pilot Test

Induction Component		Cronbach's Alpha
Orientation		
	Activities offered by school system	0.78
	Extent knowledge/skills enhanced	0.93
	Extent teaching practice enhanced	0.92
	Total	0.94
Mentor support		
	Support offered	0.86
	Support provided	0.89
	Extent knowledge/skills enhanced	0.97
	Extent teaching practice enhanced	0.95
	Total	0.97
Administrative Support		
	Assist with professional development plan	0.84
	Extent knowledge/skills enhanced	0.91
	Extent teaching practice enhanced	0.82
	Total	0.91
Professional Development		
	PD activities offered	0.83
	PD activities emphasized	0.81
	Extent knowledge/skills enhanced	0.87
	Extent teaching practice enhanced	0.87
Total Pilot Test		0.95

Validity

To investigate content validity of the BTIPS and ensure that items selected for inclusion in the survey adequately and accurately represent induction program components, a panel of 10 experts made up of representatives of the North Carolina

Department of Public Instruction (NC DPI), NC State Board of Education (NC SBE), and Beginning Teacher Coordinators from NC public schools. Faculty with research interests in beginning teacher support from both public and private NC Institutions of Higher Education also served on the panel. The panel analyzed survey items and shared their opinions regarding whether those items accurately represented components of the NC induction program. They also reviewed survey statements for wording that was inaccurate or confusing, as well as survey length (Fowler, 2009). In addition, they were provided the opportunity to write comments about the survey as a whole. The survey was sent via email. Space was provided for written comments at the end of each cluster of questions. A hard copy was mailed to one panel member at his/her request.

Suggestions by content experts and teachers completing the pilot informed revisions to BTIPS, resulting in a 143-item survey. Nine optional open-ended questions were included to allow participants to add comments regarding their experiences with induction components. An overview of changes made follow:

- Removed "other" as a choice
- Increased font size
- Revised question stems/choices and revise to ensure consistency in terminology (i.e., behavior management and classroom management)
- Revised statements for positive/negative connotations
- Revised question format – changing from multiple response to dichotomous items
- Omitted items relating to virtual mentor support and supports from colleagues to more closely align with SBE policy and to shorten the survey

A summary of suggestions by the expert panel and pilot teachers can be found in Appendix B.

Test-retest was used to determine the stability reliability for the BTIPS instrument. This procedure focused on the extent scores were stable over time or were stable from one test administration to the other. Seven pilot teachers (39%) completed the survey a second time. The retest was available for three weeks with the response intervals between submission dates ranging from a low of 12 days to a high of 20 days with a mean of 15.6. According to Creswell (2008), a positive, reasonably high correlation of 0.6 or higher indicates good test-retest reliability. The correlation between the separate administrations of the total BTIPS was 0.79. The correlation coefficients ranged from 0.67 for the variable orientation to a high of 0.85 for professional development, with all components falling within the high range. Results are reported in Table 3.

Table 3

Test-retest Reliability of Survey Instrument

Component	Pearson *r*	P-value
Orientation	0.67*	0.02
Mentor support	0.81***	0.000
Principal support	0.80***	0.000
Professional development	0.85***	0.000
Total Test	0.79***	0.000

Note, $*p < .05$. $** p < .001$.

The Rasch model, a one-parameter Item Response Model (IRT), was used to determine teachers' engagement level scores. The person reliability index indicates that if this sample of teachers were given a comparable set of items measuring engagement in induction program components, they would fall at the same place along an engagement ruler and their logit scores would be similar. In addition, the Rasch model determines an item reliability index. This index suggests that if these items were given to a similar sample of the same size, the item estimates would remain the same (Bond & Fox, 2008). Both teacher and item reliability were high as shown in Table 4, indicating stability of engagement measures and consistency in inferences.

Table 4

Teacher and Item Reliability: Rasch Rating Scale

Component	Teacher Reliability	Item Reliability
Orientation[a]	.90	.78
Mentor support[a]	.94	.82
Principal support[b]	.93	.63
Professional development[b]	.89	.83
Total	.97	.84

Note. [a]n = 20. [b]n = 22.

Two fundamental assumptions of IRT must be addressed: unidimensionality and local dependence (Hambleton & Swaminathan, 1985). Survey items used in the analysis measured only engagement, demonstrating unidimensionality. Items were modeled from other instruments measuring engagement, including the Beginning Teacher Support and

Assessment Program/ California Formative Assessment and Support System for Teachers survey by Thompson et al. (2004a). In addition, responses to engagement items on the BTIPS were independent of each other, demonstrating local independence. For example, the response to one question is not dependent on the response to question two.

Responding teachers rated the extent their knowledge or teaching practice was enhanced as a result of participating in that particular induction component. The item development process drew from the induction literature and was based on the work of Yoon, Duncan, Lee, Scarloss, & Shapley (2007) who posit that student achievement is influenced when teacher knowledge and skills (practice) improve classroom teaching and improved classroom teaching would in turn raise student achievement. The researchers go on to explain that "if a teacher fails to apply new ideas from professional development to classroom instruction, for example, students will not benefit from the teacher's professional development" (p.11). For example, in the section of items addressing the mentoring component teachers were asked to respond to the prompt: *To what extent do you feel that your teaching practices were enhanced as a result of the support your mentor provided?* Response items were:

- *The ability to teach content effectively*
- *The ability to use a variety of instructional methods*
- *The ability to address needs of diverse learners*
- *The ability to manage the classroom effectively*
- *The ability to communicate effectively with parents*

Responding teachers responded to the identified engagement items using a Likert-like scale that ranged from 1 = not enhanced to 3= greatly enhanced. The same items were included in the orientation, administrator, and professional development components.

Procedures

Data Collection

Using a single-stage sampling procedure, two types of data were collected in this study, as indicated in Table 5: (a) responses to survey items regarding their access to, participation in, engagement with and perceived impact of induction program components and (b) EOC achievement scores from students in the classes of respondents for the academic year 2009-2010.

Table 5

Types of Data Collected

Type of Data	Data	Data Source
Responses to survey items	Access to/participation in induction; engagement level scores; perceived impact student achievement	BTIPS
Student Test Scores	2010-2011 EOC scores from: Algebra I, Algebra II, Biology, Civics/Economics, English I, Physical Science, and United States History	NC DPI

The Request for Review of Human Subjects Research was submitted to Western Carolina University's Internal Review Board and approved (WCU IRB Registration No 2011-173). In February 2011, a representative from NC DPI identified 62 public school districts employing second year high school teachers teaching courses requiring a state-mandated standardized test during 2010-2011.

To protect participants in the study, Beginning Teacher Coordinators in these systems were sent an email message providing an overview of the research study requesting permission to survey their teachers. The message provided information regarding the purpose of the study, assurances that teacher names will be confidential, and information about incentives. Beginning teacher coordinators were encouraged to contact the researcher with questions or concerns. Follow-up phone calls were made to coordinators who did not respond to the initial contact. Twenty-one coordinators (34%) granted permission to conduct the study in their system. School systems within the service area of the university with teachers meeting the criteria were most responsive (45%, N=10) when compared with the other regions of the state. This could be attributed to their familiarity with the university and/or researcher who coordinates a regional beginning teacher support program.

A total of 173 teachers from twenty-one systems were contacted by email inviting them to participate in the study and 30% (N=52) responded. The email message provided information regarding the purpose of the study, assurances that participant names would be confidential, and a link to the survey housed on Qualtrics, an online survey tool. A copy of the email can be found in Appendix D. Informed consent was obtained online and can be found in Appendix E. The survey was available April 6 – June 11, 2011 and as with the pilot, a follow-up email was sent by Qualtrics after the first week. However an additional reminder was sent after the third week to those who had not responded (Kittleson as cited by Sue & Ritter, 2007). As with the pilot project, participants were also offered incentives (four $50.00 Visa gift cards) to take the survey (Goritz, 2006). The timing of the survey presented several challenges:

- Survey administration occurred at the same time beginning teachers were preparing students for high stakes standardized tests, an especially stressful time.
- Inclement weather during the winter months resulted in an overlap between the administration of the state standardized testing window and the dates the survey was available as districts revised their schedules to make up missed days.
- School system policies regarding surveys from external sources also presented a challenge. Seven districts did not allow universities directly survey their teachers. Instead coordinators forwarded the survey link to their teachers. These teachers missed the automatic email messages from Qualtrics. It is unknown if the coordinators sent out reminders.
- The study was researcher-initiated (as opposed to school district-initiated) which might have resulted in a lower commitment from school system administrators to promote the survey.
- Uncertainties surrounding the state budget could have impacted the response rate. Some districts released information about their intent to impose a Reduction in Force (RIF) for beginning teachers during the same time period the survey was posted. Potential RIFed teachers may have been anxious about their employment status and did not take the time to complete a survey focusing on beginning teacher support.

The list of respondents was sent to a representative of NC DPI who provided EOC test scores for students in the classrooms of responding teachers. Test data were collected for each EOC course taught by the teachers during 2010-2011. Student test score data did not include student names or any other identifying information. To ensure

that test results remained anonymous, items with no reported scores or the number of students was too small (five or fewer) a N/A (not available) was displayed.

Data Analysis

Data was imported from Qualtrics. Fifty-two (30%) teachers submitted the survey and 83% (N=43) completed it. Twenty-one percent (N=11) entries were removed from the data set because more than one data point was missing in a component. Entries removed because those teachers did not teach classes requiring End of Course tests were 19% (N=10). The remaining 22 respondents met the required criteria: (a) second year teachers, (b) high school teachers, (c) teaching a course requiring a NC standardized test, and (d) participating in a district-wide induction program. Mini Tab 16 statistical software was used to analyze data.

Research questions one and two were answered using descriptive statistics. For each component of induction, a Rasch rating scale model was used (WINSTEPS version 3.72.3 software) to determine respondent scores along the level of engagement "ruler" or construct (Andrich, 1978). These scores were used as teachers' engagement scores to answer research questions two, three, and four. Analysis of question two included an Anova followed by Tukey HSD. Pearson *r* was used to determine the relationship between engagement level scores by component and student achievement and to determine the relationship between perceived impact on teaching and student achievement. Multiple regressions analysis followed. Table 6 presents the analyses of data for the study by question.

Table 6

Data Analysis by Research Question

Research Question	Data	Method of Analysis
1. Extent teachers have access to and participate in induction program components	Response to survey items: 1-12; 31-49; 73-87; 104-133	Descriptive statistics by component
2. Difference between engagement level scores by component	Engagement level scores by component – response to survey items: 13-28; 50-69; 88-100; 134-149	1. Rasch rating scale to determine engagement level scores 2. Using the median and quartiles, divide scores into high, medium and low engagement by component 3. ANOVA followed by Tukey HSD
3. Relationship between teachers' engagement level scores with induction components and student achievement	Engagement level scores by component and student achievement scores Mean and standard deviation scores of achievement scores by academic year	1. Engagement level scores (see above) 2. Pearson *r* correlation ($p < .05$) to determine relationship between engagement level scores by component with student achievement 3. Based on existence of relationships - multiple regression analysis will be used to determine if engagement scores would significantly contribute to predicting student achievement
4. Effect of perceived impact on student achievement	Response to survey items: 29, 71, 102, 150	1. Frequencies/percent – perceived impact on teaching 2. Linear regression to determine if perceived impact would significantly contribute to predicting student achievement

Summary

Information provided in Chapter Three relates to the design and methodology used to carry out this investigation and the rationale for the use of a correlational research design. The procedures for data collection and analysis followed a description of the survey sample. Chapter Four describes and summarizes results from the statistical analyses used to evaluate the research questions established in previous chapters. Chapter Five presents a discussion of the findings, conclusions and recommendations for future research.

CHAPTER FOUR: ANALYSIS OF DATA

The purpose of this study was to examine (a) the extent to which beginning teachers had access to and participated in induction program components, (b) how engagement level scores differed across components, (c) the relationship between second year high school teachers' engagement (as measured using the Rasch rating scale model) with components induction program components and student achievement as reflected by performance on standardized tests (the North Carolina End-of-Course tests), and (d) beginning teachers' perceived impact of induction components on their teaching and how those perceptions related to student achievement.

A correlational design was used. The predictor variables were engagement level scores and perceived impact on teaching. The criterion variable was student achievement scores. Two types of data were gathered in this study: (a) responses to the researcher-developed Beginning Teacher Induction Program Survey (BTIPS), which measured beginning teachers' engagement with induction program components and perceptions of impact on their teaching and (b) standardized achievement scores from students in the classes of respondents for the academic year 2010-2011. Beginning teachers responding to the survey were in their second year of teaching in North Carolina. Descriptive statistics determined access to and participation in induction components. An ANOVA and Tukey HSD were used to see how engagement level scores differed across components. Pearson *r* correlations determined the relationship between engagement level scores by component and student achievement. The following research questions were addressed in this study:

1. To what extent do high school teachers have access to and participate in North Carolina's beginning teacher induction program during their first two years of teaching?
2. How do second year high school teachers' engagement level scores differ across induction components?
3. What is the relationship between second year high school teachers' engagement with induction components and student achievement as measured by performance on state standardized tests?
4. What are second year high school teachers' perceived impacts of induction components on their teaching? Furthermore, how do these perceptions relate to student achievement in their classrooms?

Presented in this chapter is a description of the respondents, including demographics, data collection, and the analyses for each question.

Data Analysis

Respondents

The response frame represented teachers from 14 school systems across North Carolina. Demographic categories included ethnicity, entry into profession, total number of students taught each day, subject taught, level of education, and extra-curricular activities. Responding teachers' ethnicity (86.4%, N= 19, white; 13.4 %, N= 3, black/other) closely mirrored the ethnicity of the state (82.8%, N= 78,513 white; 17.2%, N=16,366, black/other) according to the North Carolina Public Schools Statistical Profile (NC SBE, 2011). Demographics are shown in Table 7.

Table 7

Demographic Information

Demographic	Characteristic	Frequency	Percentage
Entry into the Profession			
	Traditionally prepared	16	72.7%
	Lateral entry	6	27.3%
Total Number of Students Taught Each Day			
	30-45	4	18.2%
	46-60	5	22.7%
	61-75	6	27.3%
	76 or more	7	31.8%
Subject Taught			
	English	4	18.2%
	Mathematics	9	41.0%
	Science	5	22.7%
	Social Studies	4	18.2%
Level of Education			
	BS Ed/BS/BA	19	86.4%
	MA Ed/MAT/MS/MA	3	13.4%
Extra-Curricular Activities			
Coach a sport		11	50.0%
Sponsor student groups, clubs		10	45.5%
Serve on committees/chair dept.		13	59.0%
Activities prohibited participation in induction		3	13.6%

Note. N =22.

Data Collection

Beginning teachers could access the Beginning Teacher Induction Program Survey (BTIPS) from April 6 – June 1, 2011. Responding teachers had eight weeks to complete the survey due to an overlap with school system spring break vacations already scheduled during that time period. As with the pilot, a follow-up email was sent after the first week. An additional reminder was sent after week three to those who had not responded (Kittleson as cited by Sue & Ritter, 2007). Responding teachers were also offered incentives (four $50.00 Visa gift cards) to take the survey (Goritz, 2006). An additional attempt was made to increase the rate of response. A decision was made to mail letters to 75 non-respondents at their schools reminding them of the deadline and encouraging them to complete the survey. A $2 bill was enclosed and 11% (N=8) additional responses were posted following the mailing. Responses from the BTIPS were collected and entered into Minitab 16 for analysis. The analyses of data are organized by research question.

Research Question One

To what extent do high school teachers have access to and participate in North Carolina's beginning teacher induction program during their first two years of teaching?

Analyses of data for Research Question One are organized by component.

Orientation

Beginning teachers in North Carolina must participate in an orientation session as part of their district-level induction program (NC SBE, 2008). Eighty-six percent (N=19) of the responding teachers in this study were hired before the school year began and 91% (N=20) attended orientation. One teacher did not attend because orientation was

scheduled at a time when he/she could not attend and another teacher, hired after the school year began, reported that orientation was not held in his/her district. As a result, these two teachers did not respond to items regarding this component. Of the 20 teachers who attended orientation, 100% participated in at least two orientation sessions. Frequencies are displayed in Table 8.

Table 8

Frequency: Orientation

Element	Response	Frequency	Percent
NC SBE Strategic Priorities/Goals	Not Offered	4	20%
	Offered	16	60%
System goals, policies procedures/Standard Professional 2 license	Not Offered	1	5%
	Offered	19	95%
School goals, policies, procedures/ strategies for working with parents	Not Offered	3	15%
	Offered	17	85%
Available services/ training opportunities for teachers	Not Offered	3	15%
	Offered	17	85%
School system beginning teacher support program	Not Offered	1	5%
	Offered	19	95%
NC Professional Teaching Standards	Not Offered	3	15%
	Offered	17	85%
NC testing program	Not Offered	5	25%
	Offered	15	75%
NC teacher evaluation process	Not Offered	3	15%
	Offered	17	85%
Classroom management strategies/ appropriate use of student restraint	Not Offered	2	10%
	Offered	18	90%

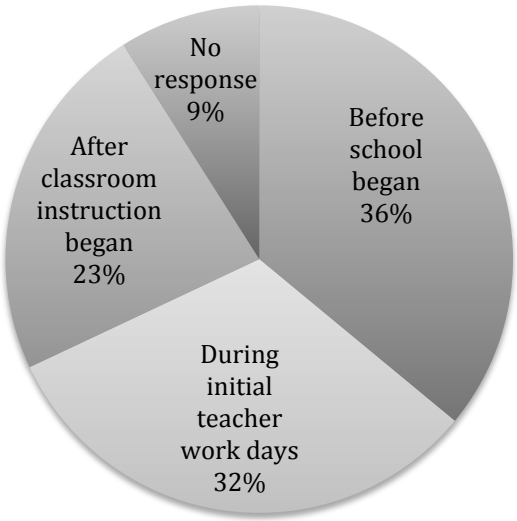
Note. N =20.

Mentor Support

The NC SBE recommended that induction programs assign a mentor to every first and second year teacher. Of the responding teachers, 86% (N=19) reported that they were assigned a mentor in their first year of teaching; 77% (N=17) reported having a mentor in year two; and 19% (N=4) did not have a mentor in either year. One teacher did not respond, but responded to the remaining items in this component. Nine percent (N=2) of teachers responded that they did not have a mentor in year one or year two and as a result did not complete those items. Data showing the timeframe mentors were assigned can be seen in Figure 2.

Figure 2

Timeframe Mentor Assigned



The NC SBE articulated optimum working conditions for beginning teachers to ensure that each beginning teacher is assigned a qualified mentor in his or her area of licensure and housed in the same building as their mentee whenever possible. Frequency

data regarding mentor/mentee match and proximity are shown in Table 9. Of the teachers responding, only 65% (N=13) of their mentors were teaching or had experience teaching the same subject in year one with the percentage dropping to 40% (N=8) in year two. Only 40% (N=8) of first year teachers were located in close proximity to their mentor with a slight increase to 53% (N=10) in year two.

Table 9

Frequency: Mentor-Mentee Match and Proximity

Element	Response	Year 1		Year 2	
		Frequency	Percentage	Frequency	Percentage
Taught same subject	No	8	40%	11	58%
	Yes	12	60%	8	42%
Taught same grade	No	7	35%	7	37%
	Yes	13	65%	12	63%
Located in the same school	No	6	30%	4	21%
	Yes	14	70%	15	79%
In close proximity (i.e., same wing or hallway)	No	12	60%	9	47%
	Yes	8	40%	10	53%

Note. N = 20 (Year 1). N =19 (Year 2).

When asked how often they met with their mentor to discuss their teaching, 30% (N=6) met only once each month. Seventy-nine percent (N=15) spent less than 30 minutes when meeting with their mentors.

Administrator Support

Administrators play an important role in establishing a professional and supportive culture for beginning teachers. In this survey, 32% (N=7) of responding

teachers reported that the principal provided some supportive communication and 27% (N=6) reported they provided a lot. When responding to the prompt regarding how supportive their administrator was of the induction program, only six teachers responded that their principal was very supportive of the program.

The following working conditions (established by the principal) were recommended by the SBE: (a) limited preparations; (b) limited non-instructional duties; (c) limited number of exceptional or difficult students; and (d) no extracurricular assignments unless requested in writing by the beginning teacher. However, in response to other items falling under working conditions, 82% (N=18) percent did not have joint planning time with their mentor or were not given opportunities to observe other teachers. Table 10 displays frequency of responses for administrator support.

Table 10

Frequency: Administrator Support

Element	Response	Frequency	Percentage
Limited number of preparations	No	12	55%
	Yes	10	45%
Limited number of exceptional/ difficult students	No	14	64%
	Yes	8	36%
Limited non-instructional duties	No	12	55%
	Yes	10	45%
Extracurricular assignments only at request	No	4	36%
	Yes	18	64%
Joint planning time with mentor	No	18	82%
	Yes	4	28%

Note. N = 22.

The NC Teacher Evaluation process requires that teachers in years one through three have at least three observations annually by a qualified school administrator or designee. Observations must be conducted for one continuous period of instruction (minimum 45 minutes) followed by a post-conference. The NC Professional Teaching Standards provide the framework for this process and are the basis on which the principal rates the performance of the teacher and prepares a summative evaluation. As seen in Table 11, data from the BTIPS suggest that administrators of the teachers responding to this survey follow the teacher evaluation process with 100% completing three observations. Nine teachers also responded to an optional open-ended question that their principal impacted their teaching by providing support for behavior management problems and working with parents.

Table 11

Frequency: Administrator Evaluation

Element	Response	Frequency	Percentage
Observe 3 times each year	No	0	0%
	Yes	22	100%
Observed for at least 45 minutes	No	6	27%
	Yes	16	73%
Follow with post conference	No	2	9%
	Yes	20	91%

Note. N = 22.

Sixty-four (N=14) percent of teachers reported that administrators did not assist them in the development of their professional development plan (PDP), 27% (N=6) did not revisit the plan at the middle of the year, and 27% (N=6) did not use those goals to

guide their observations. However, 82% (N=18) of responding teachers reported that administrators used PDP goals to guide their final evaluation. Table 12 displays these data:

Table 12

Frequency: Administrator and Professional Development Plan (PDP) Goals

Element	Response	Frequency	Percentage
Helped develop PDP goals	No	14	64%
	Yes	8	36%
Used PDP to guide observations	No	6	27%
	Yes	16	73%
Revisited PDP goals at mid-year	No	6	27%
	Yes	16	73%
Used PDP goals to guide final evaluation	No	4	82%
	Yes	18	18%

Note. N = 22.

Professional Development

According to the North Carolina Teaching Working Conditions Survey of 2008, beginning teachers, as opposed to career teachers, were more likely to report needing professional development. These novices had more requests for professional development in the areas of behavior management, teaching strategies, and student assessment (New Teacher Center, 2008). The NC induction program will "provide for a formal means of identifying and delivering system-wide and school-level services and technical assistance (i.e., Professional Development) needed by beginning teachers" (New Teacher Center, 2008, p. 2). The results were somewhat mixed as displayed in Table 13.

Table 13

Frequency: Professional Development

Element	Response	Frequency	Percentage
Subject matter	No	12	55%
	Yes	10	45%
Instructional technology	No	4	36%
	Yes	18	64%
Differentiating instruction for students with special needs	No	6	27%
	Yes	16	73%
Student assessment	No	10	45%
	Yes	12	55%
Preparing students for standardized testing	No	12	55%
	Yes	10	45%
Student motivation/ engagement	No	6	27%
	Yes	16	73%
Discipline/behavior management	No	6	27%
	Yes	16	73%
Strengthening parent communication	No	14	64%
	Yes	8	36%

Note. N = 22.

The types of professional development most often offered were: (a) workshops/seminars (91%, N=20), (b) book studies (82%, N=18), (c) symposia or conferences (64%, N=14), and (d) virtual support (59%, N=13). Respondents reported that they participated in professional development opportunities identified as topics needed by beginning teachers. Responding teachers indicated they attended professional development that focused on instructional technology (82%, N=18), differentiated

instruction (73%, N=16), and student motivation and behavior management (73%, N=16). However, 64% (N=14) did not have an opportunity to participate in professional development that would strengthen communication with parents.

Regarding how frequently teachers attended professional development activities, 86% (N=19) teachers attended workshops occasionally and 32% (N=7) participated in teacher study groups occasionally/frequently. However, 50% (N=11) responded that they had observed the teaching of other teachers, but only 36% (N=4) had an opportunity to observe other teachers in the administrative items. Other professional development opportunities responding teachers experienced frequently:

- 5% (N=1) received coaching from other teachers
- 23% (N=5) examined student data with other teachers
- 18% (N=4) developed assessments or lesson plans collaboratively with other teachers

Teachers responding to the survey were also asked to report items addressing elements of professional development activities. Table 14 displays these data.

Table 14

Elements of Professional Development

Element	Response	Frequency	Percentage
Designed to support Professional Development Plan goals	No	9	41%
	Yes	13	59%
Organized as a Professional Learning Community	No	6	27%
	Yes	16	73%
Based on learning from prior PD activities	No	17	77%
	Yes	5	23%
Followed up with related activities	No	7	23%
	Yes	15	77%

Note. N = 22.

Research Question Two

How do second year high school teachers' engagement level scores differ across induction components?

Engagement scores were first ordered from highest to lowest and divided into high, medium, and low engagement groups using the median and quartiles. Table 15 displays high, medium, and low engagement scores by component.

Table 15

Mean and Level of Engagement Scores by Component

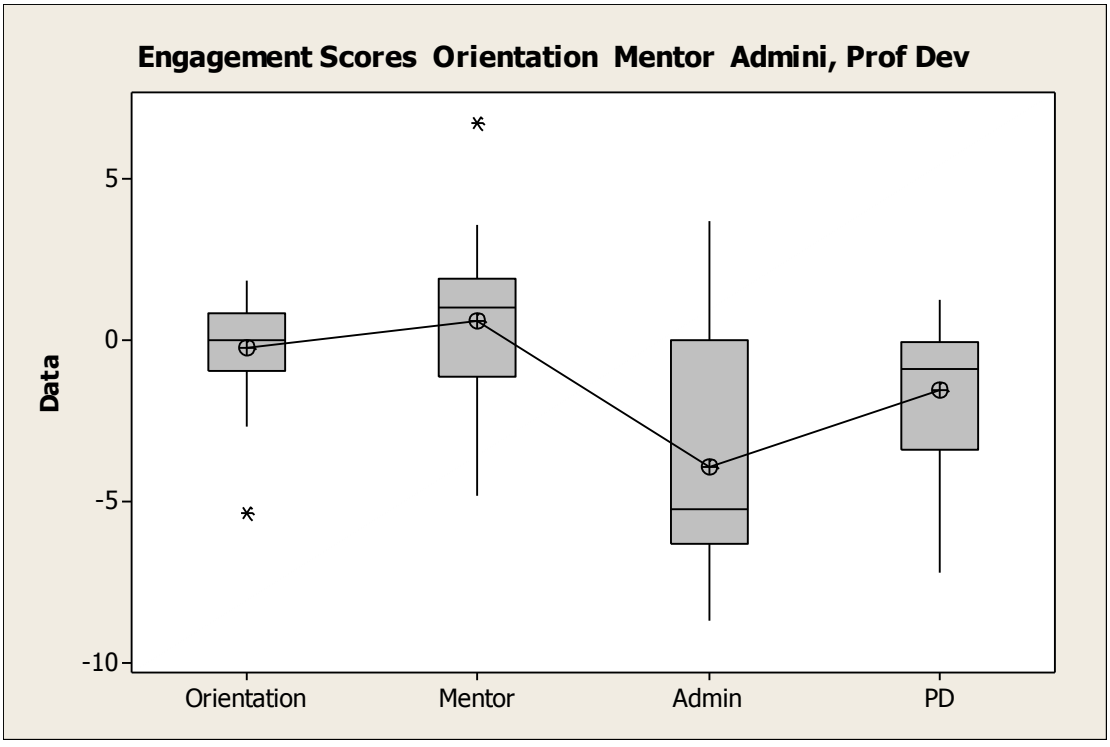
Level of Engagement	Orientation[a]	Mentor Support[a]	Administrator Support[b]	Professional Development[b]
High Engaged Quartile 4	1.83	6.77	3.73	1.27
	1.55	3.56		0.41
	1.27	3.28		
	0.96	2.05		
		1.81		
Medium Engaged	0.67	1.56	0.02	-0.05
	0.67	1.31	0.02	-0.05
	0.67	1.31	0.02	-0.05
	0.35	1.04	0.02	-0.05
	0.02	1.04	0.02	-0.05
	0.02	**0.78**	0.02	-0.07
	0.02	0.78	-1.92	-0.50
	-0.32	-0.04	-3.74	-0.50
	-0.96	-0.31	-4.14	-0.91
	-0.96	-1.96	-4.14	**-0.91**
	-0.96		**-5.24**	-1.63
	-1.27		-5.63	-1.96
	-1.57		-6.07	-1.96
			-6.07	-2.27
			-6.07	-3.21
			-6.61	
Low Engaged Quartile 1	-2.7	-2.68	-8.72	-2.27
	-3.0	-3.22	-8.72	-3.21
	-5.36	-3.88	-8.72	-3.56
		-3.88	-8.72	-3.56
		-4.85	-8.72	-3.95
				-7.20
Mean Scores	-0.45	0.22	-4.06	-1.73

Note. Median scores are in bold.
[a] N = 20. [b] N = 22.

An ANOVA was used next to determine if second year high school teachers' engagement scores differed across induction components. The analysis was F (3, 67) = 8.69 with a *p*-value of 0.00, indicating that at least one of the component means was different from the others. A Tukey HSD was used post hoc to determine which components were significantly different from the others. Figure 3 displays a boxplot showing that administrator support was the only component that was significantly different from the others. Results show that responding teachers were less engaged with administrative support.

Figure 3

Mean Engagement Scores by Component



Research Question Three

What is the relationship between second year high school teachers' engagement level scores with induction components on student learning as measured by performance on state standardized tests?

End of Course raw test scores determined student achievement and were provided by a representative of NC DPI. End of Course testing is part of the North Carolina statutory growth and performance accountability requirements of the *No Child Left Behind Act* (NCLB). Only courses included in the accountability program are required to administer a statewide-standardized test (Algebra I, Algebra II, Biology, Civics/Economics, English I, Geometry, Physical Science, United States History). Test data were collected for the 2010-2011 school year and did not include student names or any other identifying information. For this study, student achievement scores for each teacher were averaged due to the varying number of students a teacher might have in his/her class, with the number of students per teacher ranging from 15-231. In effect, averaging scores levels the playing field. In addition, teachers do not have any control over the number of students in their classes or on the number of EOC tested courses they teach. Even though the mean is often the best measure of central tendency for this analysis, the mean does have limitations, as it does not account for extremely high or low scores. Mean scores for student achievement and engagement are seen in Table 16.

Table 16

Mean Achievement and Engagement Scores

Responding Teacher	Achievement scores	Engagement Level
T1	150.2	0.108
T2	163.8	-1.105
T3	150.2	0.24
T4	150.7	-1.878
T5	153.9	-2.11
T6	155.4	-2.455
T7	153.2	-2.283
T8	163.1	-1.318
T9	142.9	1.573
T10	151.5	-3.278
T11	153.9	-1.043
T12	167.7	-3.223
T13	158.3	1.68
T14	149.7	-1.717
T15	156.6	-1.583
T16	153.5	0.458
T17	163.5	-0.845
T18	155.2	0.15
T19	149.9	0.503
T20	145.4	-4.025
T21	157.9	-6.38
T22	141.4	-5.623

Note. N = 22.

A Pearson's *r* correlation coefficient was used to examine the relationship between engagement scores in each component as well as overall, and the average student achievement scores. If statistically significant coefficients were found, second-year teachers with high engagement level scores would be expected to correlate positively with high student achievement scores in each induction component. No correlation was found in any component at the *a*-level of .05. Table 17 displays the correlation coefficient.

Table 17

Correlation Coefficient: Achievement Scores

Component	Pearson *r*	P-value
Orientation	-0.226	0.337
Mentor Support	0.029	0.903
Administrator Support	-0.014	0.951
Professional Development	-0.082	0.717

A multiple regression was used to determine if engagement scores for each component would significantly contribute to predicting student achievement. The analysis determined that perceived impact was not significant at the alpha level .05 [F (8, 16) = .047. P = .85]. Together the predictors accounted for 32.1% of the variance (R^2). Table 18 provides the unstandardized b weights, standard error (SE) and *t* statistics for each predictor in the multiple regression analysis.

Table 18

Multiple Regression Analysis: Predicting Student Achievement

Predictor	B	SE	T	P
(Constant)	111.16	32.53	3.42	0.009
Orientation	0.860	2.120	0.41	0.696
Mentor Support	-1.901	2.089	-0.91	0.389
Administrator Support	-2.453	1.894	-1.30	0.231
Professional Development	-0.026	1.406	-0.02	0.986

Research Question Four

What are the perceived impacts of second year high school teachers' induction components on their teaching? Furthermore, how do these perceptions relate to student achievement in their classrooms?

Because of the low response rate, Chi square could not be used to analyze the distribution in rating. Table 19 displays the frequency and percent of teachers' perceived impact of induction components on their teaching. The greatest percentage of teachers responded that mentor support had great impact (70%, N=14) on their teaching and the lowest selected administrative support (45% (N=10). Combining *moderate impact* and *great impact* provided another view of these data. A comparison of all components selecting moderate and great impact follows:

- Orientation – 50% (N=11)
- Mentor Support – 70% (N=14)
- Administrative Support – 45% (N=10)

- Professional Development – 55% (N=11)

Table 19

Frequency: Perceived Impact

Component		Frequency	Percent
Orientation[a]	No Impact	1	5
	Minimal Impact	8	40
	Moderate Impact	11	55
	Great Impact	0	
Mentor Support[a]	No Impact	1	5
	Minimal Impact	5	25
	Moderate Impact	8	40
	Great Impact	6	30
Administrator support[b]	No Impact	5	23
	Minimal Impact	7	32
	Moderate Impact	8	36
	Great Impact	2	9
Professional Development[b]	No Impact	1	5
	Minimal Impact	9	40
	Moderate Impact	11	50
	Great Impact	1	5

Note. [a] N = 20. [b] N = 22.

A Pearson *r* correlation between perceived impact and achievement scores was not significant at the *a*-level of .05 (-0.145, P-value = -0.578). Linear regression analysis was used to determine if perceived impact would significantly contribute to predicting student achievement with no significance found (P=0.578).

Summary

Analysis of the data collected from the Beginning Teacher Induction Program Survey and from student achievement scores provided findings for the research questions.

From the data it was determined that overall teachers' access to and participation in induction program components varied. An ANOVA and Tukey HSD found that responding teachers were significantly low engaged in administrator support. Using the Rasch rating scale, it was determined that mentor support was the component in which most responding teachers were high engaged; responding teachers were low engaged with administrator support. Pearson *r* correlation revealed no relationship between engagement scores and student achievement; multiple regression analysis did not provide evidence of predictability. Linear regression was used to determine if perceived impact on teaching predicted student achievement, but the analysis did not provide evidence of predictability.

Chapter Five includes a discussion of the findings and limitations of the study. Also presented are implications for practice and recommendations for further research.

CHAPTER FIVE: FINDINGS, RECOMMENDATIONS, AND CONCLUSION

The rationale for this study emerged from a review of the literature regarding new teacher induction. In response to the review and the recommendations of prominent researchers working in the field of teacher induction (i.e., Ingersoll & Strong, 2011), components of second year high school teachers' district sponsored induction programs were examined. The study aimed at providing a snapshot of induction across North Carolina and focused on access and participation, engagement with components, and engagement and perceptions of impact as related to student achievement. Chapter five highlights important findings of this research that can inform policy surrounding new teacher induction. Recommendations for research will explore areas for future study.

Purpose of the Study

The purpose of this study was to examine induction programs in North Carolina to determine if new teachers received the support recommended by the State Board of Education and if their engagement in support services provided was related to student achievement. Research questions were developed to gather data relative to the components of induction in North Carolina public schools during the 2010-2011 school year (SBE, 2008).

The rationale emerged from the literature on beginning teacher induction programs and student achievement. A review revealed that beginning teachers face the challenges of "doing two jobs at once: being a teacher and learning to teach" (Moir, 2003, p. 2) in addition to ensuring that students are learning in their classes. Induction programs were developed to address the needs of new teachers. Most induction research has focused on retention and examined the total induction program, not individual

components of induction. Since the *No Child Left Behind Act* of 2001, demand for evidence linking induction to student achievement has grown. Although research supports the relationship between induction programs and retention, there have been few studies that connect engagement and student achievement. The research questions guiding this study were:

5. To what extent do high school teachers have access to and participate in North Carolina's beginning teacher induction program during their first two years of teaching?
6. How do second year high school teachers' engagement level scores differ across induction components?
7. What is the relationship between second year teachers' engagement level scores with induction components and the learning of students as measured by performance on state standardized tests?
8. What are the perceived impacts of second year high school teachers' induction components on their teaching? Furthermore, how do these perceptions relate to student achievement in their classrooms?

Summary of Findings

Sixty-two school NC public school systems were contacted and 21 (34%) central office personnel granted permission to survey their second year teachers. An invitation to participate was sent to 173 teachers. Responses were received from teachers in 14 systems (67%). Twenty-two second year teachers participated in the study by completing the online *Beginning Teacher Induction Program Survey* (BTIPS), developed by the researcher. Findings should be reviewed carefully as they are based on a small sample

size. Another consideration is that 50% (N=11) of the respondents were from the western region of the state, 36% (N=8) from the southwest region, 9% (N=2) participants were from the coastal region and 5% (N=1) from the central region. The largest populated area in NC is in the central portion of the state, the area with the least representation. Responses might be viewed as homogeneous as it is unknown if they accurately represent the population of new teachers in the state.

Data from the BTIS revealed beginning teachers' access to and participation in induction program components varied. Responding teachers were not significantly engaged with administrator support and most teachers were highly engaged with the support provided by mentors. No relationship was found between engagement scores and student achievement and perceived impact on teaching and student achievement. It is possible that the overall lack of mentor support for teachers in this study contributed to this finding. There was no evidence that engagement scores significantly predicted student achievement. It is interesting that while teachers perceived mentor support impacted their teaching, there was no evidence that they believed perceived impact predicted student achievement.

Research Question One examined beginning teachers' access to and participation in induction program components and findings were mixed. Components were orientation, mentor support, administrator support, and professional development. Orientation has been attributed to providing new teachers with a better understanding of their school and classroom (Stansbury & Zimmerman, 2000) and responding teachers in this study reported that the sessions they attended addressed schools and school system policies and classroom management. They received information about opportunities for

training as well as an overview of the new teacher support program, testing program, and evaluation process. Ninety percent (N=20) of respondents attended orientation but one could not attend at the time orientation was offered. Although State Board policy requires districts to offer orientation to every new teacher regardless of their hire date (SBE, 2008), one teacher hired after the school year began reported that orientation was not held in his/her system.

Unfortunately this study replicates many findings that report beginning teachers are often not assigned mentors, their classrooms are not located in close proximity, or they are matched with mentors who teach in different grades or subjects (Cohen, 2005; Huling & Resta, 2007; Wayne, Youngs, & Fleischman, 2005). Establishing a professional culture that fosters the work of the mentor is considered to be the responsibility of administrators as they support new teachers in their schools (Kardos et al., 2001). Counter to this practice, responding teachers reported that they met infrequently with their mentors and when they did meet 75% (N=15) spent less than 30 minutes with them (Rockoff, 2008). In addition the majority of responding teachers in this study did not have joint planning time with their mentor or opportunities to observe other teachers. However, it is important to note that a little more than half (64%, N=18) of study participants did report that they were assigned limited preparations and non-instructional duties (SBE, 2008).

As suggested in the literature, administrator involvement is critical to the development of new teachers (Coffey, 2008) and guiding them through the evaluation process is part of that development. New teachers in this study reported they were: (a) observed three times each year (100%), (b) the observation was for one continuous period

of instruction (73%, N=16), and (c) a post conference followed the observation (91%, N=20). However, administrators were not involved with the development of new teachers' professional development goals.

Consistent with the literature, professional development topics focusing on the needs of beginning teachers were offered to respondents in a variety of formats: workshops, conferences, book studies, or virtual support (Schaffer, Stringfield, & Wake, 1992; Wang & Odell, 2002). Many professional development activities were organized as Professional Learning Communities (77%, N=17). Teachers in this study participated in sessions that focused on instructional technology, differentiating instruction, and discipline/behavior management. Fewer teachers participated in subject matter, student assessment, and preparing students for standardized testing. Although the length is unknown, most respondents reported that related activities were extended over time, a characteristic of effective professional development (Timperley, Wilson, Barrar, and Fung, 2007).

Research question two centered on how second year high school teachers' engagement level scores differed across induction components. The Rasch rating scale model was used to calculate engagement scores for participants who were divided into three groups - teachers who were high engaged, medium engaged and low engaged, as determined by using the median and quartiles. Respondents were most engaged with mentors, but only one teacher reported he/she was high engaged with the support provided by the administrator. Further analysis confirmed this finding – administrator support was identified as the only component in which new teachers were significantly low engaged. Because orientation was offered at the beginning of their first year of

teaching and responding teachers were in their second year, it is interesting that more (20%, N=4) reported that they were high engaged with the orientation component than professional development (9%, N=2) or administrative support (5%, N=1).

The relationship between participants' engagement with induction components and student achievement was examined in research question three. Research question four focused on responding teachers' perceived impact of induction components on their teaching and how those perceptions related to student achievement Analyses for both questions did not result in a significant correlation between engagement and student achievement or perceived impact on student achievement. In addition engagement and perceived impact did not provide evidence of predictability.

Discussion of Findings

The findings from this study concur with Kirkpatrick (2007) who posits that teachers who have not had opportunities to connect with their colleagues or experience support from their administrators may not be engaged. Many responding teachers did not receive the full benefit of district sponsored induction programs as intended by the NC State Board of Education, indicating uneven interpretation of board policy by districts. Data revealed that even though it has been more than four decades since the earliest induction programs appeared (Cohen, 2005), some beginning teachers were not assigned mentors, had mentors out of field, did not have time during the day to plan or observe other teachers, and did not meet often with their mentors.

Administrator support was the one component in which responding teachers reported that they were significantly low engaged. Engagement with administrator support was identified in this study by teachers' responses to items asking if their

knowledge and teaching practices were not enhanced, enhanced, or greatly enhanced as a result of the support their administrators provided. In retrospect, these items may not have been the best measure of engagement with administrators. Much of administrator support for new teachers is exhibited through the professional culture they establish in their schools and may not be visible to teachers new to the profession (Kardos et al., 2001). Perhaps items that addressed their role would have provided information needed for responding teachers to more accurately determine their engagement. For example, administrators assigned (or were responsible for ensuring they were assigned) mentors and students (difficult or exceptional) to beginning teachers; assigned classrooms; scheduled classes (EOC tested courses or not), planning periods, and non-instructional duties; observed and evaluated new teachers (but only 37%, N=7, engaged in conversations with new teachers outside of the evaluation process). At the same time, they assigned students to mentors' classrooms and scheduled their classes, planning periods, and non-instructional duties. Carver and Feiman-Nemser (2009) write, "even the best mentor cannot compensate for an inappropriate teaching assignment or a professional culture that discourages collaboration and critical colleagueship" (p. 317).

Another reason teachers responded as they did may be in regard to the economic downfall. As early as 1997, the National Commission on Teaching and America's Future (NCTAF) reported that resources for new teacher induction programs are often targets for elimination during times of economic crisis. These decisions have adverse effects for school systems committed to retaining their beginning teachers. The funding for the North Carolina induction program changed when respondents began teaching. Due to the economic hardships within the state, funds typically set aside for mentoring beginning

teachers were eliminated. As a result, many districts did not offer services for first or second year teachers. Each system was allowed to decide how or if the funds would be replaced. According to the State Board of Education, "LEAs (Local Education Authority) could use federal Title II funds, low wealth and small county funds, Disadvantaged Student Supplemental Funds (DSSF) (if part of the LEA DSSF plan), and other appropriate funding sources to employ mentors" (NC SBE, 2010, p. 4). The level of financial support provided to the teachers responding to this study is not known.

Implications

There are implications for legislators, policy makers, researchers and educators regarding the findings from this study. Five implications for practice follow.

Legislators should reconsider budget cuts made during the time of this study that in effect, turned beginning teacher support in NC into an unfunded mandate. Induction experiences varied greatly for the second year teachers in this study. Budget cuts, including the elimination of mentoring funds, more than likely impacted decisions made by beginning teacher coordinators and administrators regarding program offerings that may have resulted in:

- Large class sizes (31%, N=7, taught more than 75 students per day)
- Orientation not offered for those hired after the school year began (1 teacher)
- Beginning teachers without mentors (2 teachers)
- Mentors supporting more than one novice teacher limiting time to spend with each (79%, N=15, spent less than 30 minutes meeting with mentors)
- Smaller staff and budget, limiting opportunities to:
    - Schedule joint planning time for new teachers and mentors - 82% (N=18)

did not have joint planning with mentor

- Limit number of preparations (55%, N=12)
- Limit non-instructional duties (55%, N=12)
- Observe other teachers due to limited funds to pay for substitute teachers (82%, N=18)
- Follow-up professional development with related activities (23%, N=7)

Findings from this study reported limited opportunities for some responding teachers. However, the quality of support they received from mentors may be suspect based on the findings in this study. Some responding teachers indicated that they received support in planning and pacing (85%), using multiple instructional strategies (80%), teaching students with varying levels of ability (75%), and managing student behavior (85%). However, only thirty percent (N=6) reported that they perceived their mentors greatly impacting their teaching. Merely offering support is not enough. Mentoring that provides new teacher with the knowledge and skills leading to improved instructional practice is critical (Serpell & Bozemann, 1999). At the time of this study, all mentors in NC completed a 24-hour training program prior to mentoring (SBE, 2008). If mentors are expected to move their novices forward in their teaching, perhaps ongoing professional development and opportunities to network with other mentors is needed (Moir, 2007). Development of mentor support programs in several formats (on site, virtual, blended) should be examined

The only induction program accountability levers in place at the time of this study were reports submitted along with periodic school system Title II audits. Just 6% of responding teachers reported that their administrator communicated support for the

school system induction program. Building induction programs from within could provide internal accountability and address the lack of support by administrators. Administrators, mentors, beginning teachers, and central office personnel could revisit the state induction program requirements. A plan developed collaboratively to address implementation challenges encountered at the system and school level might lead to buy-in from all stakeholders as well as funds and/or personnel redirected to the induction program.

In this study, one responding teacher did not have an opportunity to participate in orientation because he/she was hired after the school year began and the system did not offer that component of induction. Putting together another orientation program later in the year for one or two new hires can be problematic for school systems, especially small ones who are financially strapped with limited central office personnel. Establishing external networks support the work of Smith and Ingersoll (2004) who found that new teachers were less likely to leave teaching if they participated in group induction activities such as online networks. Developing a regional or statewide online orientation should be examined.

The Tukey HSD analysis clearly indicated that responding teachers were significantly low engaged with the support provided by school administrators. Even though teachers reported that 100% of administrators fulfilled state-mandated requirements regarding the evaluation process, only 64% reported that they received assistance developing the professional development goals upon which those evaluations were based. A smaller percentage reported that administrators did not use professional development goals to guide observations, did not revisit goals at mid-year, or did not use

goals to guide their final evaluation. This was a missed opportunity for these administrators to address instructional concerns or celebrations with new teachers in their schools (Youngs, 2007). Professional development programs for administrators can serve to develop skills and help them understand that consistent support is key to successful induction programs and should be explored (Bartell, 2005; Breaux & Wong, 2003; Smith & Ingersoll, 2004). If educational policy makers are committed to ensuring new teacher success and improving student achievement, they need to create thoughtful induction policy targeting the ongoing development and learning of administrators.

Limitations

Despite the implications of this study, as with all research, there are limitations. Sampling bias could affect the accuracy of survey findings. Systems participating in the study were those who granted permission for their teachers to be surveyed and did not necessarily represent various regions of the state, rural or urban, or ethnically diverse. Participation was limited to the beginning teachers who volunteered. They may have responded because they were pleased with or dissatisfied with their induction program. There were also a number of respondents (46%) teaching within the service area of the university who participated in the study. Recognition of the researcher or university could have affected their responses. In addition, the number of teachers in this study was small limiting the power of analyses.

As mentioned in Chapter 4, the timing of the survey presented several challenges. The survey administration occurred at the same time beginning teachers were on spring break or administering high stakes standardized tests, an especially stressful time. Inclement weather during the winter months also resulted in an overlap between the

administration of the testing window and the dates the survey was available as districts revised their schedules to make up missed days.

School system policies regarding surveys from external sources also presented a challenge. Nine districts did not allow universities to directly survey their teachers. Instead coordinators forwarded the survey link to their teachers. It is unknown if coordinators sent out reminders to their teachers. In addition, because the study was researcher-initiated (as opposed to school district-initiated) a lower commitment to the research might have influenced school system administrators to encourage (or not encourage) their teachers to participate.

The BTIPS instrument is the focus of another limitation. Perceived impact of teaching was evaluated with only one question. Additional items should be added to more accurately determine perceptions of impact. In retrospect, the administrator items may not have accurately measured the engagement of responding teachers regarding the support provided by administrators.

Recommendations

Replication of this study is recommended due to major changes in North Carolina's induction program effective fall 2011. Seeking input from personnel who have responsibility for beginning teacher induction programs would ensure survey items accurately represent induction practice. It is also recommended that data is gathered in late March or early April, avoiding activities which occur at the end of the year such as reviewing course content, administrating state tests, compiling final reports, collecting book,; and packing up the classroom for the summer. Conversations with testing

coordinators at the state and local level are needed to determine ways achievement score data can be shared so middle school and elementary teachers can be included.

Further research regarding new teacher retention is needed. According to Smith and Ingersoll (2004), lower turnover rates were strongly linked to induction programs that included seminars for new teachers (i.e., professional development) and recurring conversations with administrators in addition to mentoring. While engagement scores and perceived impact on teaching were not found to be predictors of student achievement, these constructs might prove to be indicators of retention in the profession.

Measures in this study are based on teacher reported data from one point in time. Including data gathered from multiple points in time during the school year would strengthen research related to this topic. It is possible that teachers are more engaged with certain components at different times of the year. For example, first year teachers might be most engaged with their mentors the first nine weeks of the school year as they set up their classrooms and begin the school year. Qualitative observations could also be included in the research design to improve the understandings of quantitative data**.** Classroom observations would be used to document changes in classroom instruction that might occur as a result of program participation.

It is recommended that revisions be made to the administrator component of the BTIPS. As stated in limitations, this construct may not have been accurately measured using existing questions on the BTIPS instrument. Items that more accurately show administrator support need to be added. For example, did administrators structure new teachers' schedules so that they had joint planning time with their mentor, limited number of preparations, limited number of exceptional or difficult students, and opportunities to

observe other teachers? In addition, instead of asking if their knowledge was enhanced as a result of administrator support, responding teachers would be asked how administrator support enhanced their understanding of professional responsibilities. This change in terminology might be a better descriptor of the role administrators' play in the support of new teachers (i.e., the extent administrator support enhanced new teachers' understanding of professional responsibilities in working constructively with parents to enhance student learning, establishing and articulating student learning goals, or implementing an effective classroom management plan).

Conclusion

Although this study did not find a significant relationship between beginning teachers' engagement with induction components, it did raise concerns that legislative cuts to the mentoring program may have contributed to uneven support revealed in the responses of teachers. Further, reduced funds could have impacted the decisions administrators made in regards to the selection and assignment of mentors

According to Ellen Moir (2007), "a quality induction system can sustain and nourish that initial enthusiasm the new teacher brings on his or her first day. It can also serve to reinvigorate veteran teachers, foster development of teacher leaders, improve student achievement, and impact the ongoing approach to continuous improvement within the entire school" (p.58). However, without the financial resources needed to support current induction policy, implementation of quality programs that are rigorous, comprehensive, and engaging will not become a reality.

REFERENCES

Alliance for Excellent Education. (2004). *Tapping the potential: Retaining and developing high-quality new teachers.* Retrieved from http://www.all4ed.org/publications/TappingThePotential/index.html

American Federation of Teachers. (2001). *Beginning teacher induction: The essential bridge.* Retrieved from www.aft.org/pdfs/teachers/pb_teacherinduction0901.pdf

Anderson, L., & Olsen, B. (2006). Investigating early career urban teachers' perspectives on and experiences in professional development. *Journal of Teacher Education, 57*(4), p. 359-377. doi: 10.1177/0022487106291565

Andrich, D. (1978). A rating formulation for ordered response categories. *Psychometrika*, *43*, 561-573. doi: 10.1007/BF02293814

Andrews, S., Gilbert, L., & Martin, E. (2007). The first years of teaching: Disparities in perceptions of support. *Action in Teacher Research, 28*(4), 4-13.

Arends, R. I., & Regazio-DiGilio, A. J. (2000). *Beginning teacher induction: Research and examples of contemporary practice.* A paper presented at the Japan-United States Teacher Education Consortium. Retrieved from ERIC database. (ED450074)

Bartell, C. (1995). Shaping teacher induction policy in California. *Teacher Education Quarterly, 22*(4). Retrieved from http://www.teqjournal.org/backvols/1995/22_4/volume_22,_number_4.htm

Berry, B., Daughtrey A., & Wieder, A. (2010). *A better system: Developing, supporting, and retaining effective teachers*. Center for Teaching Quality. Retrieved from http://effectiveteachers.org/research/

Black, L., Neel, J., & Benson, G. (2008). *NCTAF/GSU Induction Project: Final Report.* National Commission on Teaching and America's Future. Retrieved from http://www.nctaf.org/resources/research_and_reports/nctaf_research_reports/index.htm

Blackburn, J. (1977, April). *The first-year teacher: Perceived needs, intervention strategies and results.* Paper presented at the annual meeting of the American Educational Research Association, New York. Retrieved from ERIC database. (ED135768)

Bond, T., & Fox, C. (2008). *Applying the Rasch model: Fundamental measurement in the human sciences,* (2nd ed.). LEA: Kindle Edition.

Breaux A., & Wong. H. (2003). *New teacher induction: How to train, support and retain good teachers*. Mountain View, C A; Harry K.Wong Publications. Inc.

Brown, N., Morehead, P., & Smith, J. B. (2008). But I love children: Changing elementary teacher candidates' conceptions of the qualities of effective teachers. *Teacher Education Quarterly, 35*(1), 169.

Burch, P., & Spillane, J. P. (2003). Elementary school leadership strategies and subject matter: Reforming mathematics and literacy instruction. *Elementary School Journal*, *103*, 519-535.

Bush, R.N. (1984). *Effective staff development. In Making our schools more effective: Proceedings of three state conferences*. San Francisco: Far West Laboratory.

Carver, L. C., & Feiman-Nemser, S. (2009). Using policy to improve teacher induction: Critical elements and missing pieces. *Educational Policy, 23*(2), 295-328. doi: 10.1177/0895904807310036

Clotfelter, C. T., Ladd, H. F., & Vigdor, J. L. (2007). *How and why do teacher credentials matter for student achievement.* NBER Working Paper Series Vol. w12828. Retrieved from SSRN: http://ssrn.com/abstract=956867

Coffey, B. (2008). *No teacher left behind: An examination of beginning teachers' preconceptions and attitudes about induction.* Publisher: University of Southern California Libraries. Retrieved from http://digitallibrary.usc.edu/assetserver/controller/view/etd-Coffey-20080721

Cohen, B. (2005). *Enhancing the 'learning profession': Improving new teacher retention with teacher induction.* (Unpublished doctoral dissertation). University of Maryland, College Park. Retrieved from http://hdl.handle.net/1903/2335

Cohen, D., & Hill, H. (2001). *Learning policy.* New Haven, CT: Yale University Press.

Corbell, K. (2008). *Evaluating the Perceptions of Success Inventory for Beginning Teachers and its connection to teacher retention.* (Doctoral dissertation). North Carolina State University, Raleigh. Retrieved from http://www.lib.ncsu.edu/theses/available/etd-02262008-102151

Creswell, J. (2009). *Research design: Qualitative, quantitative, and mixed methods approaches* (3rd ed.). Sage Publications, Inc.: Kindle Edition.

Creswell, J. (2008). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research* (3rd ed.). Upper Saddle River, NJ: Pearson Education, Inc.

Darling-Hammond, L. (1997). *Doing what matters most: Investing in quality teaching.* New York: National Commission on Teaching and America's Future. Retrieved from

http://www.nctaf.org/resources/research_and_reports/nctaf_research_reports/index.htm

Darling-Hammond, L., Wei, R., Andree, A., Richardson, N., & Orphanos, S. (2009). *Professional learning in the learning profession: A status report on teacher development in the United States and abroad.* Stanford University: National Staff Development Council and the School Redesign Network. Retrieved from http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.169.6008&rep=rep1&type=pdf

Dollase, R.H. (1992). *Voices of beginning teachers: Visions and realities.* New York: Teachers College Press.

Eberhard, J., Reinhardt-Mondragon, P., & Stottlemyer, B. (2000). *Strategies for new teacher retention: Creating a climate of authentic professional development for teachers with three or less years of experience*. (Research report). Texas A&M University, Corpus-Christi. Retrieved from ERIC database. (ED450116)

Evans, J., & Mathur, A. (2006). The value of online surveys. *Internet Research, 15*(2), 195–219. doi: 10.1108/10662240510590360

Evertson, C. M., & Smithey, M. W. (2000). Mentoring effects on protégés' classroom practice: An experimental field study. *The Journal of Educational Research, 93*(5), 294-304.

Feiman-Nemser, S. (2001). From preparation to practice: Designing a continuum to strengthen and sustain practice. *Teachers College Record, 103*(6), 1013-1055.

Feiman-Nemser, S. (2010). Multiple meanings of new teacher induction. In J. Wang, S. Odell, & R. Clift (Eds.), *Past, present, and future research on teacher induction:*

An anthology for researchers, policy makers, and practitioners, Lanham, MD: Rowman & Littlefield and Association of Teacher Educators.

Feiman-Nemser, S., & Parker, M. (1992). *Los Angeles mentors: Local guides of educational companions?* East Lansing, MI. National Center for Research on Teacher Learning. Michigan State University. Retrieved from http://scholar.google.com/scholar?q=Los+Angeles+mentors%3A+Local+guides+of+educational+companions%3F+&hl=en&btnG=Search&as_sdt=40000000001&as_sdtp=on

Feiman-Nemser, S., Schwille, S., Carver, C., & Yusko, B. (1999). *A conceptual analysis of literature on beginning teacher induction*. Washington, DC: U.S. Department of Education.

Fletcher, S., Strong, M., & Villar, A. (2008). An investigation of the effects of variations in mentor-based induction on the performance of students in California. *Teachers College Record,* 110(10), 2271-2289.

Fletcher, S., & Strong, M. (2009). Full-release and site-based mentoring of new elementary grade teachers: An analysis of changes in student achievement. *The New Educator,* 5(4), 329-341. Retrieved from http://www1.ccny.cuny.edu/prospective/education/theneweducator/volume5_4.cfm

Fowler, F. (2009). *Survey research methods* (4th ed). Thousand Oaks, CA: SAGE Publications.

Furlong, J. (1997). Mentoring and developing practice in primary schools: Supporting student teacher learning in school. *Journal of Education for Teaching, 23*(1), 99-

101. Retrieved from Academic Search Premier database

Furtwengler, C. (1995). Beginning teachers programs: Analysis of state actions during the reform era. *Educational Policy Analysis Archives*, *3*(3). Retrieved http://epaa.asu.edu/epaa/v3n3.html

Gareis, C. R., & Nussbaum-Beach, S. (2008). Electronically mentoring to develop accomplished professional teachers. *Journal of Personnel Evaluation in Education*, *20*(3), 227-246. doi 10.1007/s11092-008-9060-0

Glazerman, S., Isenberg, E., Dolfin, S., Bleeker, M., Johnson, A., Grider, M., Jacobus, M. (2010). *Impacts of comprehensive teacher induction: Final results from a randomized controlled study*. NCEE 2010-4027. Washington, DC: U.S. Department Of Education.

Gliem, J., & Gilem, R. (2003, October). *Calculating, interpreting and reporting Cronbach's alpha reliability coefficient for Likert-type scales*. Paper presented at the Midwest Research–to–Practice Conference in Adult, Continuing, and Community Education, Ohio State University, Columbus, OH. Retrieved from http://docs.google.com/viewer?a=v&q=cache:e7qNi89yYZoJ:https://scholarworks.iupui.edu/bitstream/handle/1805/344/Gliem%2520%26%2520Gliem.pdf%3Fsequence%3D1+interpreting+cronbach%27s+alpha&hl=en&gl=us&pid=bl&srcid=ADGEESgQJf6HTBwWCq6dX2vAEAjvTxdOp7rBNNSnFCL9xojdYCtm8WwvqbuWlWkw8x3p7lIZEDb3gB1fvCZLOQiZat3ilKQ7JllUNzaJmkwAUjhDnrPeurhQi6F10RKwncIis-JY-0&sig=AHIEtbSBhlUiZuxpO3K1vEhKgFpRcWmeNQ

Gold, Y. (1996). Beginning teacher support: Attrition, mentoring, and induction. In J. P. Sikula, T. J. Buttery, & E. Guyton (Eds.) *Handbook of Research of Teacher*

Education, (pp 548-594). New York: Simon & Schuster Macmillan.

Goldhaber, D., & Anthony, E. (2003). Teacher quality and student achievement. *The Urban Institute.* Urban Diversity Series No 115.

Goldhaber, D., Brewer, D., & Anderson, D. (1999). A three-way error components analysis of educational productivity. *Education Economics, 7*(3), 199-208.

Goritz, A. (2006). Incentives in web studies: Methodological issues and a review. *International Journal of Internet Science, 1*(1), 58-70. Retrieved from http://scholar.google.com/scholar?q=Goritz%2C+A&hl=en&btnG=Search&as_sdt=40000000001&as_sdtp=on

Grossman, P. L., & Thompson, C. (2004). District policy and beginning teachers: A lens on teacher learning. *Educational Evaluation and Policy Analysis, 26*, 281-301. doi: 10.3102/01623737026004281

Guskey, T. (2003). What makes professional development effective? *Phi Delta Kappan, 84*(10), 748-750.

Guskey, T., & Yoon, K. (2009). What works in professional development*? Phi Delta Kappan, 90*(7), p. 495-500.

Hakanen, J., Bakker, A., & Schaufeli, W. (2006). Burnout and work engagement among teachers. *Journal of School Psychology, 43*, 495-513.

Hambleton, R.K., & Swaminathan, H. (1985). *Item response theory: Principles and applications.* Norwell, MA: Kluwer Academic Publishers.

Harrison, D. (1980). *Meta-analysis of selected studies of staff development* (Unpublished doctoral dissertation). University of Florida, Gainesville.

Hattie, J. (2009). *Visible learning: A synthesis of over 800 meta-analyses relating to*

achievement. Routledge: London.

Hayes, J. L. (2006). A longitudinal study of the effects of a mentoring program on teacher performance, efficacy and retention. In J.R. Dangel (Ed.), *Research on teacher induction: Teacher education yearbook XIV*. (pp. 213-241). Lanham, MD: Rowman & Littlefield Education.

Henry, G., Bastian, K., & Fortner, K. (2011). Stayers and leavers: Early-career teacher effectiveness and attrition. *Educational Researcher, 40*(6), 271-280.

Henry, G., Thompson, C., Fortner, C. K., Zulli, R., & Kershaw, D. (2010).*The impact of teacher preparation on student learning in North Carolina public schools.* Chapel Hill, NC: Carolina Institute for Public Policy. Retrieved from http://publicpolicy.unc.edu/?q=node/266

Holahan, P. J., Jurkat, M. P., & Friedman, E. A. (2000). Evaluation of a mentor teacher model for enhancing mathematics instruction through the use of computers. *Journal of Research on Computing in Education, 32*(3), 336-350.

Holloway, J. (2001)The benefits of mentoring. *Educational Leadership, 58*(8), 85–86.

Huang, F., & Moon, T. (2009). Is experience the best teacher? A multilevel analysis of teacher characteristics and student achievement in low performing schools. *Educational Assessment, Evaluation, and Accountability, 21*(3), 209-234. doi: 10.1007/s11092-009-9074-2

Hughes, M. (2006). Selecting and training mentors: Practices and features in mentor training programs across Virginia. In J. Dangel (Ed.), *Research on teacher induction. Teacher education yearbook, Association of Teacher Educators*. Lanham, MD: Rowman and Littlefield Education.

Huling, L., & Resta, V. (2007). *CREATE Teacher Induction Study (Phase II Report).* San Marcos, TX: Texas State University.

Ingersoll, R. (2001). *A different approach to solving the teacher shortage problem.* (Teaching Quality Policy Brief Number 3). Seattle, WA: Center for the Study of Teaching and Policy. Retrieved from http://depts.washington.edu/ctpmail/publications/briefs.shtml

Ingersoll, R., & Kralik, J. (2004). The impact of mentoring on teacher retention: What the research says. *ECS Research Review: Teaching Quality.* Retrieved from http://repository.upenn.edu/gse_pubs/127/

Ingersoll, R., & Smith, T. (2004). Do teaching induction and mentoring matter? *NASSP Bulletin, 88*(638), 28-40. doi: 10.1177/019263650408863803

Ingersoll, R., & Strong, M. (2011). The impact of beginning teacher induction and mentoring programs for beginning teachers: A critical review of the research. *Review of Educational Research, 81*(2), 201-233. doi: 10.3102/0034654311403323

Isenberg, E., Glazerman, S., Bleeker, M., Johnson, A., Lugo-Gil, J., Grider, M., & Dolfin, S. (2009). *Impacts of comprehensive teacher induction: Results from the second year of a randomized controlled study* (NCEE 2009-4072). Washington, DC: U.S. Department of Education.

Johnson, M. (1969). *Model program for teacher in-service training emphasizing the affective dimension.* Arlington Heights, IL: Elk Grove Training and Development Center. Retrieved from ERIC database (ED034747)

Johnson, S. (2004). *Finders and keepers: Helping new teachers survive and thrive in our*

schools. San Francisco, CA: Jossey-Bass.

Johnson, S., & Birkeland, S. (2002). Pursuing a "sense of success": New teachers explain their career decisions. *American Educational Research Journal*, *40*(3), 581- 617. doi: 10.3102/00028312040003581

Johnson, S. M., & Kardos, S. M. (2002). Keeping new teachers in mind. *Educational Leadership, 59*(6). 12-16.

Johnson, S. M., Kardos, S.M., Kauffman, D., Liu E., & Donaldson. (2004). The support gap: New teachers' early experiences in high-income and low-income schools. *Education Policy Analysis Archives, 12*(61). Retrieved from http://epaa.asu.edu/epaa/v12n61/

Joslin, P. (1980). *Inservice teacher education: A meta-analysis of the research* (Unpublished doctoral dissertation). University of Minnesota, Duluth. Retrieved from ERIC database (EJ687747)

Kane, P. (Ed.). (1991*). The first year of teaching.* New York: Penguin Books.

Kaplan, L., & Owings, W. (2004). Introduction to special issue: Teacher effectiveness. *NASSP Bulletin, 88* (638) 1-4.

Kardos, S. M., Johnson, S. M., Peske, H. G., Kauffman, D., & Liu, E. (2001). Counting on colleagues: New teachers encounter the professional cultures of their schools. *Educational Administration Quarterly, 37*, 250-290. doi: 10.1177/00131610121969316

Kelley, L. (2004). Why induction matters. *Journal of Teacher Education, 55*(5). 438. doi: 10.1177/0022487104269653

Kirkpatrick, C. (2007). *To invest, coast, or idle: Second-stage teachers enact their job*

engagement. Paper presented to the American Educational Research Association annual conference. Chicago, IL. Retrieved from www.gse.harvard.edu/.../CLK%20aera%202007%20paper%20to%20post.pdf

Lowrey, S., & Reaves, B. (2008). CREATE teacher induction study. *Texas Association of School Administrators Professional Journal, 23*(1), 26-28.

Luther, V., & Richman, L. (2009, December). Teacher attrition: Listening to teachers to find a solution. *Academic Leadership: The Online Journal Empirical Research.* Retrieved from http://www.academicleadership.org/emprical_research/Teacher_Attrition_Listening_to_Teachers_to_Find_a_Solution_printer.shtml

Marks, H. M. (2000). Student engagement in instructional activity: Patterns in elementary, middle and high school years. *American Educational Research Journal, 37*, 153-184.

Megay-Nespoli, K. (1993). *The first year for elementary school teachers.* Springfield, IL: Charles C. Thomas.

Mendro, R. (1998). Student achievement and school and teacher accountability. *Journal of Personnel Evaluation in Education*, *12*, 257–267.

Mewborn, D., & Stinson, D. (2007). Learning to teach as assisted performance. *Teachers College Record, 109*(6), 1457-1487. Retrieved from http://www.tcrecord.org

Moir, E. (2003). Launching the next generation of teachers through quality induction. Paper prepared for the National Commission on Teaching and America's Future. 2003 Annual Commissioners and Partner States' Symposium. Retrieved from http://search02.stcloudstate.edu/search?q=Launching+the+next+generation+of+te

achers+through+quality+induction&btnG.x=0&btnG.y=0&site=default_collection&client=default_frontend&proxystylesheet=default_frontend&proxyreload=0&output=xml_no_dtd

Moir, E. (2007). Quality induction: Mentoring and support. *Teacher Education Quarterly*, *28*(10), 109–114.

Moskowitz, J., & Stephens, M. (1997). *From students of teaching to teachers of students: Teacher induction around the Pacific Rim.* Washington, DC: Palavin Research Institute.

National Commission on Teaching and America's Future. (1997). *What matters most: Teaching for America's future.* Washington, DC: Author. Retrieved from http://www.nctaf.org/resources/research_and_reports/nctaf_research_reports/index.htm

National Commission on Teaching and America's Future: Policy Brief. (2007). *The high cost of teacher turnover*. New York: Author. Retrieved from http://www.nctaf.org/resources/research_and_reports/nctaf_research_reports/index.htm

New Teacher Center. (2008). North Carolina teacher working conditions survey brief: Working conditions influence teacher retention. *Research Brief.* Retrieved from http://www.ncteachingconditions.org/research2008

North Carolina State Board of Education. (2011). *North Carolina public schools: Statistical profile 2011.*Raleigh, NC: Author. Retrieved from http://apps.schools.nc.gov/pls/apex/f?p=1:1:1191978487461738

North Carolina State Board of Education. (2008). *Report on the effectiveness of*

representative mentor programs 2008-2009. Raleigh, NC: Author. Retrieved from http://www.ncpublicschools.org/stateboard/meetings/2008/11

North Carolina State Board of Education. (2010). *Report on the North Carolina mentor task force: Revised mentor standards and training.* Raleigh, NC: Author. Retrieved from http://www.ncpublicschools.org/stateboard/meetings/2010/01

Nye, B., Konstantopoulos, S., & Hedges, L.V. (2004). How large are teacher effects? *Education Evaluation Policy Analysis*, *26* (3). doi: 10.3102/01623737026003237

Odell, S. (2006). Overview and framework. In J. Dangel (Ed.), *Research on teacher induction. Teacher education yearbook, Association of Teacher Educators*. pp. 203-211. Lanham, ML: Rowman and Littlefield Education.

Parker, M., Ndoye, A., & Imig, S. (2009). Keeping our teachers! Investigating mentoring practices to support and retain novice educators. *Mentoring & Tutoring: Partnership in Learning, 17*(4), 329-341.

Peske, H. G., Liu, E., Johnson, S. M., Kauffman, D., & Kardos, S. M. (2001). The next generation of teachers: Changing conceptions of a career in teaching. *Phi Delta Kappan, 83*(4), 304-311.

Presser, S., Couper, M., Lessler, J., Martin, E., Martin, J., Rothgeb, J., & Singer, E. (2004). Methods for testing and evaluating survey questions. *Public Opinion quarterly 68(1),* 109-130. doi: 10.1093/poq/nfh008

Random Number Generator. (2011). StatTrek. http://stattrek.com/Tables/Random.aspx

Rasch, G. (1960). *Probabilistic models for some intelligence and attainment tests.* Copenhagen: Danish Institute for Educational Research.

Reiman, A., Cordell, K., & Thomas, E. (2007). *New teacher support: Report to the UNC*

deans' council on teacher education. Chapel Hill, NC: University of North Carolina General Administration.

Rivkin, S., Hanushek, E., & Kain, J. (2005). Teachers, schools, and academic achievement. *Econometrica.73*(2), p. 417-458.

Rockoff, J. (2008). *Does mentoring reduce turnover and improve skills of new employees? Evidence from teachers in New York City.* Working Paper 13868, Cambridge, MA: NBER. Retrieved from http://www.nber.org/papers/w13868

Rockoff, J. (2004). The impact of individual teachers on student achievement: Evidence from panel data. *American Economic Review*, *94*(2), 247–52.

Ryan, K. (Ed.). (1992). *The roller-coaster year: Essays by and for beginning teachers.* Harper Collins Publishers.

Sachar, E. (1991). *Shut up and let the lady teach.* New York: Poseidon Press.

Sanders, W., & Rivers, J. (1996). *Cumulative and residual effects of teachers on future student academic achievement*. Knoxville, TN: Value Added Research and Assessment Center, University of Tennessee. Retrieved from http://www.cgp.upenn.edu/ope_techreports.html

Sawchuk, S. (2008). Intensive turnover shows little impact. *Education Week, 28*(11), 1-3.

Schaffer, E.C., Stringfield, S., & Wolffe, D.M. (1992). An innovative beginning teacher induction program: A two-year analysis of classroom interactions. *Journal of Teacher Education*, *43*(3), 181-192. doi: 10.1177/0022487192043003004

Serpell, Z., & Bozeman,L. (1999). *Beginning teacher induction*: *A report on beginning teacher effectiveness and retention*. Washington, DC: American Association of

Colleges for Teacher Education. Retrieved from ERIC database. (ED448153)

Shulman, L. S. (1986). Those who understand: Knowledge growth in teaching. *Educational Researcher 15,* 4-14.

Smith, T., & Ingersoll, R. (2004). What are the effects of induction and mentoring on beginning teacher turnover? *American Educational Research Journal*, *41*(3), 681-714. doi: 10.3102/00028312041003681

Spillane, J. P., Halverson, R., & Diamond, J. B. (2001). Investigating school leadership practice: A distributed perspective. *Educational Researcher, 30*(3), 23-28. doi: 10.3102/0013189X030003023

Stansbury, K., & Zimmerman, J. (2000). *Lifelines to the classroom: Designing support for beginning teachers*, a WestEd Knowledge Brief. San Francisco: WestEd.

Stanulis, R., Burrill, G., & Ames, K. (2007). Fitting in and learning to teach: Tensions in developing a vision for a university-based induction program. *Teacher Educator Quarterly, 34*(3), 135–47.

Stein, M. K., & D'Amico, L. (2002). Inquiry at the crossroads of policy and learning: A study of a district-wide literacy initiative. *Teachers College Record*, *104*, 1313-1344.

Sue, V., & Ritter, L (2007). *Conducting online surveys.* Sage Publications: Thousand Oaks, CA.

Swanson, P. (1968). A time to teach-and a time to learn: The beginning teacher. *National Association of Secondary School Principals Bulletin*, *52*(330), 74-84.

Sweeny, B., & DeBolt, G. (2000). A survey of the 50 states: Mandated teacher induction programs. In S. Odell & L. Huling. (Eds.), *Quality mentoring for novice teachers*

*(*pp. 97-106). Indianapolis, IN: Kappa Delta Pi.

Thompson, M., Paek, P., Goe, L., & Ponte, E. (2004a). *Study of the impact of the California formative assessment and support system for teachers; Report 1: Beginning teachers engagement with BTSA/CFASST.* ETS-RR-04-30. Washington, DC: Educational Testing Service. Retrieved from http://www.ets.org/research/policy_research_reports/rr-04-30

Thompson, M., Paek, P., Goe, L., & Ponte, E. (2004b). *Study of the impact of the California formative assessment and support system for teachers; Report 3: Relationship of BTSA/CFASST engagement and student achievement.* ETS-RR-04-31. Washington, DC: Educational Testing Service. Retrieved from http://www.ets.org/research/policy_research_reports/rr-04-31

Thompson, M., Paek, P., Goe, L., & Ponte, E. (2004c). *Study of the impact of the California formative assessment and support system for teachers; Report 4: Methodological considerations and recommendations for future research.* ETS-RR-04-31. Washington, DC: Educational Testing Service. Retrieved from http://www.ets.org/research/policy_research_reports/rr-04-32

Timperley, H., Wilson, A., Barrar, H., & Fung, I.Y.Y. (2007). *Teacher professional learning and development: Best evidence synthesis.* Wellington, New Zealand: Ministry of Education. Retrieved from http://www.ibe.unesco.org

Villani, S. (2002). *Mentoring programs for new teachers: Models of induction and support.* Thousand Oaks, CA: Corwin Press.

Villar, A., & Strong. M. (2007). *Is mentoring worth the money? A benefit-cost analysis and five-year rate of return of a comprehensive mentoring program for beginning*

teachers. Santa Cruz, CA: The New Teacher Center.

Wade. R. (1985). What makes a difference in inservice teacher education? A meta-analysis of research. *Educational Research, 42*(4), 48-54.

Wang, A., Tregido, A., & Mifsud, V. (2002). *Analyzing state policies and programs for beginning teacher induction: A comprehensive framework*. Princeton Educational Testing Services.

Wang, J. (2010). *Past, present, and future research on teacher induction: An anthology for researchers, policy makers, and practitioners* (Kindle Locations 3547-3552). Rowman & Littlefield Education. Kindle Edition.

Wang, J., & Odell, S. (2002). Mentored learning to teach to standards-based teaching reform: A critical review. *Review of Educational Research, 72*(3), 481-546. doi: 10.3102/00346543072003481

Wang, J., Odell, S., & Schwille, S. (2008). Effects of teacher induction on beginning teachers' teaching : A critical review of the literature. *Journal of Teacher Education, 59*(2), 132-152. doi: 10.1177/0022487107314002 2008 59

Wayne, A., Youngs, P., & Fleischman, S. (2005). Improving teacher induction. *Educational Leadership, 62*(8), 76-78. *Journal of Mathematics Teacher Education, 11*(2), 139-164.

Wilson, S., Darling-Hammond, L., & Berry, B. (2001). A case of successful teaching policy: Connecticut's long-term efforts to improve teaching and learning. Seattle: University of Washington, Center for the Study of Teaching and Policy. Retrieved from http://depts.washington.edu/ctpmail/publications/byauthor.shtml#Darling-

Hammond,%20Linda

Wong, H. (2003). Collaborating with colleagues to improve student learning. *ENC Focus*, *11*(6), 9. Retrieved from http://www.goenc.com

Wong, H. (2004). Induction programs that keep new teachers teaching and improving. *NAASP Bulletin, 88*(638), 41-58, doi: 10.1177/019263650408863804

Wright, S., Horn, S., & Sanders, W. (1997). Teacher and classroom context effects on student achievement: Implications for teacher evaluation. *Journal of Personal Evaluation in Education,* doi: 10.3102/00346543073001089

Ye-He. (2009). Strength-based mentoring in pre-service teacher education: A literature review. *Mentoring & Tutoring: Partnership in Learning, 17*(3), 263–275. doi: 10.1080/13611260903050205

Yoon, K., Duncan, T., Lee, S., Scarloss, B., & Shapley, K. (2007). *Reviewing the evidence on how teacher professional development affects student achievement.* Issues and Answers Report, REL, 2007-No.033. Washington, DC: U.S. Department of Education, Institute of Educational Evaluation and Regional Assistance, Regional Educational Laboratory Southwest. Retrieved from http://ies.ed.gov/ncee/edlabs

Youngs, P. (2007). How elementary principals' beliefs and actions influence new teachers' experiences. *Educational Administration Quarterly, 43*, 101-137. doi: 10.1177/0013161X06293629

APPENDICES

Appendix A: Beginning Teacher Induction Program Survey
Appendix B: Summary of Suggestions: Expert Panel and Pilot Teachers
Appendix C: Email message to Beginning Teacher Coordinators
Appendix D: Informed Consent

APPENDIX A:

BEGINNING TEACHER INDUCTION PROGRAM SURVEY (BTIPS)

What is induction?
For the purpose of this survey, induction refers to a professional development process that is organized by a school district to train, support, and retain new teachers (Wong, 2003). Most induction programs include the following components: formal orientation, assigned mentor for years one through three, professional development seminars, and involvement of the principal in supporting the beginning teacher.

Orientation
For the purpose of this survey, beginning teacher orientation is held shortly after first year teachers are hired. Orientation may include workshops, symposia, collaboration with mentors, or other professional development opportunities and may be 1 to 3 days in length.

1. Were you hired before or after school began your first year of teaching?

❍ Hired before students arrived in August.
❍ Hired after students arrived in August.

If Hired before students arrived Is Selected, Then Skip To When did you attend orientation if you...If Hired after students arrived Is Selected, Then Skip To When did you attend orientation if you...

2a. If you were *hired before* students arrived in August, when did you attend orientation?

❍ I attended orientation during or right before the first teacher workdays.
❍ I attended orientation after classroom instruction began.
❍ Orientation was held at a time I could not attend.
❍ Orientation was not held in my system.

If I attended orientation during... Is Selected, Then Skip To Which information was provided by you...If I attended orientation after ... Is Selected, Then Skip To Which information was provided by you...If Orientation was held in...Is Selected, Then Skip To End of Block If Orientation was not held in….is Selected, Then skip to End of Block

2b. If you were hired after students arrived in August, when did you attend orientation?

- ❍ I attended orientation within the first 10 days of employment.
- ❍ I attended orientation later in the year.
- ❍ Orientation was held at a time I could not attend.
- ❍ Orientation was not held in my system.

If Orientation was held at... Is Selected, Then Skip To End of Block If Orientation was not held in…is Selected, Then Skip to End of Block

Which information was provided by your school system during orientation?

	Not Offered	Offered
3. Overview of North Carolina State Board of Education's Strategic Priorities and Goals	❍	❍
4. Overview of your system's goals, policies, and procedures, including process for achieving a Standard Professional 2 license	❍	❍
5. Overview of your school's goals, policies and procedures, including strategies for working constructively with parents to enhance student learning	❍	❍
6. Description of available services and training opportunities for teachers	❍	❍
7. Description of school system beginning teacher support program	❍	❍
8. Overview of the North Carolina's Professional Teaching Standards	❍	❍
9. Overview of the North Carolina's testing program	❍	❍
10. Overview of the North Carolina teacher evaluation process	❍	❍
11. Overview of classroom management strategies, including appropriate use of seclusion and restraint of students	❍	❍

12. If the orientation in your system had additional professional development opportunities, please specify:

To what extent do you feel that your *knowledge* was enhanced in each of the following areas as a result of participating in your school system orientation?

	Not Enhanced	Enhanced	Greatly Enhanced
13. NC State Board of Education's strategic priorities and goals	❍	❍	❍
14. School system goals, policies, procedures	❍	❍	❍
15. School goals, policies, procedures	❍	❍	❍
16. Services and training opportunities	❍	❍	❍
17. Beginning teacher support program	❍	❍	❍
18. NC Professional Teaching Standards	❍	❍	❍
19. NC testing program	❍	❍	❍
20. Process for achieving Standard Professional 2 (continuing) license	❍	❍	❍
21. Classroom management strategies, including appropriate use of seclusion and restraint	❍	❍	❍
22. Working constructively with parents to enhance student learning	❍	❍	❍
23. NC teacher evaluation process	❍	❍	❍

To what extent do you feel that your *teaching practices* were enhanced as a result of orientation activities you experienced?

	Not Enhanced	Enhanced	Greatly Enhanced
24. The ability to teach content effectively	❍	❍	❍
25. The ability to use a variety of instructional methods	❍	❍	❍
26. The ability to address the needs of diverse learners	❍	❍	❍
27. The ability to manage the classroom effectively	❍	❍	❍
28. The ability to communicate effectively with parents	❍	❍	❍

29. Overall, what is your perception of the impact orientation had on your teaching?

- ❍ No impact
- ❍ Minimal impact
- ❍ Moderate impact
- ❍ Great impact

30. Which orientation activity, if any, had the greatest impact on your teaching and why?

Mentor Support

For the purpose of this survey, a formally assigned mentor is a career teacher who has been selected by the principal and matched to a beginning teacher in his/her first – third year of teaching. The mentor is charged with helping his/her mentee transition into the profession. It is a goal for the mentors to engage his/her mentee in the improvement of teaching and learning.

31. Did you have a formally assigned mentor in....

	No	Yes
Year 1	❍	❍
Year 2	❍	❍

If No Is Equal to 2, Then Skip To End of Block

32. When was your mentor assigned?

- ❍ Before the first teacher workdays.
- ❍ During the first teacher workdays.
- ❍ After classroom instruction began

Did your mentor have current or recent experience teaching...

	Year 1		Year 2	
	No	Yes	No	Yes
33. The same subject you taught?	❍	❍	❍	❍
34. the same grade or department you taught?	❍	❍	❍	❍
35. students with the same demographic background or special needs that you taught?	❍	❍	❍	❍

Was your mentor located...

	Year 1		Year 2	
	No	Yes	No	Yes
36. in the same school as you?	❍	❍	❍	❍
37. in close proximity to you (i.e., same wing or hallway)?	❍	❍	❍	❍

38. On average, how often did you meet formally with your mentor (i.e., specific appointments to work on school activities or to discuss your teaching)? (pull-down menu)

- ❍ Never
- ❍ Once a Month
- ❍ 2-3 Times a Month
- ❍ Once a Week
- ❍ 2-3 Times a Week
- ❍ Daily

39. How much time did you typically spend with your mentor in formal meetings?

- ❍ Less than 1/2 hour
- ❍ 1-2 hours
- ❍ More than 2 hours

Over the past two years, did your mentor offer support in...

	No	Yes
40. planning and pacing using the NC Standard Course of Study?	❍	❍
41. Using multiple instructional strategies?	❍	❍
42. teaching students with varying levels of achievement or ability?	❍	❍
43. understanding the NC Professional Teaching Standards?	❍	❍
44. preparing students for a standardized testing environment?	❍	❍
45. preparing students for success on End of Course/End of Grade tests?	❍	❍
46. understanding school policies and procedures?	❍	❍
47. managing classroom activities, transitions, and routines?	❍	❍
48. managing student behavior?	❍	❍
49. communicating with parents?	❍	❍

To what extent do you feel your mentor provided...

	None	Some	A Lot
50. Emotional support (e.g., providing a friendly ear)	❍	❍	❍
51. Logistical support (e.g., understanding school policies and procedures for copying materials, lunch duty, etc.)	❍	❍	❍
52. Support for managing behavior (e.g., suggesting ways to prevent and handle challenging behaviors)	❍	❍	❍
53. Instructional support (e.g., planning or analyzing instruction)	❍	❍	❍
54. Subject-matter support (e.g., curriculum support and/or resources)	❍	❍	❍
55. Support for completing beginning teacher requirements (e.g., developing professional development plan)	❍	❍	❍

To what extent do you feel that your *knowledge* was enhanced in each of the following areas as a result of the support your mentor provided?

	Not Enhanced	Enhanced	Greatly Enhanced
56. Developing your Personal Development Plan (PDP)	❍	❍	❍
57. Planning instruction using the NC Standard Course of Study	❍	❍	❍
58. Adapting teaching to meet NC Professional Teaching Standards	❍	❍	❍
59. Establishing and articulating goals for student learning	❍	❍	❍
60. Using instructional strategies and resources to respond to students' diverse needs	❍	❍	❍
61. Designing student assessment to inform practice	❍	❍	❍
62. Implementing an effective classroom management plan	❍	❍	❍
63. Working constructively with parents to enhance student learning	❍	❍	❍
64. Reflecting on teaching practice	❍	❍	❍

To what extent do you feel that your *teaching practices* were enhanced as a result of the support your mentor provided?

	Not Enhanced	Enhanced	Greatly Enhanced
65. The ability to teach content effectively	❍	❍	❍
66. The ability to use a variety of instructional methods	❍	❍	❍
67. The ability to address needs of diverse learners	❍	❍	❍
68. The ability to manage the classroom effectively	❍	❍	❍
69. The ability to communicate effectively with parents	❍	❍	❍

70. During the past two years, did your mentor offer other support not mentioned in the survey? Please specify.

71. Overall, what is your perception of the impact of mentor support on your teaching?

❍ No impact
❍ Minimal impact
❍ Moderate impact
❍ Great impact

72. Think about the types of support received from your mentor. Which support, if any, had the greatest impact and why?

_____

Principal/School Administrator Support

For the purpose of this survey, the principal/school administrator is involved with the beginning teacher's support program in addition to fulfilling state mandated teacher observation and evaluation requirements.

73. How much supportive communication did you receive from your principal/school administrator regarding your teaching practice (do not include communication regarding observations or evaluations)?

❍ None
❍ Very little
❍ Some
❍ A lot

74. How supportive of the beginning teacher induction program was your principal/administrator?

- ❍ Not supportive of the beginning teacher induction program
- ❍ Somewhat supportive of the beginning teacher support program (met with me/my mentor once)
- ❍ Very supportive of the beginning teacher support program (met with me/my mentor more than once)
- ❍ Unsure

Did your principal/school administrator assign you...

	No	Yes
75. a limited number of preparations?	❍	❍
76. a limited number of exceptional or difficult students?	❍	❍
77. Limited non-instructional duties?	❍	❍
78. extracurricular assignments only at your request?	❍	❍
79. joint planning time with your mentor?	❍	❍
80. opportunities during the school day to work with your mentor or to observe other teachers?	❍	❍

Regarding your professional development plan (PDP), did your principal/school administrator...

	No	Yes
81. help you develop your PDP?	❍	❍
82. use PDP goals to guide observations?	❍	❍
83. revisit PDP at mid-year?	❍	❍
84. use PDP goals to guide the final evaluation?	❍	❍

Regarding each observations/evaluations, did your principal/school administrator...

	No	Yes
85. observe at least three times each year?	❍	❍
86. Stay for at least one full class period or 45 consecutive minutes for each observation?	❍	❍
87. follow with a post conference after the observation?	❍	❍

To what extent do you feel that your *knowledge* was enhanced in each of the following areas as a result of the support your principal/school administrator provided?

	Not Enhanced	Enhanced	Greatly Enhanced
88. Planning instruction using the NC Standard Course of Study	❍	❍	❍
89. Adapting teaching to meet NC Professional Teaching Standards	❍	❍	❍
90. Establishing and articulating goals for student learning	❍	❍	❍
91. Using instructional strategies and resources to respond to students' diverse needs	❍	❍	❍
92. Designing student assessment to inform practice	❍	❍	❍
93. Implementing an effective classroom management plan	❍	❍	❍
94. Working constructively with parents to enhance student learning	❍	❍	❍
95. Reflecting on teaching practice	❍	❍	❍

To what extent do you feel that your *teaching practices* were enhanced as a result of the support provided by your principal/school administrator?

	Not Enhanced	Enhanced	Greatly Enhanced
96. The ability to teach content effectively	❍	❍	❍
97. The ability to use a variety of instructional methods	❍	❍	❍
98. The ability to address the needs of diverse learners	❍	❍	❍
99. The ability to manage the classroom effectively	❍	❍	❍
100. The ability to communicate effectively with parents	❍	❍	❍

101. If your principal/school administrator provided support not listed, please specify.

102. Overall, what is your perception of the impact of principal/school administrator support on your teaching?

❍ No impact
❍ Minimal impact
❍ Moderate impact
❍ Great impact

103. Think about the types of support received from your principal/school administrator. Which support, if any, had the greatest impact and why?

Professional Development (PD)

For the purpose of this survey, professional development represents activities developed specifically for beginning teachers (e.g. seminars, classes, workshops, or courses taken at a college or university).

Have you participated in professional development activities organized for beginning teachers, specific to and concentrating on...

	No	Yes
104. methods of teaching?	❍	❍
105. subject matter?	❍	❍
106. instructional technology?	❍	❍
107. differentiating instruction for students with special needs?	❍	❍
108. student assessment?	❍	❍
109. preparing students for standardized testing?	❍	❍
110. student motivation/engagement?	❍	❍
111. student discipline and behavior management in the classroom?	❍	❍
112. strengthening communication with parents?	❍	❍

What types of professional development activities were offered to beginning teachers by your school or system?

	Not provided	Provided
113. Workshops or seminars	❍	❍
114. Symposia or conferences	❍	❍
115. Book studies	❍	❍
116. Virtual support	❍	❍

117. If you participated in other professional development activities organized for beginning teachers, please specify.

How frequently did you experience the following professional development activities?

	Not at all	Occasionally	Frequently
118. Participated in a teacher study group	❍	❍	❍
119. Attended workshops	❍	❍	❍
120. Observed the teaching of other teachers	❍	❍	❍
121. Received coaching from other teachers	❍	❍	❍
122. Examined student data with other teachers	❍	❍	❍
123. Developed assessments or lesson plans collaboratively with other teachers	❍	❍	❍

Were the professional development activities over the past two years...

	No	Yes
124. designed to support PDP goals?	❍	❍
125. organized as a professional learning community?	❍	❍
126. based on learning from prior professional development activities?	❍	❍
127. followed up with related activities?	❍	❍

How much emphasis did your professional development activities place on the following topics?

	No Emphasis	Moderate Emphasis	Great Emphasis
128. Specific concepts within your content	❍	❍	❍
129. Student assessment (e.g., textbook- or teacher-developed tests)	❍	❍	❍
130. Technology to support instruction	❍	❍	❍
131. Meeting the learning needs of special populations of students	❍	❍	❍
132. End of Course tests (e.g., preparing for, understanding, or interpreting)	❍	❍	❍
133. Communicating with parents	❍	❍	❍

To what extent do you feel that your *knowledge* was enhanced in each of the following areas as a result of the support professional development provided?

	Not Enhanced	Enhanced	Greatly Enhanced
134. Planning instruction using the NC Standard Course of Study	❍	❍	❍
135. Adapting teaching to meet NC Professional Teaching Standards	❍	❍	❍
136. Establishing and articulating goals for student learning	❍	❍	❍
137. Using instructional strategies and resources to respond to 138. students' diverse needs	❍	❍	❍
139. Integrating technology in instruction	❍	❍	❍
140. Deepening subject matter knowledge	❍	❍	❍
141. Designing student assessment to inform practice	❍	❍	❍
142. Implementing an effective classroom management plan	❍	❍	❍
143. Working constructively with parents to enhance student learning	❍	❍	❍
144. Reflecting on teaching practice	❍	❍	❍

To what extent do you feel that your *teaching practices* were enhanced as a result of the professional development activities you experienced?

	Not Enhanced	Enhanced	Greatly Enhanced
145. The ability to teach content effectively	❍	❍	❍
146. The ability to use a variety of instructional methods	❍	❍	❍
147. The ability to address the needs of diverse learners	❍	❍	❍
148. The ability to manage the classroom effectively	❍	❍	❍
149. The ability to communicate with parents effectively	❍	❍	❍

150. Overall, what is your perception of the impact of beginning teacher professional development activities on your teaching?

- ❍ No impact
- ❍ Minimal impact
- ❍ Moderate impact
- ❍ Great impact

151. Which professional development activity experienced in your first two years of teaching, if any, had the greatest impact and why?

Did you complete or are you currently enrolled in...

	No	Yes
152. college or university course(s) to receive certification or licensure for your current teaching assignment?	❍	❍
153. college or university course(s) to receive an advanced degree in your current teaching assignment?	❍	❍

154. If you have any additional comments or feedback that you'd like to share regarding the support you were given as a beginning teacher and the impact of that support, please share below.

Please verify that you are a second year teacher completing this survey by writing your name in the space below. As a reminder, survey answers are confidential; your name will not be associated with research findings in any way.

_____

Please tell us about yourself….

1. What is your area of license?
- ❍ 9-12 English (1)
- ❍ 9-12 Mathematics (2)
- ❍ 9-12 Science (3)
- ❍ 9-12 Social Studies (4)
- ❍ 6-12 English/Language Arts (5)
- ❍ 6-12 Mathematics (6)
- ❍ 6-12 Science (7)
- ❍ 6-12 Social Studies (8)
- ❍ Special Education (Teacher of Record) (9)
- ❍ Other, please specify (10) _____

2. What is your highest degree?
- ❍ BS Ed
- ❍ BS or BA
- ❍ MAEd or MAT
- ❍ MS or MA
- ❍ EdS (Educational Specialist)
- ❍ PhD or EdD
- ❍ Other, please specify

3. How would you describe your entry into the profession?

- ❍ Traditionally prepared - completed a college/university teacher induction program
- ❍ Lateral Entry - followed/following a college/university plan of study
- ❍ Lateral Entry - followed/following a Regional Alternative Licensing Center (RALC) plan of study
- ❍ Other, please specify

4. What subject do you teach?

- ❍ English
- ❍ Mathematics
- ❍ Science
- ❍ Social Studies
- ❍ Other, please specify

5. Did you teach a course/subject requiring an End-of-Course or End-of-Grade test as a *first-year teacher?*

- ❍ No
- ❍ Yes, please list all courses/subjects taught requiring End-of-Course or End-of-Grade tests

6. Did you teach or are you teaching a course/subject requiring an End-of-Course or End-of-Grade test this year*?*

- ❍ No
- ❍ Yes, please list all courses/subjects taught requiring End-of-Course or End-of-Grade tests

During this school year, do you or will you....

	No	Yes
7. Coach a sport (including cheerleading)?	❍	❍
8. Sponsor student groups, clubs, or organizations?	❍	❍
9. Serve as a department lead or chair?	❍	❍
10. Serve on a school-wide committee?	❍	❍
11. Serve on a district-wide committee or task force?	❍	❍

If No Is Equal to 5, Then Skip To During your most recent full week of ...

12. Did or will the duties above prevent you from participating in beginning teacher support activities?

- ❍ No
- ❍ Yes

13. During your most recent full week of teaching at this school, what is the total number of students you teach each day? Do not include homeroom or study halls. (pull-down menu)

- ❍ 30-45
- ❍ 46-60
- ❍ 61-75
- ❍ 76 or more

14. What is your gender?
- ❍ Male
- ❍ Female

15. What is your age? (pull-down menu)

- ❍ < 25
- ❍ 25-34
- ❍ 35-44
- ❍ 45 >

16. What is your ethnicity? (pull-down menu)

- ❍ African American or Black
- ❍ Asian
- ❍ Caucasian or White
- ❍ Hispanic or Latino
- ❍ Alaska Native
- ❍ Native American
- ❍ Native Hawaiian or Other Pacific Islander
- ❍ Multiracial

If you wish to be included in a drawing for one of four $50.00 Visa gift cards, please enter your name and home mailing address.

APPENDIX B: SUMMARY OF SUGGESTIONS: EXPERT PANEL AND PILOT TEACHERS

#	Question	No Change Revise/Omit	Expert/Pilot/ Researcher
	Orientation		
1	Topics covered	Split into 2 questions – goals for system and school	Expert comment – data supports
2	Knowledge enhanced	Move to question 3 Revise to align with activities offered Add question - parents	Researcher Expert Expert – data supports
3	Practice enhanced	No change	
4	Open-ended - Additional Opportunities	Move to question 2	Researcher – better flow
5	Perception impact	No change	
6	Open-ended – Greatest Impact	No change	
	Mentor Support		
1	When assigned	No change	
2	Experience of mentor	Change age of students to grade 0mit unsure	Pilot Researcher-parallel w/ other questions
3	Location	No change	
4	Offer support	Preparing students for EOC – can mean many different things/move to question 6	Expert/Researcher
5	Frequency of meetings	No change – move to question 4	Researcher
6	Amount of time	No change – move to question 5	Researcher
7	Mentor provided support	No change	
8	Knowledge enhanced	Add parent item	Researcher-parallel w/ other components
9	Practice enhanced	No change	
10	Open-ended –Other Support	No change	
11	Perceived impact	No change	
12	Open-ended- Greatest impact	No change	

	Mentor Support from Other Colleagues – 6 questions	**Remove section** – not relevant to research/ shorten survey	Researcher Expert/Pilot
	Administrator Support		
1	Supportive communication	No change	
2	Knowledgeable	Revise to how supportive	Expert – knowledgeable but not supportive
3	Assignments	No change	
4	PD plan	No change	
5	Observations/evaluations	Clarify – 45 min at each observation	Expert
*	Knowledge enhanced	Add this section to pilot	Researcher – parallel w/ other components
6	Teaching practice	No change	
7	Open-ended –Other Support	No change	
8	Perceived impact	No change	
9	Open-ended- Greatest impact	No change	
	Professional Development		
1	Types of workshops	Rewrite so not multiple response Revise PD terminology Move to question 2	Researcher-difficult to analyze Expert-called different things/system
2	Enrolled in courses	Move to 11	Researcher – better flow
3	Participation in	Move to question 1	Researcher – better flow
4	Frequency	No change	
5	Purpose of	No change	
6	Emphasis on	Add parent item	Researcher – parallel w/ other components
7	Knowledge enhanced	Add parent item	Researcher – parallel
8	Teaching practice	No change	
9	Open-ended – other PD	Move to question 3	Researcher –

			better flow
10	Perceived impact	No change	
11	Open-ended – greatest impact	No change	
	Demographics		
1	Area of license	Revise –use drop down box	Expert
2	Highest degree	Add MS as an option	Pilot
3	Entry	Add clarification to traditionally prepared	Expert
4	Discipline taught	Change to subject taught	Expert
5	Teaching assignment	Remove – test data will take care of this	Researcher
*	Teach EOC course year1/year 2	Add to final survey	Researcher – clarification
6	Additional duties	Rewrite – not multiple response question Change to yes/no	Researcher- difficult to analyze
7	Duties prevent from participating	Skip logic from item 6	Researcher
8	Number of students	No change	
9	Teach in Title I school	Omit – not relevant to research	Researcher
10	Gender	No change	
11	Age	Revise age range in categories	Expert
12	Ethnicity	Add multiracial/alphabetize	Expert/Researcher

APPENDIX C:

RECRUITMENT EMAIL MESSAGE TO BEGINNING TEACHERS

Greetings, Second-year Beginning Teachers -Congratulations! You have been selected to participate in a statewide survey of 2nd year high school teachers in the North Carolina public schools. Responses to this survey will help beginning teacher support providers better understand the relationships between second-year teachers' level of engagement with induction program components and the learning of students.

Janice Holt, Executive Director of Teacher Recruitment, Advising and Career Support at Western Carolina University is conducting this research in partial fulfillment of requirements for the Ed.D. in Educational Leadership. The WCU Institutional Review Board has approved the study.

This survey should take approximately 25 minutes to complete. There are no foreseeable risks associated with completing this survey and your participation will help to improve the quality of support beginning teachers receive from NC public school systems. If you choose to continue, please click on the following link:

NC Beginning Teacher Induction Program Survey (NC BTIPS)

Or copy and paste the URL into your internet browser: ${l://SurveyURL}

Those completing the survey will have an opportunity to enter their name into a drawing for one of four - $50.00 Visa gift cards. Details will follow at the end of the survey.

Please contact Janice Holt if you have any questions about the survey at the address below. Thank you in advance for participating in the study.

Janice Holt, Doctoral Student
College of Education and Allied Professions | Western Carolina University
223 Killian | Cullowhee, NC 28723

Office: 828.227.3310 | Fax: 828.227.7315

APPENDIX D:

INFORMED CONSENT – RESEARCH PARTICIPANTS

Beginning Teachers - Teacher induction programs have been reported to shorten the time it takes for beginning teachers to perform as experienced teachers. However, it is unclear if components of induction programs have an impact on the achievement of students in the classrooms of new teachers. The purpose of this study is to better understand the relationships between second-year teachers' level of engagement with induction components and student achievement.

Please take approximately 25 minutes to complete the Beginning Teacher Induction Program Survey. Your participation is voluntary, and you may stop at any time or choose not to answer questions without penalty. Research findings regarding the level of engagement and impact of induction as measured by performance on standardized tests may be presented at professional conferences or published in professional journals. Survey answers will be confidential; your name will not be associated with research findings in any way, and only the researcher will know your identity. All data will be pooled and reported in aggregate form.

This study involves no foreseeable risks and no deception is involved. It is anticipated that research findings will benefit school leaders and policymakers as they develop induction programs that will provide new teachers with the knowledge and skills to make a positive difference on the learning of the students. If you would like a copy of survey results please contact Janice Holt (holt@email.wcu.edu).

Those completing the survey will have an opportunity to enter their name in a drawing for one of four-$50.00 Visa gift cards. This will in no way change the confidentiality of your responses. Details will follow at the end of the survey.

If you have difficulty accessing or completing the survey, contact Janice Holt at holt@email.wcu.edu. Concerns or complaints about the research may be presented to Dr. Kathleen Jorissen, Educational Leadership and Foundations, at ktjorissen@email.wcu.edu. If you have questions or concerns about your treatment as a participant in the study, please contact the IRB board at 828-227-7212 or irb@wcu.edu.

Thank you for participating in this beginning teacher research study,
Janice Holt, Doctoral Candidate
Western Carolina University