

2017

The Impact of Instructional Coaching on the Self-Efficacy of Beginning Teachers in the Facilitation of Student Learning

Shannon White

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The Impact of Instructional Coaching on the Self-Efficacy of Beginning Teachers in the
Facilitation of Student Learning

By
Shanon White

A Dissertation Submitted to the
Gardner-Webb University School of Education
in Partial Fulfillment of the Requirements
for the Degree of Doctor of Education

Gardner-Webb University
2017

Approval Page

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Acknowledgements

This dissertation is a concrete example of perseverance, persistence, and patience. Without the ongoing support of my husband, Vincent, and my son, David, I don't know that this dream would ever have become a reality. I especially appreciate the push through the final stages provided by Dr. Doug Eury; I know that this process would not have come to a happy end without him. So many people have provided support and encouragement throughout my doctoral adventure, but without the idea that I could do or be anything in the world instilled in me by my grandmother, Thada Crisp, I would not even have considered this course of action.

Abstract

The Impact of Instructional Coaching on the Self-Efficacy of Beginning Teachers in the Facilitation of Student Learning. White, Shanon, 2017: Dissertation, Gardner-Webb University, Mentoring/Teacher Efficacy/Professional Development/Relationships

This dissertation was designed to examine the impact of instructional coaching on the self-efficacy of beginning teachers in the facilitation of student learning. Beginning teachers are still learning their craft when they enter the teaching profession. Research indicates that schools are losing beginning teachers before they have adequately developed their abilities. Many systems are providing support to beginning teachers through mentoring and instructional coaching. It is essential that schools support beginning teachers as they hone their abilities to facilitate learning in their classrooms. To best meet the needs of beginning teachers, an understanding of best practices for coaching needs to be developed.

This case study utilized the mixed-methods approach to collect and analyze data to advance an understanding of how instructional coaching impacts the facilitation of learning for beginning teachers. In order to gather data to determine the impact of instructional coaching, the following data collection tools were utilized: teacher surveys, focus groups, and individual teacher interviews. Quantitative data gathered from survey responses were analyzed using descriptive statistics, primarily frequency distributions, mean scores, and percent positive by item, element, and construct; the researcher also chose to cross tabulate specific items to better understand correlations. Qualitative data were gathered from individual interviews and compared to find areas of convergence.

The data suggest that beginning teachers perceive that working with instructional coach mentors has a positive impact on their own self-efficacy. Additionally, beginning teacher responses indicated that more time with their coaches would be helpful, but more focused time with their coaches would also be of benefit. The findings can be used by districts to assess and inform their own mentoring and induction programs.

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Chapter 1: Introduction

School growth depends on the renewal, development, and retention of quality teachers making them key factors in the daily work of a school (Lieberman & Miller, 2014). Quality teachers require development that comes only with time. In order to ensure teachers who can positively impact the work of the school are on the job, it is imperative that we retain teachers in teaching so they can develop into quality teachers. There is a multitude of teaching talent to develop. People working in public education represent a large sector of the national workforce (Ingersoll, 2011, p. 39; Ingersoll & Merrill, 2010; U.S. Bureau of Labor Statistics, 2012; Willhide, 2014).

Teaching is the single largest occupation in the nation, employing more than 3.4 million, which is more than the number of practicing lawyers, physicians, commercial pilots, and architects combined. In the next decade, more than 1.5 million new teachers will be hired into schools and classrooms—and that's a conservative estimate. (DeMonte, 2015, p. 4)

New positions in the education field have been outpacing student enrollment for nearly 3 decades (Ingersoll & Merrill, 2010, p. 16). Furthermore, the number of new teacher hires in public schools is projected to increase 32% between 2011 and 2023 (Hussar & Bailey, 2016, p. 12). As the education workforce continues to grow, the age distribution has shifted. In 2011, 22% of the teaching force was under age 30, which is double the figure from 2005. At the same time, the number of teachers at the retirement end of the spectrum is declining. In 2005, 42% of teachers were retirement age; while in 2011, it was only 31%. Not only is the age distribution shifting, but the experience level of teachers is shifting as well. Teachers with more than 25 years of experience dropped from 27% in 2005 to 17% in 2011; simultaneously, teachers with 5 or fewer years of

experience grew from 18% in 2005 to 26% in 2011 (Feistritzer, Griffin, & Linnajarvi, 2011, p. x). In 2009, which is the most recent data available in the North Carolina Public School Statistical Profile, 3.6% of the North Carolina teaching force, or 6,550 teachers, had no prior teaching experience in classrooms; local education agencies (LEAs) across the state ranged from a high of 12.6% of their teaching force with no experience to a low of 1.5% (Public Schools of North Carolina, 2009).

The turnover rates for beginning teachers are troubling, especially because workers in the education field make up so much of the national labor market (Ronfeldt, Loeb, & Wyckoff, 2013). First-year turnover rates rose from 21.4% in 1988 to 28.5% in 2004 (Ingersoll & Merrill, 2010, p. 19). By 2005, data showed that about half of all new teachers remained in the profession more than 5 years; in Perda's (2013) studies, 54.5% of early and delayed entrants into the teaching field had left education as a career within 5 years and 32.9% of all entrants into the field had left teaching within 2 years (p. 83). "By 2008, the most common teacher was not a gray-haired veteran; he or she was a beginner in the first year of teaching. By that year, a quarter of the teaching force had five years of experience or fewer" (Ingersoll, 2012, p. 49). Recent longitudinal studies show that teacher attrition is closer to 17% within 4 years, nearer to attrition rates for other comparable fields (Barth, Dillon, Hull, & Holland Higgins, 2016, p. 4); however, the "number of teaching positions exploded over the past couple of decades. Between 1988 and 2008, the number of teachers rose by 1.3 million far outpacing the increase in student enrollment during that same time period" (Barth et al., 2016, p. 4). While evidence no longer supports a national teacher shortage crisis, the evidence does show shortages in specific locales, subject areas, and specific types of schools (Aragon, 2016, p. 5). We know that student achievement benefits from teacher experience (DeMonte, 2015, p. 12).

In addition to filling shortages, policymakers need to work to retain teachers in the profession to avoid shortages in the first place. Policymakers have tools to address the needs cited by teachers as most important to teacher retention; they can make good induction and mentoring programs part of the fabric of all American schools during any legislative session.

Stakeholders are aware of the shortages. At one point, the perceived shortage of teachers did “not lie in the numbers of teachers available; we produce many more qualified teachers than we hire” (Darling-Hammond, 2003; Ingersoll, 2007; Ingersoll & May, 2011). Current enrollment in teacher preparation programs is down dramatically from an enrollment of 719,081 in 2008 to an enrollment of 465,536 in 2013; enrollments in traditional and alternative programs declined by 30 percent between 2010 and 2014” (Aragon, 2016; Barth et al., 2016, p. 3). Furthermore, “between one quarter and one half” of the students who graduate from a teacher education program do not teach (Barth et al., 2016, p. 3). Long-term trends tell us that teacher production has grown steadily since 1985. Still, demand is higher than supply. “Since the early 1990s, the annual outflow from teaching has surpassed the annual influx by increasingly large margins” (Darling-Hammond & Sykes, 2003, p. 14). Current data show about 8% of teachers, overall, are leaving the profession annually, compared to 5% or 6% 20 years ago (Barth et al., 2016, p. 4). Part of the problem is attributed to the fact that “preemployment teacher preparation is rarely sufficient to provide all of the knowledge and skill necessary to successful teaching, and that a significant portion can be acquired only while on the job” (Ingersoll & Strong, 2011, p. 202). While entering the classroom still in need of practical skills, beginning teachers are immediately held to the same standards as their veteran colleagues. “Effective 2013-2014, beginning teachers must be rated ‘Proficient’

on all five North Carolina Professional Teaching Standards on the most recent Teacher Summary Rating Form in order to be eligible for the Standard Professional 2 License” (McREL, 2015, p. 19). Without adequate support in gaining the on-the-job training necessary for proficiency on evaluation and feelings of success in teaching, many beginning teachers choose to leave the profession. Induction, mentoring, and coaching programs fill this void by supporting novice teachers as they hone the craft of teaching; mentoring helps improve teaching performance and, thereby, helps retain teachers in the profession (Ingersoll & Strong, 2011, p. 203).

Even though intuition dictates and research supports the need for new teacher support, in a time of ongoing resource decline, programs designed to support and retain new teachers are being eliminated from state-level budgets. Although 27 states require induction programs, only three states dedicate funding at the state level to maintain them (Goldrick, Osta, Barlin, & Burn, 2012, p. 23). Because of the need for support of the less-experienced teachers in the field, induction and mentoring programs are seen as necessary, are often required, but are not important enough to fund. This inherent need continues to grow larger because of the upsurge in hiring educators new to the profession.

Statement of the Problem

A major concern in the field of public education is the failure to retain teachers beyond the first few years of employment. Although college students receive training for the teaching profession throughout their college courses, the realities of teaching are often more intense than any college groundwork could prepare novices for, especially considering that on the evaluative stage, beginning teachers are expected to meet the same standards as veterans immediately upon entering the profession (Cochran-Smith et al., 2015, p. 111; National Association of State Boards of Education, 2011, p. 27).

Beginning teachers need additional support to reconcile college preparation with “rubber hits the road” expectations and realities (Darling-Hammond, 2012, p. 9; Zeichner & Bier, 2012, p. 155). Induction programs which include a mentoring component are designed to provide this support. Some school districts choose to meet the mentoring components through instructional coaching so that novice and veteran teachers alike receive needed supports (Darling-Hammond, 2012, p. 9). The problem is that beginning teachers do not always get the level of support they need through these programs and that instructional coaches are not always equipped to provide support on the levels adequate for every beginning teacher (Cochran-Smith et al., 2015, p. 113). If beginning teachers do not feel like they have the skills and aptitudes to reach the professional teaching standards on which they are evaluated, they may not remain in the profession. If instructional coaches are unable to foster these feelings of self-efficacy in beginning teachers, beginning teachers will continue to leave the profession.

Many studies have shown a significant negative correlation between turnover and student achievement (Ronfeldt et al., 2013). Turnover of teachers, novice and veteran alike, has a disruptive influence on the entire organization, negatively impacting student achievement as well as having a negative impact on teachers who choose to stay at the school (Boyd, Grossman, Lankford, Loeb, & Wyckoff, 2008; Ronfeldt et al., 2013, p. 7). Schools and systems are searching for ways to combat the loss of beginning teachers. Supply of new teachers does not appear to be the issue as the nation produces more teachers than are annually hired (Darling-Hammond, 2003, p. 7; Ingersoll, 2011, p. 38). Although we produce an ample supply of teachers, only a portion of the graduates actually enters the teaching profession. Results from a 5-year longitudinal study of 2007-2008 bachelor degree recipients showed that of degree recipients who had not taught but

had prepared for or considered teaching, only 13.8% even applied for a teaching position by 2012 (Staklis & Bentz, 2016, p. 11). Many of the teachers who do enter teaching do not endure in the profession long enough to be considered continuing, not beginning, teachers.

School systems across the nation are looking for a way to address the rising attrition rate of beginning teachers. The validation of this point comes from the fact that studies show anywhere from 17% up to 50% of teachers leave the profession within their first 5 years of service (Aragon, 2016; Ingersoll, 2011; Ingersoll & Smith, 2003; Ingersoll & Strong, 2011; Inman & Marlow, 2004). As a result, most states have implemented some form of induction, mentoring, or coaching program for their beginning teachers. Coaching programs benefit not only beginning teachers but veteran teachers as well (Darling-Hammond, 2012). Coaching programs, though, are only as good as the talents, knowledge, and dispositions of the coaches employed (Cochran-Smith et al., 2015, p. 113). School systems need to identify characteristics of effective coaches that increase the self-efficacy of those coached; systems also need to devise ways to cultivate these coaching characteristics.

North Carolina Beginning Teacher Support Program

North Carolina initially implemented new teacher mentoring in the 1980s. The Policies on the Beginning Teacher Support Program, Policy ID TCP-A-004 was most recently updated in April 2016; the policy was first adopted in 1998. In 2009, the North Carolina Department of Public Instruction and the North Carolina Professional Teaching Standards Commission created the North Carolina Mentor Task Force to recommend revisions to mentor program standards. In addition to updating program standards, mentor standards were aligned with the state's Professional Teaching Standards to

address demonstration of leadership, establishing a respectful environment for a diverse population of students, content knowledge, facilitating student learning, and reflecting on practice. The resulting Policies on the Beginning Teacher Support Program delineates induction requirements for all North Carolina teachers with fewer than 3 years of teaching experience. All new teachers are required to participate in “a three year induction period with formal orientation, mentor support, observations and evaluation” (North Carolina State Board of Education, 2016, p. 1). This policy requires all LEAs to provide a comprehensive program for beginning teachers that meets Beginning Teacher Support Program Standards but allows each LEA to create a program specific to their needs as long as it also meets the program standards.

Purpose of the Study

The purpose of this study was to examine the impact of instructional coaching on the perceived self-efficacy of beginning teachers, especially in the constructs of Standard 4 (Facilitation of Learning) of the North Carolina Professional Teaching Standards. Mentoring, which is a very specific form of instructional coaching, is a fundamental component of beginning teacher induction programs. “Teachers are more likely to change their teaching practices and improve student learning in the presence of effective peers” such as their mentors (Haynes, 2014, p. 5). Teachers are also more likely to persevere in the teaching profession if they feel a sense of efficacy. “A number of studies have found that well-designed mentoring programs raise retention rates for new teachers by improving their attitudes, feelings of efficacy, and instructional skills” (Darling-Hammond, 2003, p. 11). Retention of high-quality teachers is directly related to student performance (Fallon, 2004; Gagnon & Mattingly, 2015). Effective schools, those successful at demonstrating student achievement, have specific characteristics such as

collegiality, coherence, and community; the lack of these characteristics, which is linked to being an ineffective school, is prominent in schools with high turnover (Gagnon & Mattingly, 2015). In a 2010 study of Michigan schools, “schools with high proportions of inexperienced teachers (those with provisional licenses) were less likely to pass AYP” (Keesler & Schneider, 2010, p. 5). New teachers require time to maximize their teaching quality; “effective teaching usually requires time and experience” (Gagnon & Mattingly, 2015, p. 227). Time and experience are the only ways new teachers will achieve or exceed proficiency in all aspects of teaching, especially the facilitation of learning for their students. Given the heavy costs of teacher attrition and the continuing need for high-quality teachers, every effort should be made to fully implement induction components required in beginning teacher support program guidelines in an effort to retain new teachers as well as develop veteran teachers who serve as mentors.

Conceptual Overview

An understanding of theories of constructivism serve as one footing for this study. Constructivism is a learning theory based on the notion that learners actively build knowledge, playing an active instead of passive role in their own understanding and knowledge-building (Rasmussen & Salkind, 2008, p. 182). Jean Piaget’s notions of knowledge development serve as a foundation to this theory; he believed that learners naturally seek to understand and that they attain more complex levels of knowledge as they cognitively develop the ability to understand at more complex levels (Ornstein & Levine, 1989, pp. 147-149; Rasmussen & Salkind, 2008, p. 798). John Dewey’s work adds the social aspect to knowledge construction; learners want to understand their environment, so learning is intrinsically linked to context or setting (Ornstein & Levine, 1989, pp. 138-141). “Dewey favors ‘the guide on the side’ approach. The assumption

here is that a student can create meaning only by working in his or her own experiential workspace” and the teacher’s role is to nudge and direct that work (Rasmussen & Salkind, 2008, p. 183). Further, Vygotsky asserted that “Learners are believed to be enculturated into their learning community and appropriate knowledge, based on their existent understanding, through their interaction with the immediate learning environment. Learning is thus considered to be a largely situation-specific and context-bound activity” (Liu & Matthews, 2005, p. 388).

Closely related to constructivism is the social constructivist worldview.

According to Creswell (2009),

Social constructivists hold assumptions that individuals seek understanding of the world in which they live and work. Individuals develop subjective meanings of their experiences-meanings directed toward certain objects or things. These meanings are varied and multiple, leading the researcher to look for the complexity of views rather than narrowing meanings into a few categories or ideas. (p. 8)

In both of these approaches, the learner develops subjective meanings of their encounters that are “negotiated both socially and historically” by the context in which the learner exists (Creswell, 2003, p. 8). Self-efficacy is likewise centered on the idea of learner control, that learners shape their own actions based on their beliefs in their abilities which are contingent on learner experiences of success (Viel-Ruma, Houchins, Jolivette, & Benson, 2010, p. 226).

This feeling of success and belief in one’s abilities is linked to teacher self-efficacy, which is “defined as teachers’ perceptions of their ability to affect student outcomes” (Kelm & McIntosh, 2012, p. 137). Part of the social cognition theory, general

self-efficacy is the belief that each one of us has the ability and responsibility to make individual change; that we shape our own actions through our beliefs, decisions, and actions (Viel-Ruma et al., 2010, p. 226). Mentoring helps support the development of teacher self-efficacy by facilitating the construction of meaning “through individual and social processes” (Lind, 2007, p. 4) during individual and collaborative examination of current teaching practice and new ideas;

[c]ollaborative conversations allow adult learners to critically explore meaning within the context of their own knowledge and understandings. Through dialogue, individuals can contribute to group understanding by sharing lived experiences. Collaborative conversations help learners situate new knowledge within the framework of personal experiences and facilitate questions that lead adults to examine their core beliefs and the traditions of their profession. (Lind, 2007, p. 4)

Teacher efficacy is coupled with teaching effectiveness. Studies have detailed the influence of teacher self-efficacy beliefs on student achievement and school success (Tournaki & Podell, 2005). Teachers’ perceived teaching skills seem to have a direct impact on teaching practices (Chacon, 2005, p. 257).

Teachers with a high sense of teaching efficacy believe that difficult students can be teachable if the teacher puts extra effort. Conversely, teachers with a low sense of teaching efficacy believe that there is little they can do to teach unmotivated students because students’ success depends on the external environment. (Chacon, 2005, p. 258)

Research into teacher self-efficacy supports two distinct types of teacher perceived self-efficacy. Personal Teaching Efficacy is a teacher’s belief that he or she, through their

own talents, can influence student learning. General Teaching Efficacy is the belief that the teaching profession is a way to impact student change (Chacon, 2005, p. 258).

“Efficacy beliefs influence teachers’ persistence when things do not go smoothly and their resilience in the face of setbacks” (Tschannen-Moran & Woolfolk Hoy, 2001, p. 783). If educational systems are going to maintain the human capital investments made in beginning teachers, mentoring and coaching need to positively affect self-efficacy of beginning teachers so they will persist in the profession. Mentoring and coaching are vehicles that will strengthen this belief.

An understanding of the bases of social power serves as a final footing for this study. Hersey, Blanchard, and Johnson (2001) defined power as a potential for influence; “the resource that enables a leader to gain compliance or commitment from others” (p. 204). French and Raven (1959) originally defined social influence as a change in the belief, attitude, or behavior of a target resulting from the action or presence of an influencing agent (p. 260). French and Raven defined five common bases of power: reward, coercive, legitimate, referent, and expert. Reward power is based on the ability to offer reward, to provide things that people would like to have in exchange for an action (French & Raven, 1959, p. 263; Hersey et al., 2001, p. 211). Coercive power is related to reward power; but instead of receiving something for an action, an action results from the attempt to avoid a consequence (French & Raven, 1959, p. 263). Coercive power can be eroded by failing to follow through with the promised consequence (Hersey et al., 2001, p. 210). Legitimate power is derived from a position or title held, based on the perception that it is appropriate for someone in that position to make certain decisions (French & Raven, 1959, p. 264; Hersey et al., 2001, p. 211). Referent power is based on personal traits and the degree to which followers desire to be associated or identified with

the holder of referent power (French & Raven, 1959, pp. 266-267; Hersey et al., 2001, p. 212). Expert power varies with the extent of knowledge held (French & Raven, 1959, p. 267). It is the perception that the leader has knowledge, experience, and expertise relevant to the situation (Hersey et al., 2001, p. 212). Later research added information power, which is based on supposed access to data but not necessarily the knowledge of how to use the data (Hersey et al., 2001, p. 212).

Etzioni (1965) identified two types of power inherent in organizations, position and personal power (p. 691). Etzioni asserted that power, or the ability to influence behavior, was derived from formal position within an organization, from personal influence, or both (Hersey et al., 2001, p. 206). Position power is tied to formal position within the group and is impermanent. Personal power “is the extent to which people are willing to follow” (Hersey et al., 2001, p. 206) and is granted informally from followers; it is “the cohesiveness, commitment, and rapport between leaders and followers” (Hersey et al., 2001, p. 207).

In a discussion of research related to the consultant/consultee relationship of teachers and school psychologists, Erchul, Raven, and Ray (2001) stated that success depends in large part on the consultant’s ability to influence others; discussed in the framework of the theory of social power, the consultant’s ability to influence others is his or her basis of power. Erchul et al. identify expert and referent powers as most beneficial in consultant situations; mentoring and instructional coaching would resemble the relationship between a consultant and a consultee. When an instructional coach is viewed as an expert by the teachers he or she is coaching, teachers are likely to feel confidence in the coach’s abilities and be more likely to participate in the partnership. A coach with referent power can influence beliefs, attitudes, and behaviors of teachers in the coaching

relationships (Erchul et al., 2001, p. 2); therefore, when teachers perceive referent power in an instructional coach, feelings of self-efficacy are enhanced because teachers are more likely to be influenced by the coach.

Setting of the Study

The target system for this research is a rural district in western North Carolina employing fewer than 900 teachers who serve nearly 13,000 students. This system has opted to use full-time instructional coaches to serve as mentors to all initially licensed teachers in the county system as part of their Beginning Teacher Support Program; these coaches simultaneously serve veteran teachers. In this system, instructional coaches are assigned to schools to support the instructional program in the schools and to support teacher instructional practices; coaches typically serve two schools in the system simultaneously.

Research Question

The following question provided the focus for this study: “What is the impact of instructional coaches on beginning teacher self-efficacy in the facilitation of learning?”

Definition of Terms

Beginning teacher. Any teacher new to the profession with 4 or fewer years of experience as a teacher.

First-year teacher. A teacher in his or her first year of practice with zero prior years of experience in the profession.

Second-year teacher. A teacher in his or her second year of practice with 1 prior year of experience in the profession.

Third-year teacher. A teacher in his or her third year of practice with 2 prior years of experience in the profession.

Fourth-year teacher. A teacher in his or her fourth year of practice with 3 prior years of experience in the profession.

Initially licensed teacher. A teacher practicing the profession on an independent basis in North Carolina who has 0, 1, or 2 years of experience in the profession; these teachers are required to participate in a Beginning Teacher Support Program each year they are an initially licensed teacher.

Instructional vouching. Job-embedded professional development in which a designated instructional coach uses research-based practices to work with classroom teachers on improving instruction and student achievement, promoting teacher growth through a variety of methods chosen based on teacher needs.

Summary

The research included in Chapter 1 serves to provide a context, a framework, and background information to define the issues of instructional coaching and mentoring, beginning teacher issues, efficacy, and the facilitation of student learning. The research suggests that retaining teachers in education is directly related to student achievement and that retention is related to teacher efficacy which can be strengthened through effective professional development provided by instructional coaches and mentors. Chapter 1 also provides a concise look at the North Carolina Beginning Teacher Support Program that guides support of teachers new to the field through mentoring and coaching. Chapter 2 provides an in-depth review of literature related to these themes and its primary focus is to connect instructional coaching to development of teacher efficacy, student achievement, retention, and facilitation of student learning.

Chapter 2: Literature Review

Introduction

There is an abundance of literature related to beginning teachers, teacher retention, and programs designed to address those needs and problems. Some of the research focuses on issues specific to the first few years of teaching, while other research looks at how teachers at all stages can be supported and how that support affects teacher beliefs and student achievement. Another area of interest is professional development, what we know, what we need, and various models such as mentoring and instructional coaching.

History of Induction and Mentoring as Educational Reform

The idea of learning in a professional setting under the supervision of a person already practicing in the field is certainly not a new one and has existed in various structures over time (Strong, 2009). Children in the Middle Ages were apprenticed to master craftsmen in specific trades to receive training in the chosen craft or trade. Today, internships, both paid and unpaid, offer a formal opportunity to learn about a field “from the inside” and to make connections with mentors already working in a chosen profession. Mentors may be formally assigned or could informally coalesce between a veteran in a job and a new hire (Strong, 2009); however, induction and mentoring as an educational reform grew out of broader reform movements of the 20th century.

From Horace Mann’s sweeping impact on who schools serve and how schools do business to John Dewey’s influence on the scope of American education, reform is part of the fabric of American education. “Every reform effort contributes to the overall development and continuous improvement of the educational system,” even as one wave of reform evolves into another (Bybee, 1997, p. 6). By the 1980s, reformers were again

raising a cry for change in American schools.

Modern educational induction has its roots in the 1960s. James Conant made several suggestions in a 1963 report, including giving new teachers assistance in gathering instructional materials, advice of veteran educators, reducing the workload of experienced teachers to enable them to work with new teachers, and focused training on features of the specific school setting (Feiman-Nemser, 2012, p. 10). Shortly after, Robert Schaeffer voiced the concern that teachers were still learning after leaving preparation courses and while beginning their journeys to becoming seasoned educators (Feiman-Nemser, 2012, p. 10). This marked the beginning of the recognition that teachers needed support in transitioning into teaching and that they were not finished products but works in progress.

In *A Summary of Reports on Education*, the authors stated that 1983 was “the Year of the Report on Education. Hardly a month has passed without the release of a major report by a prestigious group of citizens concerned about the state of American education” (Education Commission of the States, 1983, p. 1). “Describing the erosion of American educational foundations as a ‘rising tide of mediocrity,’ the Nation at Risk report is often credited with jump-starting” the subsequent waves of educational reform (Miller, 2000, para. 1). The flurry of educational reports highlighted many challenges in education but also recognized that these declines could be reversed through reform efforts (Vinovskis, 1999).

Since 1983, the states have generated more rules and regulations about all aspects of education than in the previous 20 years. Nationwide, more than 700 state statutes affecting some aspect of the teaching profession were enacted between 1984 and 1986. (Timar & Kirp, 1989, p. 506)

The reform efforts of the 1980s and 1990s focused on implementing reforms at the state and local level as opposed to relying on federal legislation or mandates (Miller, 2000).

As a result of the reform initiatives of the time, national education goals were crafted, with Goal 4 specifically centered on teaching quality:

By the year 2000, the Nation's teaching force will have access to programs for the continued improvement of their professional skills and the opportunity to acquire the knowledge and skills needed to instruct and prepare all American students for the next century.

Objectives:

All teachers will have access to preservice teacher education and continuing professional development activities that will provide such teachers with the knowledge and skills needed to teach to an increasingly diverse student population with a variety of educational, social, and health needs.

All teachers will have continuing opportunities to acquire additional knowledge and skills needed to teach challenging subject matter and to use emerging new methods, forms of assessment, and technologies.

States and school districts will create integrated strategies to attract, recruit, prepare, retrain, and support the continued professional development of teachers, administrators, and other educators, so that there is a highly talented work force of professional educators to teach challenging subject matter.

Partnerships will be established, whenever possible, among local educational agencies, institutions of higher education, parents, and local

labor, business, and professional associations to provide and support programs for the professional development of educators. (National Education Goals Panel, 1994, Goal 4).

As one strategy to achieve this goal, “attention to the induction needs of beginning teachers is an area where the country has made considerable progress” (Darling-Hammond, Wei, Andree, Richardson, & Orphanos, 2009, p. 24). A second wave of reform efforts surfaced in the late 1980s and moved the attention from experienced teachers to beginning teachers (Furtwengler, 1995, p. 2). “Since the mid-1980s, induction and mentoring programs have become familiar features on the educational landscape” (Feiman-Nemser, 2012, p. 12).

Requirements for Induction and Mentoring Programs

Requirements for teacher induction and mentoring programs as well as participation in the programs have increased steadily over the last 25 years. In 2008, 74% of beginning teachers reported participating in an induction program (Wei, Darling-Hammond, Adamson, 2010, p. 28).

After decades of assuming that teachers teach alone and get better only through their own individual trial and error, there is increasing commitment to the idea that all teachers are more effective when they can learn from and be supported by a strong community of colleagues. (Hargreaves & Fullan, 2000, p. 52)

As a result of the various reform initiatives, heightened interest in beginning teacher programs was evident in the 1980s (Furtwengler, 1995). “Prior to 1984, only eight states had initiated policy for beginning teacher programs. Information obtained from the states indicated that 26 other states initiated such programs during the years 1984 through 1992” (Furtwengler, 1995, p. 3). Of the 34 states with programs, 18 of

them required statewide programs. Reforms in the area of beginning teacher support were broadly successful. “Data from this study revealed that only five beginning teacher programs were rescinded and not replaced, while beginning teacher programs became successful policy in 29 states” (Furtwengler, 1995, p. 3). According to data from five nationwide program surveys spanning 10 years from 1986 to 1996, only six states (Florida, Georgia, Kentucky, Missouri, North Carolina, and Washington) consistently demonstrated the presence of beginning teacher programs with at least partial funding (Robinson, 1998, pp. 18-21).

Financial support behind induction and mentoring programs has not remained as consistently successful. From a reported 34 states with mandated statewide programs in 1992, only 15 states required and funded mentoring or induction by the 2003-2004 school year (Edwards, 2004; Fallon, 2004). In the same timeframe, however, Janice Hall’s research “found slightly higher levels of statewide teacher induction in 2004: 33 states reported mandated new-teacher mentoring programs and 22 reported state funding for those programs” (Fulton, Yoon, & Lee, 2005, p. 6). This survey also found that 23 states required mentor training, “which was a nearly 25% increase in beginning teacher programs since a 1998 American Federation of Teachers survey” (Fulton et al., 2005, p. 6). Hall recognized, though, that funding was an impediment to these programs continuing successfully:

there were ten states that told me that they were looking to cut back on their funding and were afraid of the negative impact that would follow. All were trying to find ways that they could . . . come up with creative ideas to continue their programs. (Portner, 2005, p. 214)

A 2012 New Teacher Center publication maintained that 27 states required novice

teachers to participate in some kind of induction and mentoring program but many for only 1 year, with at least 10 more states mentioning new teacher induction in state policy but as an optional program left up to school districts individually (Goldrick et al., 2012, p. 2).

Induction and Mentoring in North Carolina

North Carolina mandated a statewide beginning teacher program in 1985, one of 18 states to do so (Strong, 2009, p. 7). The 1985 North Carolina program consisted of providing a mentor and support team which provided guidance and assimilation as well as assistance with a Professional Development Plan and three observations during the first year; it was a 2-year program, culminating in a continuing certificate at the end of the second year. When reviewed in 1991, “participants rated the program worthwhile” (Furtwengler, 1995, p. 15).

As a result of the 1997 Excellent Schools Act, beginning in 1998, all initially licensed teachers in North Carolina were required to participate in a 3-year induction period including formal orientation, a paid mentor for the first 2 years, and evaluation prior to attaining continuing licensure (North Carolina General Assembly, 2009, p. 1). Each LEA was responsible for developing its own program for beginning teachers based on the requirements set out by the state.

The North Carolina Mentor Task Force was created in 2008 to evaluate policies and programs in use and to advise on needed revisions to mentor standards, accountability, and support as well as the use of mentor funding during and subsequent to the 2009-2010 school year (North Carolina State Board of Education, 2009). Presently, programs in all North Carolina LEAs must include formal orientation, mentor support from trained mentors, formal observations, and evaluation.

The Task Force made several recommendations based on its review that resulted in board policy changes. Changes to Beginning Teacher Support Program standards were suggested and outlined to better align with North Carolina Professional Teaching Standards and best practices in new teacher support. The Task Force also suggested and outlined changes in standards for mentors. Five standards were proposed as an update to the 10 mentor standards approved in 2004; the new standards align directly with the North Carolina Professional Teaching Standards and “focus on what knowledge, skills, and dispositions beginning teachers need and clearly articulate how mentors can help teachers attain them” (North Carolina State Board of Education, 2009, p. 14). The Task Force also noted that based on feedback from the Teacher Working Conditions Survey, Beginning Teacher Support Programs and mentor support in the various LEAs were neither consistent nor systematic.

The vision for the North Carolina Beginning Teacher Support Program is for each school district in the state to provide a “quality induction program to support the instructional growth of beginning teachers” (North Carolina State Board of Education, 2010, p. 19). Standards were developed, approved, and adopted to guide the state’s various LEA programs in meeting needs of those new to the education profession.

Five program standards were outlined for Beginning Teacher Support Programs. Standard 1 addresses systematic high quality induction program support, requiring systems to create an institutional plan which indicated commitment from the system as well as principal engagement. Standards 2 and 3 specifically deal with the mentor portion of the induction program. Standard 2 requires a process for mentor selection that adhered to mentor criteria as well as roles and responsibilities and training. Standard 3 makes provisions for mentors to have time to focus on the varied duties of mentoring.

Standard 4 addresses professional development of beginning teachers to support their growth as measured by the North Carolina Professional Teaching Standards and the North Carolina Teacher Evaluation System. Standard 5 requires formative assessment of both beginning teachers and the mentoring programs implemented.

Five mentor standards were outlined as part of North Carolina State Board policy as well. Standard 1 directs mentors to support beginning teachers in leadership roles by cultivating trusting relationships and promoting leadership through coaching and collaboration. Standard 2 addresses helping beginning teachers create a respectful environment for diverse populations through supportive and inviting relationships with students and parents as well as the greater school and community. Standards 3 and 4 shift the focus to content and instruction. Mentors support beginning teachers in building a strong knowledge of the North Carolina Standard Course of Study in addition to 21st century goals; then mentors assist beginning teachers honing assessment skills to measure student learning in content and skills. Standard 5 synthesizes the other standards in reflective practice. Mentors assist beginning teachers in reflecting to understand and improve their instruction and professional practice.

In 2010, North Carolina created a policy manual on the Beginning Teacher Support Program, enumerating requirements for the induction and mentoring program. This policy coincided with the last year mentor pay was funded in the state budget (North Carolina Department of Public Instruction, Information Analysis, Division of School Business, 2010, p. 6). In the 2009 North Carolina Mentor Task Force Draft Report, the task force suggested the use of “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” (North Carolina State Board of

Education, 2009, p. 4). Title II, Part A, funds are aimed at increasing student achievement by investing in teacher quality through recruiting and retaining highly qualified teachers, partly through providing professional development activities; these funds often pay for mentors and instructional coaches as part of highly effective professional development (Academic Improvement and Teacher Quality Programs: Office of Elementary and Secondary Education, 2006). The 2010 policy built on previous recommendations. Optimum working conditions for beginning teachers are recommended, including assignment of a mentor in the licensure area and in close proximity (North Carolina State Board of Education, 2016, p. 2). Standards for mentors were included in the policy as well as recommendations for mentor training and program standards for Beginning Teacher Support Programs in the various LEAs. Five program standards were outlined.

Standard 1: Systematic Support for High Quality Induction Programs.

Standard 2: Mentor Selection, Development, and Support.

Standard 3: Mentoring for Instructional Excellence.

Standard 4: Beginning Teacher Professional Development.

Standard 5: Formative Assessment of Candidates and Programs.

The required components of Program Standard 1 include an institutional plan, institutional commitment and support, and principal engagement. This program standard states,

Stakeholders foster a climate that values the support of beginning teachers through mentoring and induction and promote conditions for high quality mentoring and induction by evaluating, designing, and revising related policy and practices. Stakeholders support ongoing program improvement and

accountability through multiple processes including data analysis and program review. (North Carolina State Board of Education, Educator Recruitment and Development Division, 2010, p. 21)

The LEA board-approved plan must follow State Board Policy and outline responsibilities and procedures of all stakeholders involved in the plan. Commitment is evident through policies and practices aligned with state program standards with designated leadership for oversight of the program. That leadership includes individual principals who ensure positive working conditions and support of the mentor role (North Carolina State Board of Education, Educator Recruitment and Development Division, 2010, p. 21).

Program Standard 2 governs mentor selection, development, and support. Mentor selection criteria are communicated by program leadership, and selection is transparent and uniform. Mentors are provided ongoing training to advance knowledge and skills in addition to initial training in mentoring. The role of the mentor as spelled out in this program standard includes guiding the beginning teacher in improving instruction and learning as well as providing ongoing logistical and emotional support and encouragement (North Carolina State Board of Education, Educator Recruitment and Development Division, 2010, p. 22).

Program Standard 3 zeroes in on the instructional function of mentoring recognizing that “effective mentor-beginning teacher interactions and relationships are at the core of a successful mentoring and induction program” (North Carolina State Board of Education, Educator Recruitment and Development Division, 2010, p. 23).

Program, district and site leadership collaborate to ensure that sufficient time is provided for mentors to meet with their beginning teachers to engage in the

improvement of teaching and learning and induction-related activities both during and outside of school time. (North Carolina State Board of Education, Educator Recruitment and Development Division, 2010, p. 23)

Key features of this program standard are time, instructional focus, and issues of diversity. Time is necessary for mentors to work with beginning teachers both during and outside of the school day in order to strengthen the instructional focus of the mentoring relationship. Mentors are expected to use the North Carolina Professional Teaching Standards as outlined in the North Carolina Teacher Evaluation System to “guide, refine and deepen their work with beginning teachers across the full range of teaching practices” by making classroom observations in support of the development of good teaching practices (North Carolina State Board of Education, Educator Recruitment and Development Division, 2010, p. 23). Mentors are also charged with helping beginning teachers appreciate diversity and meet the diverse learning needs of all students.

Program Standard 4 has only one key feature, professional development for beginning teachers. This professional development is targeted at needs of teachers new to the profession. On the school level, a school handbook is provided which delineates school policy and procedures as well as a structured orientation to each beginning teacher’s specific school assignment. Throughout the year, the system provides district-wide professional development aligned with the North Carolina Professional Teaching Standards and the North Carolina Teacher Evaluation System tailored to the unique and specific needs of beginning teachers.

Program Standard 5 requires assessment of a formative nature for beginning teachers and the program itself.

The North Carolina Mentoring and Induction Program Standards form the basis on which individual mentoring and induction programs are assessed. District mentor program leaders and stakeholders partner to design a reliable infrastructure to support the collection, analysis and use of standards-based data to promote continuous high quality program improvement. All stakeholders work together to mediate challenges to program improvement and to advance positive impacts and successes of mentoring and induction programs. (North Carolina State Board of Education, Educator Recruitment and Development Division, 2010, p. 25)

Mentors work with beginning teachers to gather data on classroom practice and student performance to guide the instructional support provided through the program, both of which are embedded in Standard 4, Teachers Facilitate Learning for their Students, of the North Carolina Professional Teaching Standards. Although a specific timeframe of program evaluation is not specified in the program standard, it does require data collection as well as analysis for program improvement.

In addition to five program standards, five mentor standards were also included.

Standard 1: Mentors support beginning teachers to demonstrate leadership.

Standard 2: Mentors support beginning teachers to establish a respectful environment for a diverse population of students.

Standard 3: Mentors support beginning teachers to know the content they teach.

Standard 4: Mentors support beginning teachers to facilitate learning for their students.

Standard 5: Mentors support beginning teachers to reflect on their practice.

These standards, which mirror North Carolina Professional Teaching Standards, are

intended to capture the habits and dispositions that govern effective service in the role of mentor. Attributes of good mentors include teaching optimism, listening skills, reflective dialogue, commitment to continuous learning and development, knowledge of fluid instructional methods to meet the needs of individual students, a collaborative nature, and the ability to understand and use data.

Mentor Standard 1 identifies mentors as leaders training leaders. Mentors are expected to cultivate a confidential relationship with beginning teachers based on trust and coaching. This relationship is built on and depends on communication and collaboration. This relationship is also built on an understanding, demonstration of ethical and professional standards; mentors are also expected to help beginning teachers become familiar with those standards. Mentors are expected to help beginning teachers become familiar with those standards. Mentors are expected to make beginning teachers aware of leadership opportunities and to encourage and support them in engaging in leadership at both the school and district levels. Mentors are expected to understand best practices and to model them for beginning teachers as well as help them implement best practices. Finally, mentors are the designated advocate for beginning teachers as they navigate their first years in the profession, coaching them on methods of advocacy for themselves and students as well as helping to advocate for the resources and conditions most beneficial to the success of beginning teachers, collectively and individually.

Mentor Standard 2 governs how mentors help teachers build respectful relationships and environments for a diverse population. Mentors help beginning teachers build relationships with students as well as their families in the context of the school and the greater community by creating classrooms built to foster learning. Mentors accomplish these goals through providing communication strategies and methods to use with students and families; helping beginning teachers understand the

school and community context in which they work; and supporting effective classroom management and instructional strategies in beginning teachers' practice.

Mentor Standard 3 is focused on content. Mentors understand the North Carolina Standard Course of Study and help beginning teachers become knowledgeable in specific content as well as implementation of content goals and 21st century goals embedded in the content. Mentors also ensure that resources are available to implement the curriculum.

Mentor Standard 4 broadens the focus from content in Standard 3 to instructional practice. Mentors collaborate with and support beginning teachers in planning, implementation, and assessment to improve instruction and student learning. Mentors help beginning teachers understand, implement, and analyze results from required student assessments. This standard also requires mentors to confirm that beginning teachers are fully aware of licensure requirements and professional practice.

Mentor Standard 5 is about creating reflective practitioners. Mentors meet with beginning teachers regularly and assist them with individual needs. Mentors help beginning teachers self-identify individual needs through reflection and coaching. This process is supported through mentor observations and data collection in the classrooms of beginning teachers (North Carolina State Board of Education, Educator Recruitment and Development Division, 2010, p. 11).

These standards, both program and mentor specific, are aimed at creating “a quality induction program to support the instructional growth of beginning teachers” in all North Carolina school districts and are related to the North Carolina Professional Teaching Standards (North Carolina State Board of Education, Educator Recruitment and Development Division, 2010, p. 19). Through this program and the support of mentors,

beginning teachers should gain an understanding of and talent for implementing the 21st century standards, professional teachings standards, and content standards integral to the teaching profession (North Carolina State Board of Education, Educator Recruitment and Development Division, 2010).

Starting with the 2010-2011 fiscal year, there was no allotment in the North Carolina Public Schools budget for mentor pay, a reduction from the \$9,181,802 allotment in the preceding year's budget, which itself was an 18% cut from the previous budget; this allotment has not been reinstated in the state budget (North Carolina Department of Public Instruction, Information Analysis, Division of School Business, 2010, p. 6). The North Carolina Mentor Task Force suggested that "LEAs 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" (North Carolina State Board of Education, 2009, p. 4).

Since funding sources changed, school districts across the state have chosen different avenues to create, implement, and maintain the required Beginning Teacher Support Program. When state funding was provided, the common approach was to train and assign veteran teachers as mentors to new teachers in each school building. Subsequent to the loss of dedicated state funding and the suggestions put forth from the Task Force, programs across the state have evolved in response to state requirements, teacher needs, best practices, and resource availability. Some school districts have chosen to center mentor responsibilities in full-time positions that are freed from other classroom duties. Current state policy requires "a three year induction period with a formal orientation, mentor support, observations and evaluation" (North Carolina State

Board of Education, 2010, p. 1). Local school systems are responsible for mentor selection, training, and support. All components of local beginning teacher support programs must comply with Beginning Teacher Support Program Standards as dictated in state board policy.

Models of Induction Programs

“Induction happens with or without a formal program, and it is often an abrupt and lonely process” (Feiman-Nemser, 2001, p. 1030). Formal induction programs have become much more common in recent years. Induction as temporary support is an approach that helps new teachers ease into teaching without being isolated (Feiman-Nemser, 2012, p. 12). Although earlier recommendations for support of new teachers included reduced workloads for both the new teacher and assigned mentor and shifting more challenging student and course loads to more experienced teachers, these supports rarely manifest on the front lines (Feiman-Nemser, 2012, p. 13). The most popular approach for mentoring is an informal buddy system (Feiman-Nemser, 2012; Goldrick et al., 2012). Mentors in this role have no reason to see themselves as more than buddies and are available when called on but do not advise in a sustained manner. Some mentors in this role offer technical advice and emotional support but, again, on an as needed basis. These mentor/buddies are not engaged in ongoing training for the role. This informal approach is often seen as temporary and “when mentoring means little more than occasional check-ins or informal chats, it is not likely to influence instruction, let alone student learning” (Feiman-Nemser, 2012, p. 13).

Induction as individualized professional development identifies the reality that new teachers are still learning and need targeted, sustained professional development. In this model, training and support are individualized to meet the needs of teachers new to

the profession. This training is still paired with an assigned mentor, but that mentor assumes a role of “cothinkers and coplanners, helping new teachers reframe challenges, design and modify instruction and assessments, and analyze and promote student learning” (Feiman-Nemser, 2012, p. 13).

Induction as cultural transformation is evident in schools with “a professional teaching community and school culture that supports the ongoing learning of all teachers” (Feiman-Nemser, 2012, p. 14). This model can only exist in specific schools with a very strong culture; it requires “a fundamental shift from teaching as an independent practice to teaching as an interdependent practice” (Feiman-Nemser, 2012, p. 14). This model centers around collaboration and collegiality of all educators in the building, including teachers new to the building. This environment benefits neophytes and veterans alike, giving everyone support and the opportunity to grow.

History of Instructional Coaching

Professional development for teachers provided in a traditional manner was mostly delivered through single occasion events with little follow-up offered (Joyce & Showers, 1982). Typically, a professional development session involves gathering people together in a single physical location where a presenter communicates information about a given topic which is in some way supportive of school district priorities, initiatives, or needs. No follow-up support is provided and there is rarely a measurement of the skills presented in the session (Carlisle & Berebitsky, 2011). This format of professional development does not result in lasting improvement in the quality of teaching (Killion, Harrison, Bryan, & Clifton, 2012).

Not only was this type of professional development ineffective, it often left teachers dissatisfied and rarely had a positive impact on student learning (Guskey, 2000).

In the Joyce and Showers (1982) study, only 10% of the teachers who received the typical 1-day delivery of professional development truly employed the new knowledge in their instructional delivery.

Traditional approaches of professional development seek to cultivate either knowledge development or development of instructional skills but offer no acknowledgement of the specific and diverse teachers present or school settings from which they come (Walpole & McKenna, 2012, p. 186). Traditional approaches do not provide teachers with the chance to participate in extended learning opportunities or dynamic collaborative populations (Killion et al., 2012, p. 172). Administrators and teachers need a different type of high-quality professional development to increase student achievement (DeMonte, 2013).

Change, improvement, and reform in educational organizations, however, are dependent on professional development (Tournaki, Lyublinskaya, & Carolan, 2011, p. 299). With every change in legislation that affects education (i.e., No Child Left Behind [NCLB], Elementary and Secondary Education Act [ESEA] of 1965, Every Student Succeeds Act [ESSA] of 2015), school reforms reemphasize quality of professional development. Since traditional professional development methods have been shown to have serious issues, coaching, which had been employed in athletics and the business world, entered the realm of professional development as a different approach (Flaherty, 2005). The goal of coaching, in whatever field it is utilized, is to improve work by using peers who are skilled in the field (Flaherty, 2005).

Instructional coaching emerged in the early 1980s to provide ongoing support to teachers within a community of practice, building enduring development structures fixed on instruction and curriculum (Poglinco et al., 2003, p. 1). Instructional coaching can

also be termed job-embedded professional development as it is implanted in the school and the classroom and is viewed as effective by researchers. “Real-time, side-by-side support is infinitely more effective than drop-in or drive-by professional learning that offers no opportunity for collaboration and collective problem solving” (Eisenberg & Medrich, 2013, p. 48).

Instructional Coaching

Education professionals “know that central to school improvement is changing the behavior of teachers in order to alter the way they deliver instruction to students” (DeMonte, 2013, p. 5). Effective in-service experiences, the kinds that impact teacher behaviors, are both intensive and extensive and depart from the traditional professional development model. Significant gains in student achievement are associated with professional development approaches that focus on deepening content knowledge and practice, are a coherent part of the particular school’s improvement efforts, are collegial and authentic in nature, and “are supported by coaching, modeling, observations, and feedback” (Darling-Hammond et al., 2016, p. 37). These programs offer support early in implementation at the school site, involve regular observation and feedback, engage teachers interactively working to reflect on and discuss practice, and include elements of choice (Walpole & McKenna, 2012, p. 186). Instructional coaching is a professional development approach that can offer these components.

If coaching is longer in duration, if teachers collaborate around what they learn from coaching, if they get to observe instruction and then talk about the observation with a coach, then it is more likely to be effective. This feature hinges on the expertise of the coach to do this work. If the coach is not an expert in teaching teachers, then it is unlikely that coaching will be effective. (DeMonte,

2013, p. 8)

Currently, teachers in the United States are engaged in classroom instruction about 80% of their total working time, leaving about 20% of their time to collaborate with peers; other nations dedicate about 40% of teacher time to planning together and other collaborative practices (Killion et al., 2012, p. 173). “Teachers typically need close to 50 hours of learning in a given area to improve their skills and their students’ learning” (Killion et al., 2012, p. 173). “Having a person available to work directly with educators in their own classrooms by providing a bridge between newly learned information and effective, sustained classroom implementation is being seen as one way to offer effective professional development services” (Denton & Hasbrouck, 2009, p. 151).

A 2010 study provided evidence that instructional coaching improves student learning; after 3 years of implementation, coaching was shown to contribute to a considerable increase in student gains while a 2009 study linked student achievement to teachers engaged in collaborative activities (National Institute for Excellence in Teaching, 2012, p. 2). “Simply put, if teachers participate in high quality professional development opportunities, they will be more likely to positively affect student achievement” (Tournaki et al., 2011, p. 300). According to Miller (2003), writing in a policy brief for the McREL, the author of the North Carolina Teacher Evaluation Rubric, “one mark of an effective teacher is the ability to use an array of research-based instructional strategies” such as those developed working with an instructional coach (p. 2).

As stated in a 1996 study, if professional development introduces instructional changes that can affect achievement, teachers involved in coaching practiced new skills more frequently and more appropriately compared to teachers who did not work with a

coach (Showers & Joyce, 1996). Research suggests that student achievement is linked to changes in instruction that are closest to what was suggested in the research; ongoing work with a coach helps ensure the fidelity of instructional changes (Knight, 2007, p. 26). By incorporating research-based instructional strategies into current classroom practice, which working with a coach facilitates, teachers can help students increase their understanding and bolster their proficiency.

Guskey (2002) explored the link between professional development and changes in instructional practices. Teachers want to increase their abilities so they can boost their effectiveness with students and see professional development experiences as a way to do this; they hope to gain specific, concrete, practical, and applicable ideas related to daily classroom operations or needs. Guskey (2002) discovered that teacher efficacy based on successful implementation effects changes in student outcomes. Traditional professional development designs are incorrect in the assumption that purely the knowledge gained will change teacher behavior. Guskey (2002) asserted that teacher behavior changes after successful experiences of implementing the skills or knowledge learned. “They believe it works because they have seen it work, and that experience shapes their attitudes and beliefs” (Guskey, 2002, p. 383). Meaningful professional development entails teacher engagement as well as collaborative reflection that is germane to teacher work with students (Darling-Hammond & McLaughlin, 1995, p. 77).

Instructional coaching is the process of collaborative work between educators, one of whom provides support and expertise, focused on teacher performance during instruction to positively affect student achievement through learning new and improving current skills. It is a form of professional development that is ongoing, individualized, and embedded in classroom teaching (Kowal & Steiner, 2007; Teemant, Wink, & Tyra,

2011; White, Howell Smith, Kunz, & Nugent, 2015). Instructional coaching is a direct response to traditional workshop professional development defined earlier. Coaching provides opportunities to address all aspects of effective professional development as posited by Darling-Hammond and McLaughlin in 1995:

experiential, grounded in inquiry and reflection, collaborative and interactive, connected to teachers' work with students, sustained and intensive, and connected to other aspects of school change. Ideally, coaching meets all these criteria and differentiates support to match teachers' previous training and experience.

(Deussen, Coskie, Robinson, & Autio, 2007, p. 5)

Furthermore, when coaches are based in school contexts, their support can be responsive to the needs of individual teachers and the needs of the overall instructional program in a school (Walpole & McKenna, 2012, p. 189).

Coaching matters for participants. Through coaching, professional development is personalized to each teacher's learning and understanding as well as his or her current state of practice (Killion et al., 2012, p. 8). Although very beneficial for the participant teachers, the goal of coaching in educational settings is improvement in student learning. This is achieved through improvement of teacher practice (Killion et al., 2012, p. 14).

Instructional Coach Roles and Characteristics

Coaches often simultaneously fill many different roles within their coaching assignment. Challenge coaching uses coaches to support teachers in tackling continuing instructional problems (Killion et al., 2012, p. 18). Facilitative coaching is used when the educator is capable of whatever skill is needed but needs support in identifying and constructing appropriate solutions and plans of action (Psencik, 2011, p. 119). In collegial or peer coaching, coaches, or other teachers, work as peers to strengthen

collaborative skills and instructional practices and are often focused on a new area of learning; this form of coaching serves as a nonevaluative way to advance expertise with the learning (Killion et al., 2012, p.18). Instructional coaches interact with teachers on all aspects of instruction including preparation and planning, assessment, learning facilitation, and differentiation to meet student needs (Killion et al., 2012, p.18). Coaches who serve as generalists instead of content-specific supports work with teachers to improve instructional practices instead of discipline specific areas and are more effective when they show expertise in content standards, how students learn, as well as in academic content (Killion et al., 2012, p. 81). “Although instructional coaches consult, collaborate, and reflect, their primary responsibility is to reflect with teachers and provide nonjudgmental support” (Killion et al., 2012, p.40). When working with educators new to their jobs, coaches engage mentoring functions. As a mentor, coaches build capacity and avoid building dependence. In this role, coaches must acknowledge and respect the skills teachers bring to the job while working to strengthen talents or develop new skills pertinent to job function. Coaches often engage modeling, planning, next-stop thinking, and questioning in this role (Psencik, 2011, p. 118). A coach might utilize personal mastery approaches when the teacher exhibits personal beliefs that stand in the way of their skills and abilities; in this approach, a coach has to avoid working as a counselor (Psencik, 2011, p. 120).

Distinct responsibilities accompany the many roles of an instructional coach. Coaches share and help procure resources for teachers to use in or that impact classroom instruction. Coaches often aggregate and disaggregate data for teachers to draw on when evaluating or planning classroom instruction. Coaches are expected to provide a level of expertise on instructional methods and effective teaching strategies as well as content and

curricula. Coaches also provide practical classroom support in co-teaching and assisting with classroom activities, modeling lessons, observing, or giving feedback. Coaches also facilitate learning for and among building educators. Often, coaches serve as mentors to novice teachers, acting as role models and advising on instructional practice and curriculum, procedures, policies, and practices. When coaches serve as mentors, they are able to integrate instead of isolate new teachers in the professional learning of the school (Killion et al., 2012).

Characteristics of Effective Instructional Coaches

Coaching effectiveness incorporates many different skills and traits. Effective coaches have and continue to develop self-awareness, self-regulation, self-motivation, social awareness, and social skills; all components of high levels of emotional intelligence (Psencik, 2011, p. 71). Good coaches are also honest, sincere, competent, and reliable (Psencik, 2011, p. 89). Coaches spend time building good relationships with teachers they serve. They work to create partnership understandings, build capacity for teacher leadership, explain services they can offer, work with teachers to identify needs and choose methods of support, and encourage feedback while managing resistance and conflict (Killion et al., 2012, p. 116). Good coaches believe that others are capable of learning and growing as educators (Killion et al., 2012, p. 29, 125). Effective coaches tend to be solution centered instead of problem centered (Psencik, 2011, p. 100). Support offered by coaches should be practical and applicable to the daily work with children in classrooms (Walpole & McKenna, 2012, p. 190). Effective coaches have expertise in content and curriculum, subject-specific content and pedagogy, general student-centered pedagogy, and building relationships through interpersonal skills.

Coaches with content and curriculum expertise have a thorough understanding of

the content they are coaching as well as curriculum and models on which he or she is coaching teachers. “It seems to make sense that a teacher’s ability to implement a new form of instruction would be no greater than a coach’s ability to effectively model that form of instruction” (Bach & Supovitz, 2003, p. 9). The depth of knowledge a coach has with an instructional model or specific curriculum is central to how teachers will implement it in the classroom (Penuel, Fishman, Yamaguchi, & Gallagher, 2007). In order to affect teacher implementation of research-based curriculum, a clear understanding of the curriculum authors’ objective separated from one’s own perceptions about the curriculum is necessary. Without a full awareness of the intent, school-based personnel may make decisions more in line with established practices rather than what the research says (Guskey & Yoon, 2009, p. 496).

“Effective instructional coaches, no matter their subject area, have a thorough understanding of the subject they are coaching as well as familiarity with the curriculum that teachers are currently using” (Kowal & Steiner, 2007, p. 4). Instructional coaches need to be familiar with the subject they are coaching as well as with what resources or programs teachers are using to teach that content in their classrooms. “Helping teachers examine their curriculum and instruction or engaging them in assessment and analysis of classroom data requires a coach’s deep and current knowledge of the content area” (Coskie, Robinson, Riddle, Buly, & Egawa, 2005, p. 61). Coaches cannot support classroom teachers without personal knowledge of a range of successful instructional techniques and materials that can be utilized at the levels at which they coach teachers. Instructional coaches need experience in growth and learning acquisition of students so they can support teachers in planning and instructional approaches appropriate to subject and grade level (Feger, Woleck, & Hickman, 2004; International Reading Association,

2004).

Effective coaches are experienced teachers who were successful in the classroom. “To lead, coaches need to understand how children learn, including a deep knowledge of the tasks, questioning strategies, and classroom structures that can help students develop ideas” (Feger et al., 2004, p. 16). Instructional coaches need credibility with their teachers; prior classroom success and experience make them credible. Furthermore, prior experience and success give coaches a background in child development and learning, in addition to instructional and other classroom strategies helpful in developing student knowledge. Moreover, while in the classroom, coaches must have implemented the approaches they are recommending so they can identify potential problems and ways to resolve them (Dole, 2004, p. 469). Coaches who were successful teachers “have a larger toolbox of instructional strategies to draw upon; according to teacher surveys, they also are more likely to earn teachers’ trust” (Kowal & Steiner, 2007, p. 4).

Effective coaches have good interpersonal and communication skills. Instructional coaches need to be able to hear teacher issues by listening to what they say and what they do not say. Coaches need to observe what is happening in classrooms and be able to formulate and communicate feedback on what is observed in a respectful manner that fosters collaboration (Coskie et al., 2005, p. 60; Feger et al., 2004).

Coaches have to serve many different stakeholders including teachers, administrators, and district-level staff. Over and above duties to different stakeholders, coaches also serve as a liaison between them; they may have to “advocate for teachers while also working with administrators to move forward with specific goals and to create a learning community in the school as a whole” (Feger et al., 2004, p. 16). “In a 2003 survey of 31 professional development coaches, the most frequently mentioned

characteristic of an effective coach was ‘people skills,’ including the ability to build relationships, establish trust and credibility, and tailor assistance to individual educators’ needs” (Kowal & Steiner, 2007, p. 4). Instructional coaches have to build relationships with teachers in which they can identify and convey all the skills teachers bring to their craft balanced with nudging teachers past their comfort zones to build new skills or strengthen existing ones. Coaches must become partners and be able to “develop open, trusting relationships with teachers in order to serve effectively in a coaching role” (International Reading Association, 2004, p. 4). These relationships acknowledge dilemmas and fears and seek opportunities for celebrations. “Coaches themselves ranked interpersonal capabilities higher in importance than content and pedagogical knowledge; they believed they could improve their content expertise through training but people skills would be more difficult to acquire” (Kowal & Steiner, 2007, p. 4).

Characteristics of Beginning Teachers

A different type of teacher is entering today’s schools with different expectations. Younger teachers, members of Generation Y or the Nexters, expect collaboration and teamwork and look forward to taking on a variety of responsibilities and experiences (Coggshall, Ott, Behrstock, & Lasagna, 2010; Johnson, 2000); “teachers, especially those just entering the profession, are generally collaboratively oriented people” (Scherer, 2012, p. 23). Generalizations about this generation are numerous and will change the nature of the teaching force. Nexters are self-reliant, taking responsibility for their own success; family-oriented; mobile; hopeful; and dependent on media, using it to “do homework, listen to music, watch television, and communicate” simultaneously (Clausing, Kurtz, Prendeville, & Walt, 2003, p. 374). This group is also more global because of the technology available to them to explore and communicate, albeit virtually.

Nexters value a team approach and collective action over competition, being collaborative and supportive of one another (Clausing et al., 2003, p. 374). This generation grew up with an entertainment orientation, having been led to believe that education is “supposed to be entertaining, easy, and fun” (Taylor, 2005, p. 100). Nexters are adaptable due to their exposure to so many lifestyles and choices through the media to which they have been exposed since birth (Taylor, 2005). These generalities change the way education is delivered but also affect those who deliver it.

In addition to teachers entering the career workforce for the first time since college are the teachers who find alternative pathways into teaching. “There is considerable evidence that many well-educated individuals would like to teach, if they were not required to pay for and attend conventional teacher education programs” (Johnson, 2000, p. 2). If we consider the teacher-shortage that seems to be ever present, “it seems certain that schools will hire many teachers who have minimal training and no more than provisional licenses” (Johnson, 2000, p. 2). Some states have already turned to hiring teachers with varying degrees of preparation. Beginning teachers are entering the field at a range of points in their professional careers. Beginning teachers have diverse expectations of how a career is defined as well as levels of commitment to any employment. Mid-career professionals as well as adults who have been given the opportunity to further their education because of a changing business environment are finding their ways into teaching with extensive life experiences but “lack knowledge about and experience with students, curriculum, pedagogy, and the daily routines of schools” (Johnson & Kardos, 2002, p. 14).

Whether coming from a “strong clinical experience connected to coursework” or “alternative certification programs that have only a summer component, which includes

both coursework and practice teaching,” beginning teachers share many of the same needs and challenges and benefit from the same strong support that induction and mentoring can offer (Johnson & Kardos, 2002, p. 14; Scherer, 2012, p. 18).

Needs, Challenges, and Concerns of Beginning Teachers

According to studies conducted by the Public Education Network at PEN-designated sites, beginning teachers who graduated from a teacher preparation program surveyed felt most prepared in understanding their students, content knowledge, assessment instruments, and collegial planning. They felt least prepared to deal with special populations (such as exceptional students or English language learners), to work with parents, or to assume leadership roles. “A large percentage of teachers do not feel well prepared when they first start teaching” (Public Education Network, 2003, p. 8). Teachers who entered the profession through alternative certifications noted the greater disadvantage they felt because they did not have practical classroom experiences sufficient to prepare them for the responsibility of their own classes.

Responses to the MetLife Survey of the American Teacher report of 2004-2005 showed that involving families in the education of children and dealing with parents was the biggest challenge cited by new teachers. Additionally, beginning teachers reported difficulty getting administrative support, support of other teachers, and resources they needed for their classrooms as challenges. Dealing with discipline and classroom management and the selection of teaching materials were other issues cited by many new teachers (Markow & Martin, 2005, p. 12).

The challenges faced by our least experienced teachers are exacerbated when beginning teachers are given the most difficult assignments. “Teaching is hard work for everyone, and beginners struggle even in optimal settings” (Patterson, 2005, p. 21).

Although predominately unintentional, the least desirable preps, classrooms, and students are often assigned to the least prepared to deal with such challenges – the beginning teachers (Patterson, 2005, p. 22). Veteran teachers seem to graduate to, or earn, better courses, better teaching situations, even better parking spaces, leaving the most difficult circumstances to those least prepared to deal successfully with them. “The early years of teaching are undeniably a time of intense learning, and they are often a time of intense loneliness” (Feiman-Nemser, 2012, p. 10).

A common theme of beginning teachers is the fact that there is always more to learn. “We misrepresent the process of learning to teach when we consider new teachers as finished products, when we assume that they mostly need to refine existing skills, or when we treat their learning needs as signs of deficiency in their preparation” (Feiman-Nemser, 2003, p. 26). Although the North Carolina Teacher Evaluation Rubric and process is built around the North Carolina Professional Teaching Standards that serve as a basis for teacher preparation programs, there are many skills to learn that are never covered in a teacher preparation curriculum. Teachers need to know how to transition and adapt, think on their feet, quickly assess situations or understand how to mitigate them until they can be better dealt with later, and know what personnel resources are available as well as how and when to use them; all of this in addition to reviewing the impact of their lessons and educational choices and using what they learn to inform planning for new teaching (Feiman-Nemser, 2003). The Beginning Teacher Support Program and mentors serve as a bridge from preparation to implementation and refinement of these skill sets as teachers begin practicing their craft.

Self-Efficacy and Teacher Efficacy

Albert Bandura is widely acknowledged as the founder of the theory of self-

efficacy (Elliott, Isaacs, & Chugani, 2010; Garvis, Twigg, & Pendergast, 2011; Johnson, 2010; Wolf, 2011). Self-efficacy is an individual's level of certainty that one has the skills to successfully achieve expected outcomes; even if a person believes that a particular choice will result in desired or known outcomes, if he or she does not have the confidence that he or she has the required skills, that choice will not be attempted (Bandura, 1977, p. 193). The general concept of self-efficacy is applicable specifically to teachers. Teacher self-efficacy is centered on a teacher's belief in his or her capacity to positively influence student learning (Bruce & Ross, 2008, p. 348). Teacher efficacy was developed from Rotter's (1966) work on locus of control and Bandura's (1977) self-efficacy theory (Tschannen-Moran, Woolfolk Hoy, & Hoy, 1998).

Teacher efficacy was conceptualized in a pair of RAND corporation studies in the 1970s. One study showed a strong relationship between teacher efficacy and standardized reading test scores; the second explored the impact of teacher efficacy on innovative practice (Ashton, Buhr, & Crocker, 1984, p. 30). In their 2013 study, Holzberger, Phillip, and Kunter confirmed that "teachers with higher self-efficacy beliefs showed higher instructional quality, as indicated by the three dimensions of cognitive activation, classroom management, and individual learning support" (p. 782). A teacher's belief in his or her abilities to successfully teach are also related to higher commitment to the job and increased likelihood in remaining in the profession (Garvis et al., 2011, p. 37). Teachers who feel that they have the abilities to affect student achievement invest more time in the job, are more likely to try innovative teaching methods, have better classroom management, and meet a wider range of student needs (Bruce & Ross, 2008; Caprara, Barbaranelli, Steca, & Malone, 2006; Holzberger et al., 2013; Tschannen-Moran et al., 1998). Cheung (2008) asserted, "There is no doubt that

teacher efficacy is a very important factor for the improvement of education in every part of the world” (p. 103).

Effective teaching is correlated closely with high teacher efficacy (Swackhamer, Koellner, Basile, & Kimbrough, 2009). In Bandura’s (1997) model, personal efficacy is based on performance accomplishments, or mastery experiences; vicarious experiences; verbal persuasion; and physiological, or emotional, states (p. 195). Mastery experiences are essentially successful events that result from one’s choices and actions. “Successes raise mastery expectations; repeated failures lower them, particularly if the mishaps occur early in the course of events” (Bandura, 1977, p. 195). Once efficacy is fixed, negative impact of eventual failures is reduced; further, later failures can reinforce efficacy if one “finds through experience that even the most difficult obstacles can be mastered by sustained effort persists through the experience” (Bandura, 1977, p. 195). Vicarious experiences are another factor of efficacy. One benefits from seeing intimidating activities accomplished by others successfully and without negative consequences; when others do it, one has an expectation that they, too, can be successful in similar situations. Verbal persuasion is unambiguous; “people are led, through suggestion, into believing they can cope successfully with what has overwhelmed them in the past” (Bandura, 1977, p. 198). Emotional, or physiological, state “refers to an individual interpreting his or her somatic symptoms such as stress, anxiety, fear, and fatigue in order to initiate a specific course of action” (Bembenutty, 2006, p. 6).

People regularly over and underestimate their actual abilities, so self-efficacy is not commensurate with a particular level of competence, just a belief in one’s competence (Tschannen et al., 1998, p. 211). Furthermore, self-efficacy is not a static concept; Holzberger et al.’s (2013) research demonstrated that teacher efficacy was

related to present influences and levels of perceived successes and would ebb and flow over time (p. 783). The central finding of Coladarci's (1992) study "was that personal and general efficacy were the two strongest predictors of commitment to teaching" (p. 334). To enhance efficacy, teachers must believe that what they do can affect the education of their students; they must also believe that they have both the capacity and the power to make decisions affecting their role and what students produce (Enderlin-Lampe, 2002, p. 142).

A belief in one's abilities to do a job is a critical component in sticking with any job in any profession (Futernick, 2007). As a teacher, efficacy is indispensable in effecting student achievement (Tschannen-Moran et al., 1998). "Teacher efficacy as a belief is expected to guide teachers in their behaviors, decisions, and motivation with regard to teaching" (Fives, 2003, p. 22). During the first few years, beginning teachers need the opportunity to be successful so they can build a sense of efficacy in the profession; many studies "have found that well designed mentoring programs improve retention rates for new teachers along with their attitudes, feelings of efficacy, and instructional skills" (Darling-Hammond, 2010, p. 24). "Finally, teachers are more likely to stay in schools where they feel they can succeed. In this regard, research stresses the importance of professional supports . . . that promote trust, motivation, commitment and collective efficacy" (Darling-Hammond & Sykes, 2003, p. 36). Therefore, the ongoing support of an instructional coach is something that potentially benefits beginning and veteran teachers.

Research shows that professional development directly influences a teacher's sense of efficacy, hence creating professional development methods that include support for efficacy growth is essential (McLaughlin & Berman, 1977; Scribner, 1998). Teachers

are more likely to implement and commit to new strategies when they feel confident in their own abilities (Smylie, 1988). Working with a coach to understand, implement, and then evaluate their own work with new strategies allows the teacher to experience success with the new skills and enhances personal and general teaching efficacy (Shidler, 2009). Instructional coaching and teacher efficacy are cyclically related. Coaching can develop and advance feelings of efficacy and teachers “who believe they will make a difference are more likely to see coaching as an opportunity to expand and consolidate their teaching techniques” (Ross, 1992, p. 52). Research shows that close, consistent modeling, as instructional coaching can provide, increased teacher reported levels of efficacy (Tschannen-Moran et al., 1998).

Learning and Innovation Skills (4 Cs)

The North Carolina Professional Teaching Standards were created based on consideration of “what teachers need to know and be able to do in 21st century schools” (North Carolina Department of Public Instruction, Educator Effectiveness Division, 2013, p. 2). Each of the standards “include(s) the skills and knowledge needed for 21st century teaching and learning” (North Carolina Department of Public Instruction, Educator Effectiveness Division, 2013, p. 2). In addition to specific strands pertinent to pedagogy, Standard 4: Teachers Facilitate Learning for Their Students is visibly aligned to the Learning and Innovation Skills referred to as the 4 Cs in the P21 Framework for 21st Century Learning, specifically communication, critical thinking, collaboration, and creativity (Partnership for 21st Century Skills, 2015).

Communication

Communication is the multi-faceted concept of sharing information with others. As defined by McCroskey and McCroskey (1986), it is the “adequate ability to pass

along or give information; the ability to make known by talking or writing” (p. 1). Bodie, Powers, and Fitch-Hauser (2006) stated that since communication involves competencies in speaking, listening, writing, and critical thinking, it is inherently a social skill relating us individually to each other and to the larger society (p. 119). The P21 Framework for 21st Century Skills (2015)

emphasizes effectively using oral, written, and nonverbal communication skills for multiple purposes (e.g., to inform, instruct, motivate, persuade, and share ideas); effective listening; using technology to communicate; and being able to evaluate the effectiveness of communication efforts—all within diverse contexts. (Dilley, Fishlock, & Plucker, 2015, p. 1)

Communication is pertinent to Element 4d (teachers integrate and utilize technology in their instruction) and Element 4c (teachers use a variety of instructional methods). In Element 4d, communication is explicitly listed as a function of the integration of technology, and communication technology is specifically delineated as part of a range of instructional methods to meet student needs in Element 4c (North Carolina Department of Public Instruction, Educator Effectiveness Division, 2013). According to the Partnership for 21st Century Skills (2015), communicating clearly includes using communication across a range of purposes which comprises informing, instructing, motivating, and persuading (p. 4). Furthermore, the Partnership states that communication should utilize multiple media and technologies; be effective in diverse, even multi-lingual, environments; and that students should effectively articulate thoughts across all communication media and should accept as effectively as they share information by listening to decipher meaning – both stated and inferred – and by judging impact and effectiveness of communications.

Communication is, however, the essence of Element 4g (teachers communicate effectively; North Carolina Department of Public Instruction, Educator Effectiveness Division, 2013). This standard outlines communication from teachers to students, specifying that teachers should clearly understand through perceptive listening and should be clearly understood by students as well as use a variety of methods to communicate with students. Additionally, the standard specifies that teachers help students “articulate thoughts and ideas clearly and effectively” (North Carolina Department of Public Instruction, Educator Effectiveness Division, 2013, p. 6). The evaluation rubric also includes encouraging, supporting, and giving students opportunities to articulate thoughts and ideas in a clear and effective manner by establishing classroom practices that nurture effective communication skills development (McREL, 2015).

Classroom climate determines levels of and opportunities for communication in the instructional setting and “is an important construct for effective schooling” (Evans, Harvey, Buckley, & Yan, 2009, p. 141). “Research has shown us that teachers’ actions in their classrooms have twice the impact on student achievement as do school policies regarding curriculum, assessment, staff collegiality, and community involvement” (Marzano & Marzano, 2003, p. 6). Positive classroom climates “have been found to be related to important educational outcomes such as enhanced academic achievement, constructive learning processes, and reduced emotional problems” (Evans et al., 2009, p. 132). Results of Anderson, Hamilton, and Hattie’s (2004) study “show that the social environment of classrooms significantly impact students’ motivated behaviour” (p. 219). Many components make up the construct of classroom climate, of which Evans et al. (2009) stated that instructional style and classroom management are the most important (p. 141). In effective classroom climates, teachers carefully plan lessons and

instructional content, including innovative teaching strategies, establish clear classroom procedures and expectations, communicating their importance to students, and take a personal interest in the students (Evans et al., 2009, p. 137). These climates are further rich with opportunities for active participation and engagement (Evans et al., 2009, p. 136). Additionally, positive classroom climates have been shown to help teachers meet the needs of more diverse groups of students; not only culturally diverse but also diverse in learning styles, abilities, needs, and contexts (Evans et al., 2009, p. 135). This research seems to suggest that what adults think about the growth and learning of students affects the classroom climate and, subsequently, how students grow and learn.

If one accepts the possibility that the teacher is the most important component in a classroom, teacher immediacy is another crucial ingredient in building 21st century communication skills (Marzano & Marzano, 2003). Teacher immediacy is the degree of perceived physical psychological closeness between people (Christophel, 1990, p. 325; Mehrabian, 1968). As early as 1990, Richardson's study suggested that positive teacher/student relationships built through teacher immediacy and communication have an impact on student motivation and learning (Richmond, 1990). Richmond, Gorham, and McCroskey (1987) found links between teacher immediacy behaviors and both cognitive and affective learning in students (Frymier, 1994). Teacher immediacy behaviors address all but one of the conditions of motivation as defined in Keller's (1987) ARCS model of motivation: interest, relevance, confidence, and satisfaction. "Initially, an immediate teacher gains students' attention. Immediate teachers move about the classroom, make eye contact, use vocal variety, and call students by name" (Frymier, 1994, p. 141). Linking Keller's theory to Kelley and Gorham's (1988) findings, Frymier (1994) stated, "immediacy arouses students, gets their attention, which enhances

motivation, which in turn increases learning” (p. 141).

Critical Thinking

The definition of critical thinking continues to evolve as we consider it from different perspectives and in different contexts. “Psychologists have begun to flesh out the strategies we use to think in organized ways to analyze and solve problems. This systematic style of thinking is generally referred to as ‘critical thinking’” (Dilley, Kaufman, Kennedy, & Plucker, 2015, p. 1). Bloom’s Taxonomy and, more recently, Bloom’s Revised Taxonomy have been “an essential model for educators interested in critical thinking” since the mid-1950s (Dilley, Kaufman et al., 2015, p. 1). The original taxonomy was hierarchical moving students from basic knowledge through six skills, each more complex. In the new millennium, the taxonomy has been revised with a shift from a hierarchy of skills to a collection of skills that progress and overlap in a more fluid manner (Krathwohl, 2002). Whatever the definition or structure,

considering the definitions, it is possible to come to the conclusion that all definitions of critical thinking emphasize the ability to gather genuine information; find relationships between pieces of information and; find and evaluate various solutions or alternative ways of treating problems. (Gaskaree, Mashhady, & Dousit, 2010, p. 35)

Element 4e (teachers help students develop critical-thinking and problem-solving skills) focuses specifically on the critical thinking component of the 4 Cs. This standard measures the extent to which “teachers encourage students to ask questions, think creatively, develop and test innovative ideas, synthesize knowledge and draw conclusions” as well as how teachers “help students exercise and communicate sound reasoning; understand connections; make complex choices; and frame, analyze, and solve

problems” (North Carolina Department of Public Instruction, Educator Effectiveness Division, 2013, p. 6).

Unfortunately, there is a question of whether critical thinking can actually be taught; “decades of cognitive research point to a disappointing answer: not really” (Willingham, 2008, p. 21). While many believe that the primary function of a post public school education should be the attainment of critical thinking skills, college faculty, although claiming critical thinking was a primary objective in their courses, often could not explain what it was nor were they teaching critical thinking in an evident manner in their courses (Bissell & Lemons, 2006, p. 66; Yuretich, 2004, p. 40). Even though critical thinking and problem-solving skills have been integral to human development from the earliest times, reformers need to be careful moving forward.

If these skills were indeed new, then perhaps we would need a radical overhaul of how we think about content and curriculum. But if the issue is, instead, that schools must be more deliberate about teaching critical thinking, collaboration, and problem solving to all students, then the remedies are more obvious, although still intensely challenging. (Rotherham & Willingham, 2010, p. 10)

Our economy moves inexorably toward a future in which familiar jobs and needed skills are less prevalent or have disappeared completely, and the jobs that replace them require skills and dispositions with which our students are not inherently equipped.

Statistics compiled by the Bureau of Labor Statistics indicate that service sector jobs are replacing manufacturing sector jobs at a rapid pace, and that many career changes might be expected within the lifetime of a person entering the job market today. Rather than specific vocational skills, schools should prepare students capable of adapting and gaining new skills throughout their lifetime. (Bolinger &

Warren, 2007, p. 71)

The increase in the information available to the general population further exacerbates the need for improved thinking skills; the tidal wave of information

has to be selected, interpreted, digested, evaluated, learned, and applied . . . if people cannot think intelligently about the myriad issues that confront them, then they are in danger of having all of the answers but still not knowing what the answers mean. (Halpern, 1998, p. 450)

However, “critical thinking is not an innate ability” (Snyder & Snyder, 2008, p. 92).

Traditional methods of instruction such as lecture or rote memorization, therefore, do not promote critical thinking; likewise, typical assessment methods do not measure critical thinking abilities or progress (Snyder & Snyder, 2008, p. 92). As we change and deepen curriculum standards, we need to be mindful of time available in classrooms to foster critical thinking as well as the teaching knowledge available to do so. “Teachers often are not trained in critical thinking methodology” (Snyder & Snyder, 2008, p. 93); although thinking skills are important in all classes, the focus on content-mastery has resulted in a lack of emphasis on instructors knowing how to teach critical thinking skills (Marin & Halpern, 2011).

No matter the difficulties associated with defining and teaching critical thinking, “the goal of instruction designed to help students become better thinkers is transferability to real-world, out-of-the-classroom situations” (Halpern, 1998, p. 451). Familiar methods of content delivery are not conducive to teaching thinking skills, which creates a singular instructional challenge (Halpern, 1998, p. 451). Development of critical thinking skills requires the teaching of these skills directly and explicitly, both those skills vital for general learning as well as those needed to learn specific disciplines,

across subject matter as well as teaching “how to better apply the thinking skills [students] need to do well in our classes” (Beyer, 2008a, p. 196; Beyer, 2008b, p. 223).

Halpern (1998) offered a four-part model to teaching critical thinking and problem-solving skills which included cultivating a critical thinking attitude, direct instruction and practice with target skills, cross-context structure training, and metacognitive assessment of thinking (p. 451). The critical thinking attitude helps students identify when a skill is needed and the inclination to apply the skill in that situation. “Learners need to understand and be prepared for the effortful nature of critical thinking so they do not abandon the process too soon, believing that the thinking should have been easier or accomplished more quickly” (Halpern, 1998, p. 452). It does not matter what we teach if students do not apply knowledge and skills when needed. Critical thinkers are persistent in problem solving, resist impulsive reactions to problems, are flexible, and engage in self-correction (Halpern, 1998, p. 452). Metacognition is that ongoing self-awareness that leads to self-correction and improvement of thinking and learning as well as reflection that evaluates actions and approaches (Halpern, 1998, p. 454).

There are a number of skills inherent in critical thinking and problem solving. Halpern (1998) identified a taxonomy of critical thinking macroabilities which together, she asserted, “define an organizational rubric for a skills approach to critical thinking” (p. 452): verbal reasoning, argument analysis, hypothesis testing, understandings of likelihood and uncertainty, and decision-making skills. Beyer (2008b) summarized four essential skills needed by the close of the primary grades for students to become effective learners: comparing, classifying, sequencing, and predicting (p. 224). Other skills he summarized as needed “for participating as effective citizens in a democratic society”

were decision making, problem solving, drawing conclusions, interpreting texts, analyzing multiple sources, identifying credibility of sources, identifying cause-and-effect relationships, judging the strength of an argument, distinguishing fact from opinion, detecting bias, and identifying point of view (Beyer, 2008b, p. 224). Beyond these are more skills that are specific to individual disciplines. Many of the skills summarized in previous research are delineated as part of Element 4e (synthesize knowledge, draw conclusions, sound reasoning, understand connections, complex choices, frame, analyze, and solve problems; McREL, 2015, p. 29).

There are many ways to facilitate the direct instruction and development of critical thinking and problem-solving skills. Any strategies used to teach specific skills need to incorporate three key components: mental steps that make up the cognitive routine of a skill, rules that govern the application of the routines, and conditional knowledge that governs the use of the skill (Beyer, 2008a, p. 197). Whatever other strategies are utilized in critical thinking instruction, the clear and precise components of the skills need to be explicitly taught; through this explicit, direct instruction, “we enable our students to become more conscious of how and why they, their peers, and experts actually ‘do’ that skill” (Beyer, 2008a, p. 197).

Elder and Paul (2008) outlined several strategies for critical thinking instruction in a series for the *Journal of Developmental Education*. One critical ingredient to acquiring critical thinking skills is to apply concepts learned to problems and issues in coursework and the wider world. Only through this application will students understand the value of the knowledge and skills which will, in turn, create internal motivation to expand their critical thinking skills (Elder & Paul, 2008). “Self-assessment is an integral part of educated thinking” (Elder & Paul, 2008, p. 32); because reflection and self-

assessment are so important to developing critical thinking skills, it must be part of the structural design on lesson and not left to chance or random use. Students should engage in oral communication as well as assess oral communication, their own and that of others. This can be accomplished through peer teaching and group problem solving (Elder & Paul, 2008, p. 34). Communication is both speaking and listening, so students must assess their listening as well as their speaking. Paul and Elder (2008) suggested unpredictably calling on students to hold them responsible for learning through listening as well as having them write down questions they need answered throughout the lesson, then reviewing those questions to see if they are answered later in the lesson. Finally, Paul and Elder advocated making coursework intensive for students by requiring students to think deeply about the content and shifting ownership of the content from teachers to students (p. 35). A variety of teaching strategies such as debate, Socratic seminar, role play, and research encourage critical thinking development with the intensive work shifted from the teacher to the students involved (Bolinger & Warren, 2007, p. 76; Marin & Halpern, 2011, p. 4).

Classroom lessons should challenge student thinking by introducing conflicting viewpoints, theories, and ways of knowing as well as comparing different systems across different times and cultures (Bolinger & Warren, 2007, p. 72). Students should be required and allowed to critically examine materials as well as analyze, clarify, interpret, and solve problems in interdisciplinary content (Bolinger & Warren, 2007, p. 73). Only through “repeated, systematic instruction directly in the thinking operations or skills by which people apply their thinking” will students transfer thinking skills to other situations and content (Beyer, 2008b, p. 224). Modeling of explicit steps in thinking skills is essential in learning and in transferring the target skills; think-alouds are an excellent

modeling technique as they give students a routine they can imitate (Beyer, 2008a, p. 198; Beyer, 2008b, p. 225). Moving through the learning progression, teachers should scaffold instruction to support students from learning specific critical thinking skills to appropriately applying them to new information and in unfamiliar situations. Types of scaffolding can include procedural checklists that spell out the steps in the thinking procedure and the use of process questions to help students move through the steps in the process through asking instead of telling (Beyer, 2008a, pp. 198-199).

Active learning requires students to actively engage with content with minimal scaffolding or without direct teacher support; “students really do not understand it until they actively do something with it and reflect on the meaning of what they are doing” (Duron, Limbach, & Waugh, 2006, p. 160). When students are engaged in realistic authentic research which includes multiple critical thinking skills such as predicting, constructing, investigating, interpreting, exploring, and applying, they develop their own ideas and understandings of content (Duron et al., 2006, p. 74). Students increase learning and enhance retention when they acquire knowledge through active engagement with the content rather than through passive study (Duron et al., 2006, p. 162). It is important to remember, though, that even when engaged in active learning, teacher questioning has a great impact on student thinking; “to most effectively encourage student participation, teachers must become highly skilled questioners” (Duron et al., 2006, p. 162). Cueing further supports students in their engagement with critical thinking skills as applied to new content; “cues are prompts that remind us of what to say or do without providing the complete action to be taken” (Beyer, 2008a, p. 199).

Active learning culminates in reflection of the learning experience that focuses on what was learned, its value, and the process of the learning (Duron et al., 2006, p. 163).

Good teacher feedback enhances learning and performance more than it reflects a grade; it “has the potential to help students learn how to assess their own performance in the future” and should help students understand feedback criteria and standards (Duron et al., 2006, p. 163). Students need to engage in feedback for themselves and their peers as well. They should reflect on the steps learned for a particular thinking skill individually, with partners, and in a whole-group discussion (Beyer, 2008a, p. 197). “If the child is aware of what is needed to perform effectively, then it is possible for him or her to take steps to meet the demands of a learning situation more adequately” (Baker & Brown, 1984, p. 354). Written reflection, such as a 2-minute paper, gives students the opportunity to list out steps used as well as skills and important content learned; this information can serve to assist the teacher in reflecting on the lesson as well (Duron et al., 2006, p. 163).

Creativity

Because of the very nature of the concept, creativity seems to have no definition and many definitions simultaneously. Creativity has been considered as an individual trait and as an ability (Kuehlwein, 2000, p. 175; Lubart, 1994, p. 290; Ochse, 1990, p. 103; Sternberg & Lubart, 1999, p. 4). No matter the definition, creativity most probably exists on a continuum, and each individual personally exhibits creativity as measured somewhere on that continuum (Beghetto & Kaufman, 2014, p. 66; Kuehlwein, 2000, p. 176). Recent iterations of a definition for creativity have included novelty and usefulness, specifying that both traits are necessary. In 2004, Plucker, Beghetto, and Dow defined creativity as, “the interaction among aptitude, process, and environment by which an individual or group produces a perceptible product that is both novel and useful as defined within a social context” (p. 90). To be creative, an idea must be more than

different or advantageous, it must be both useful and unique; “creativity must represent something new and different . . . [but] there is also an expectation of task appropriateness or usefulness” (Beghetto & Kaufman, 2014, p. 54). Creativity hinges on making links between formerly unrelated things and is concerned with seeing matters from new angles while outlining, reworking, and resolving known topics (Higgins & Reeves, 2006, p. 222). “Helping students develop their capacity to think creatively has long been viewed as one of the best, yet often neglected, ways to prepare students for an uncertain future” (Beghetto & Kaufman, 2014, p. 53).

The North Carolina evaluation standard that most fully utilizes the concept of creativity is Element 4d (teachers integrate and utilize technology in their instruction). Creativity is further nurtured through instructional methods, or Element 4c (teachers use a variety of instructional methods as well as methods of assessment) and Element 4h (teachers use a variety of methods to assess what each student has learned; North Carolina Department of Public Instruction, Educator Effectiveness Division, 2013).

In today’s classroom, technology is an excellent way to allow students to express their learning creatively. In Element 4d, teachers understand available technologies, understand when they are appropriate to use, and help students learn how and when to use the technology options available. An accomplished teacher “integrates technology with instruction to maximize student learning,” while a teacher distinguished in this standard “provides evidence of student engagement in higher level thinking skills” through the use of technology integration; students utilizing the highest levels of thinking skills on Bloom’s Revised Taxonomy are creating or “putting elements together to form a novel, coherent whole or make an original product” through generating, planning, and producing (Krathwohl, 2002, p. 215; McREL, 2015).

Element 4d includes helping students use technology to learn, think critically, problem solve, and recognize reliability, all features of the Critical Thinking component of the 21st century Learning and Innovation Skills, as well as innovate and collaborate. While all of the 21st century skills can be accomplished without reliance on digital tools or through interconnected settings such as the internet, teachers and students can learn and practice these needed skills both in the classroom and beyond it through the deliberate, thoughtful, and appropriate application of technology.

The Partnership for 21st Century Skills (2015) delineates various creative thinking outcomes which include the capacity to elaborate, hone, and analyze ideas, both discovered and generated, to improve efforts, knowledge of idea creation techniques such as brainstorming, and the ability to effectively share ideas with others. In addition to communicating effectively, creative skills also hinge on being open to input and feedback based on perspectives of others; “teachers providing positive feedback on their creativity was the strongest unique predictor of students’ beliefs in their own creativity” (Kaufman & Beghetto, 2009, p. 9). Perhaps the most difficult skill inherent in creativity is the ability to see failure as an opportunity to learn and a natural part of the cyclical process of innovation (Partnership for 21st Century Skills, 2015).

“Teachers who reported using creativity-supportive practices tended to have improvement-focused learning goals, enjoyed creative work, and believed that their teaching went beyond imparting simplistic and factual knowledge” (Beghetto & Kaufman, 2014, p. 59). Methods which support the development and practice of creativity include explicit teaching of creative thinking processes while supporting intrinsic motivation and establishing an environment supportive of creative thinking. In this environment, teachers also provide opportunities for student choice and the use of

imagination while learning and demonstrating knowledge. The development of creative thinking skills is dependent on an atmosphere that supports this kind of practice. The actual physical space of these classrooms should be flexible in order to support a variety of instructional practices and student creativity; teachers should also be open to flexible use of learning spaces inside and outside the school building (Beghetto & Kaufman, 2014, p. 60; Davies et al., 2013, p. 84).

The transformed classroom of the future also needs to be a space that will promote creative and divergent thinking that might also resemble a garage, a high tech coffee house, a shopping Mall or any other setting for collaborative learning that would improve upon the current sterile classrooms with their neat rolls of desks. (Leneway, 2013, p. 6)

Students in school today have not known a world without its proliferation of technology. Technology is integral to almost every aspect of daily life (Russell, Bebell, O'Dwyer, & O'Connor, 2003, p. 304). The role of technology is completely different for the current and future generations of students; information is free and easily available, community is no longer limited by geographic location, and communication is, likewise, unlimited; having relationships with people one has never met is accepted and expected (Kleiman, 2004, p. 251). The rise of technology at one's fingertips has allowed students not only to have an entire world of knowledge at their fingertips but also to create in a myriad of ways for a world-wide audience. In their private lives, these students are far beyond paper and pencil technologies to demonstrate what they know and what they are capable of.

In utilizing creativity-supportive practices, teachers shift from being the solitary supplier of knowledge to a facilitator and partner in a learning journey (Hopson, Simms,

& Knezek, 2001, p. 117). The internet makes knowledge easily accessible wherever a connection is available; knowledge acquisition happens in the classroom, in the courtyard, at home, during school and outside of school, and is no longer dependent on the teacher for distribution. “Teachers need to be able to connect to their students’ digital worlds to engage and motivate a new and very different type of learner” (Larson, Miller, & Ribble, 2010, p. 13). Once teachers connect the digital world to the learning world, learning becomes less teacher and textbook driven. “The environment facilitated the use of cooperative groups and student participation focused on application rather than knowledge acquisition” (Hopson et al., 2001, p. 116). In this setting, control of learning shifts to students, and they are allowed to take risks with their learning (Davies et al., 2013, p. 85). “Researchers believe that technology has the potential for transforming traditional, teacher-centered classrooms into student-centered, collaborative classrooms” (Rice, Wilson, & Bagley, 2001, p. 212). Even with the shift in definition of the teacher’s role, “creativity was felt to be best served by an equal balance between structured and unstructured work,” giving students a chance to learn through various means, both student-centered and teacher-centered, and the most valuable practice included specified direction with choice of response media (Davies et al., 2013, p. 85).

Teachers can and should integrate technology use into all aspects of instruction – lesson planning, knowledge distribution and acquisition, practice, response, and assessment; technology offers countless opportunities for creativity and inventive thinking in pedagogical practices (Kant, 2012, p. 2; Livingston, 2010, p. 60). “The newest generation of K-12 students have neurologically changed their brains to try to keep pace and literately see and learn differently than their parents and grandparents, in that they see and remember visual images in place of text” (Leneway, 2013, p. 2).

Creative processes have inherent risks; “asking questions, sharing ideas, trying new things are risky because of the possibility of undesirable consequences” (Beghetto, 2009, p. 210). These risks are more acceptable to students when they engage in activities that are less related to traditional schooling methods (Beghetto, 2009, p. 211). “The computer is not a restriction to creativity, or even a mere assistant. It should become a partner in the creative process” (Vass, Carroll, & Shaffer, 2002, p. 31). Lessons that evoke and foster creative responses need an element of uniqueness and those with a real-world genuineness seem more worthwhile to students (Davies et al., 2013, p. 85; Lightfoot, 2005, p. 213).

The nature of teaching and learning has been forever changed by technology. Mobile learning technologies have allowed unchecked access to information so learners need to put more emphasis on application of knowledge and less focus on memorization of knowledge (Rossing, Miller, Cecil, & Stamper, 2012, p. 14). There are several strategies that can be employed to support the development of creativity. Idea generation is an important activity as it helps to redefine problems and allows participants to think in different ways while evaluating generating ideas. Collaborative online applications such as GoogleDocs, GoogleSites, Answer Garden, digital bulletin boards, or wikis are a technology-based way to record ideas generated by multiple participants simultaneously; mind-maps, concept maps, and other drawing strategies can be accomplished online as well through GoogleDrawings, Bubbl.us, online annotation tools, digital bulletin boards, and mapping applications embedded in other applications such as Brainpop. When appropriate, students should be allowed to choose venues for finding information as well as for responding to classroom tasks and publishing those responses. Technology offers numerous avenues to demonstrate understanding through creation of products.

Multimedia presentations are an old standard of technology integration, but new applications continue to add variety – Prezi, GoogleSlides, SlideShare, Powerpoint. Video and other visual products can also demonstrate understanding by novel presentation of learned knowledge – Youtube, Vine, Instagram, Voki, VoiceThread. Even more ambitious projects are possible through access to technology – news broadcasts, blogging, participatory media, video gaming, social networks (Beghetto & Kaufman, 2014, p. 65; Halverson & Smith, 2009, p. 53). These are technologies for learners and “allow learners to construct representation” of knowledge and learning (Halverson & Smith, 2009, p. 51). “When empowering young people to be the generators of their own images their voice, option and perspective are highlighted. This way of seeing contributes greatly to reflection of and on learning and teaching” (Lemon, 2014, p. 26).

Technology for learners puts instructional control in the hands of the learner, as discussed in the previous paragraph. Technology for learning is in the hands of the teacher and is structured to measure outcomes and offer assessment of learning (Halverson & Smith, 2009, p. 51). As previously discussed in terms of other professional development, however, teachers must learn how to integrate technology for learners and for learning within the context of their teaching instead of in a setting separate from the classroom in which it may be implemented (Glazer, Hannafin & Song, 2005, p. 57). The key is to construct a visible link between training content and the classroom (Sugar, 2005). When technology is practiced with access to technology-use mentors, it is increasingly implanted in technology-rich lessons through modeling, collaboration, and coaching (Glazer et al., 2005). In order to be fully integrated, technology needs to meet each teacher’s instructional needs in individual instructional settings (Glazer et al., 2005).

Nontraditional technology-based learning products require assessment through nontraditional methods; these individual and group products do not fit as easily into an objective percentage or point-based grade. This will not happen, however, unless teachers are supported in the integration of technology for learners and for learning. Rubrics can be used to make assessment of nontraditional products more objective, and many online tools are available to support the creation and use of rubrics (Dixon, 2010, p. 188). Many online applications (Kahoot, Socrative, Quizizz, goFormative, Pear Deck, Quizlet, etc.) exist to gather both formal and informal data of both a formative and summative nature. The proliferation of data sources allows teachers and other instructional personnel to work collaboratively to evaluate instructional strengths and weaknesses as well as student needs and then to change instruction to better meet student needs. Although formative and summative objective assessment modes do not necessarily support creative thinking, they do help to identify knowledge gaps that may underlay weaknesses evident in other creative products and tasks.

Collaboration

Collaboration is the final component in the Learning and Innovation Skills, or 4Cs, in the P21 Framework for 21st Century Learning. Collaboration requires more than an individual learner. Roschelle and Teasley (1995) described collaboration as “coordinated, synchronous activity that is the result of a continued attempt to construct and maintain a shared conception of a problem” (p. 70). Collaboration is about working with someone to learn, produce, or create. In recent years, prevailing educational thinking has shifted from behaviorist approaches, acquisition of knowledge and skills, to social constructivist views, construction of understanding from experiences and interaction with others, which has led to a move from teacher-centered, lecture-based

lessons to more frequent student-centered, resource-based activities (Witney & Smallbone, 2011, p. 102). True collaboration is the combined effort of two or more learners to coordinate their actions in order to address a specific task or problem (Hesse, Care, Buder, Sassenberg, & Griffin, 2015, p. 38). Collaboration and creativity are closely related; “collaborative activities provide individual students with opportunities to increase creative abilities and skills” (Hong, Hartzell, & Greene, 2009, p. 196). More often than not, communication, creativity, and critical thinking – all other Learning and Innovation Skills – are all subsumed in collaborative tasks.

Collaboration is the essence of Element 4f (teachers help students work in teams and develop leadership qualities). Teaching the importance of cooperation and collaboration is the necessary groundwork for the full development of this element. A proficient teacher organizes student learning teams purposefully to develop communication and interaction skills. Through team constructs, students participate in specific roles and have opportunities to practice leadership skills. Accomplished teachers guide students to creating and managing their own learning teams (North Carolina Department of Public Instruction, Educator Effectiveness Division, 2013).

“In the literature, collaborative learning is an ill-defined concept, and many authors have struggled to distinguish between co-operation . . . and collaboration” (Witney & Smallbone, 2011, p. 102). For the purposes of Element 4f, both cooperation and collaboration are valuable constructs. In 1994, Johnson and Johnson identified three types of learning behaviors – competitive, individualist, and cooperative – and cooperative learning is frequently correlated with student achievement (Plucker, Kennedy, & Dilley, 2015, p. 2). Johnson, Johnson, and Smith (2014) defined cooperative learning as “instructional use of small groups so that students work together to maximize

their own learning and each other's learning" (p. 3). A key difference between collaborative and cooperative learning is the idea of division of labor (Hesse et al., 2015, p. 38). With division of labor "each person is responsible for a portion of the problem solving" (Roschelle & Teasley, 1995, p. 70). Collaborative learning is more a process of learning interdependently through the examination and exchange of ideas; students create a learning community as they contribute to the group's skill base and each other's learning (Witney & Smallbone, 2011, p. 103).

Numerous skills are required for and acquired through collaborative and cooperative learning. Social skills are paramount to productive work in teams, pairs, and groups, communication chief among them. The "most important resource for collaboration is talk" (Roschelle & Teasley, 1995, p. 94). "During the collaboration process, students not only learn the spirit of respecting others, but also have to develop their self-regulation in order to contribute their efforts to project teams to complete tasks or solve problems" (Lai & Hwang, 2014, p. 279). During team and group learning, students should engage in dialogue, and transitions between speakers should be smooth; students take turns sharing and listening (Roschelle & Teasley, 1995, p. 76). During this dialogue, students narrate, question, and repair understanding (Roschelle & Teasley, 1995, p. 94). When collaborating, a shared plan on how to achieve a goal and manage resources is necessary, which requires planning and discussion (Hesse et al., 2015, p. 40).

Social process skills include participation skills, perspective taking skills, and social regulation skills. Participation skills address taking on responsibilities in the group and engaging in the work of the group; participation equals learning. Interaction is responding to others in the group while action is general participation in group activities. Perspective taking skills are more involved with quality of interactions, not just quantity.

These skills are both expressive and receptive and include empathy and emotional understanding of group members as well as audience awareness – knowing what to say and how to say it within the group. Social regulation skills address dealing with diversity – differing experience, opinions, knowledge, bias – within the group and include negotiation, dealing with conflict, initiative, and taking responsibility (Hesse et al., 2015, pp. 42-46). Other social skills that should be explicitly taught are decision making, trust building, conflict management, communication, and leadership skills (Johnson et al., 2013, p. 6). Cognitive process skills are also central to working with teams and are similar to the skills used when individually solving problems. Task regulation skills are planning, goal setting, and hypothesis formulation. Learning and knowledge building skills encompass internalizing ideas created through collaboration and refining plans and activities based on them as well as understanding cause and effect relationships and generalizing (Hesse et al., 2015, pp. 46-51).

Collaboration also supports Element 4b (teachers plan instruction appropriate for their students) and Element 4c (teachers use a variety of instructional methods). By using collaborative and cooperative constructs in classroom activities, teachers reflect an understanding of how students learn and learning needs specific to various learning experiences. These constructs engage students in the learning process. Collaborative and team projects move teachers to facilitative roles that allow them to monitor group process and intervene or modify as needed (Webb et al., 2008, p. 362). Furthermore, these lesson constructs expose students to diversity in culture, thinking, approach, etc. Using partners and teams as learning units is a method that can bridge achievement gaps; differentiate lesson expectations for individual students; and through the use of technology applications, offer a variety of materials and methods to meet student needs.

Students in groups have more opportunity to participate due to the small group or partner nature of these activities. In a whole class activity, opportunities to actively engage are limited due to the size of the group. Once students are working in smaller groups, multiple students can engage actively simultaneously (Hamm & Adams, 2002, p. 116). In team settings,

students are typically motivated to engage efficiently with the team due to both social pressure (in order to be considered as contributing members of the team and to “fit in”) and potential incentives or punishments (such as lower grades due to low peer evaluations and low performance of the team). (Taras et al., 2013, p. 418)

Personal, face-to-face interactions are valuable in team activities as they “can be particularly important for building engagement, interest and trust – essential ingredients for successful collaboration” (Kärkkäinen & Vincent-Lancrin, 2013, p. 52).

The use of collaborative Web 2.0 tools enables teachers to integrate and utilize technology in team and group processes, which addresses Element 4d (teachers integrate and utilize technology). Web 2.0 refers to the collective knowledge and collaborative nature of internet and online applications that we know now (O'Reilly, 2007).

The second incarnation of the Web (Web 2.0) has been called the “social Web,” because, in contrast to Web 1.0, its content can be more easily generated and published by users, and the collective intelligence of users encourages more democratic use. (Kamel Boulos & Wheeler, 2007, p. 2)

These technologies likewise provide both synchronous interaction and asynchronous communications for when groups are together as well as when they are working apart (Anaya & Bocticario, 2013 p. 8).

Virtual learning spaces and Web 2.0 technologies – wikis, blogs, Voki, VoiceThread, Group Scribbles, Twitter, Facebook, Google Apps – deliver a setting for new group applications and products (McConnell, 2005, p. 26). Online collaboration complements face-to-face work by accomplishing peer interaction and knowledge sharing just like discussion. “Web 2.0 transcends the act of simply receiving information from the internet and enables users to interact with internet content and internet users. The space acts as a medium for social learning” (Cicconi, 2014, p. 58). The virtual world’s persistence and accessibility increases social interactions, providing more opportunities for collaborative learning (Antonacci et al., 2008, p. 2; Cicconi, 2014, p. 59). Student engagement is higher as students are more likely to participate in online tasks, thereby having a positive effect on skills inherent in collaborative tasks (Cicconi, 2014, p. 61). The anonymity possible through online interaction and the engagement in real-world tasks with real-world audiences increases participation of disengaged or lower-achieving students; online applications level the playing field (Cicconi, 2014, p. 59). Furthermore, the asynchronous nature of online interaction gives think time to students with cognitive delays and difficulty verbalizing their thoughts and understandings; moreover, the online environment gives all students “a quiet place to think, create, and respond at their comfort level” (Cicconi, 2014, p. 61). Virtual collaboration can scaffold to real-world interaction because student confidence is boosted, making students more willing to share thoughts and work in a face-to-face environment (Falloon, 2010, p. 109).

Pedagogy

Pedagogy is the link between what a teacher wants students to learn and the actual learning (Slavin, 2014, p. 3). This link is created through content knowledge, learner

knowledge, and the mindful use of many different instructional strategies. Pedagogical knowledge is used by teachers to make subject matter attainable through specific instructional strategies (Kleickmann et al., 2013, p. 91).

Element 4a (teachers know the ways in which learning takes place, and they know the appropriate levels of intellectual, physical, social, and emotional development of their students) speaks to the knowledge of pedagogy that teachers should gain through their preparation programs, experience over time, and understanding of advances in the field (Vitrella, 2015, p. 7). Through coursework in teaching methods and learning theory, preparation in selecting materials, observation of teaching, practice teaching, and formal feedback on one's own teaching, teacher preparation programs help teacher candidates understand the underlying concepts of thinking and learning and give them tools to address individual student learning needs and differences through adapting resources to address student learning needs. Once in the field, practicing teachers must work to stay in touch with changes in information and developments in pedagogical knowledge.

To deal with the degree of academic diversity present in every classroom, teachers must know how to adjust curriculum and instruction to respond to student strengths and weaknesses (Tomlinson et al., 2003, pp. 121, 131). Effective differentiation is proactive in that teachers need to plan to meet individual variance within the class group in lesson planning rather than trying to adjust mid-lesson. Differentiation also employs flexible small group teaching within the larger class. Matching materials to needs of various learners in the class and varying pace are also key features of differentiation. Effective differentiation is knowledge and learner centered, framed to meet the needs of learners within cognitive structures (Tomlinson et al., 2003, pp. 131-133).

True understanding of the components delineated in Element 4a begin in teacher preparation programs but evolve and develop once in the classroom.

Teachers should leave their preparation programs embracing that, more than ever before, knowledge is fluid and dynamic and thus must commit to a lifetime of staying up to date on advances in their field. Furthermore, while specific subject matter expertise is essential, academic subjects do not exist in isolation in the real world. (Vitrella, 2015, p. 7)

During teacher preparation, candidates should be exposed to many different instructional ideas such as project-based learning, brain theory, and inquiry so they can form questions and opinions about instructional approaches different from what they experienced as students.

Unlike most other professions, new teaching candidates already have at least 12 years of experience in their field from their own experiences in K-12 as a student. They have their own well-developed notion of what school and teaching look like. While most know that other school and learning models exist beyond what they experienced themselves, internalizing those models and changing their mental image of what teaching and learning can be is difficult. (Vitrella, 2015, p. 11)

Once in the field, beginning teachers can explore new and different teaching techniques with their mentor teachers to continue expanding their knowledge of the ways learning and development take place.

Levels of Attrition and Turnover

Education is a large profession, representing just over 6% of the total U.S. work force; teachers, specifically, represent just over 5% (U.S. Bureau of Labor Statistics, 2012). For every lawyer in the work force, there are seven teachers; for every

postsecondary instructor, there are four teachers (Lacey & Wright, 2009, p. 105). There are nearly twice as many teachers as healthcare support professionals and almost three times as many teachers as registered nurses (Lacey & Wright, 2009, p. 107).

Nursing and education have been used to discuss challenges and opportunities in the fields comparatively because nursing, “like teaching, is a predominantly female occupation that has experienced perennial workplace staffing problems” (Ingersoll, 2001b, p. 14). In 2011, the average attrition rate for registered nurses was 14%, compared to an all-industry turnover rate of 13% (Rosseter, 2014).

Overall turnover in the field of education has been studied for several decades. Data from the 2012-2013 Teacher Follow-Up Survey indicates that the percent of movers in education, teachers who remain in the profession but move from one location to another, has hovered between 7-8% since data collected in the 1988-1989 survey. In the 1988-1989 survey, 7.9% of teachers were categorized as movers, falling to a low of 7.2% in 1994-1995 and rebounding to 8.1% in the 2012-2013 survey. The number of leavers, teachers who chose to leave the profession, has shown more of an increase over time. In the 1988-1989 survey, 5.6% of teachers left the profession, falling to 5.1% in the 1991-1992 survey and climbing to a high of 8.4% in 2004-2005; the current 2012-2013 survey data categorize 7.7% of respondents as leavers. If grouped into a combined attrition indicator, teacher attrition is 15.8% in the 2012-2013 survey data, which is slightly higher than the 2011 data on nursing attrition (Goldring, Taie, & Riddles, 2014).

Attrition among beginning teachers is an ongoing source of concern; “researchers have consistently found that younger teachers have very high rates of departure” (Ingersoll, 2001b, p. 6). But, even though “roughly 50% of teachers leave their initial assignment . . . in the first five years of their career,” they do not necessarily leave the

teaching profession (Allen, 2005, p. vi). “Among public school teachers with 1-3 years of experience . . . 13 percent moved to another school, and 7 percent left teaching in 2012-13” (Goldring et al., 2014, p. 3). In a 2003 article, Richard Ingersoll cited data that suggested an attrition rate “between 40 and 50 percent of all beginning teachers” within the first 5 years in the profession (Ingersoll & Smith, 2003, p. 32). Ingersoll (2003) asserted that “the key question is not whether teaching has higher or lower turnover than other occupations, but rather is teacher turnover a problem for schools themselves. The data indicate it is” (p. 8).

Causes of Attrition and Turnover

In the fall of 2016, 50.2 million students are projected to attend public schools across America; districts across the U.S. will employ about 3.1 million teachers (Snyder & Dillow, 2015, p. 131). The 1996 report *What Matters Most: Teaching for America’s Future* called beginning teacher attrition a self-inflicted wound; “the continued tolerance for extraordinary turnover among new teachers” (Darling-Hammond, 1996, p. 39). In 1997, Darling-Hammond referenced the National Center for Education Statistics, regarding “high rates of attrition for beginning teachers, more than 30% of whom leave within the first 5 years of teaching” (p. 21). In 2003, Ingersoll’s review of the data suggested that “after just five years, between 40 and 50% of all beginning teachers have left teaching altogether” (p. 13). Reported trends and causes of attrition have changed over time.

Many young teachers, specifically 42% of beginning teachers responding to the 1994-1995 Teacher Follow-Up Survey, leave the profession for reasons related to family (Ingersoll & Smith, 2003, p. 32). Historically, teaching has been an attractive employment option to women who had “more limited professional options than they have

today” (Carroll & Foster, 2010, p. 16). In 2011-2012, 76% of public school teachers were female (Snyder & Dillow, 2015, p. 66). “One of the reasons for women’s strong interest in teaching as a profession is – and likely will continue to be – the opportunity it affords to take time out to raise a family” (Allen, 2005, p. v). Young employees just entering the workforce are also starting other endeavors, including marriage and family. The decision to have a child and how to provide care for that child is faced by many teachers early in their careers. “Teachers who have children are far more likely than those teachers who do not have children to leave the profession” (Borman & Dowling, 2008, p. 397). “Specifically, the odds of attrition are higher among teachers who are female, White, young, and married and who have a child” (Borman & Dowling, 2008, p. 396).

Beyond family and personal reasons for turnover, Darling-Hammond (2010) cited four major factors that influence teacher attrition and turnover: salaries, working conditions, preparation, and mentoring and support. These reasons are cited in other studies as well (Darling-Hammond, 1997, 2000; Exstrom, 2009; Ingersoll, 2001a; Ingersoll & Smith, 2003).

According to the National Center for Education Statistics, the average public school teacher salary in 2012-2013 was \$56,383, unadjusted for inflation. When it is considered in inflation-adjusted terms, “the average salary decreased 1 percent between 1990-1991 and 2012-2013” (Snyder & Dillow, 2015, p. 6). Salaries in the education profession have declined since the 1990s. “Even after adjusting for the shorter work year in teaching, teachers earn 15-30% less than individuals with college degrees who enter other fields, depending on the field and the region of the country” (Darling-Hammond, 2010, p. 20). Beginning teachers who were satisfied with salary levels appear to have the

intention of remaining in the profession (Allen, 2005, p. 101). In the 2000 report, *A Sense of Calling*, though, “only 2% of new teachers say that, to them, the most important aspect of a job is that it should pay well” (Farkas, Johnson, & Foleno, 2000, p. 19).

Raising beginning teacher salaries may not, however, be an effective solution to the problem; higher salaries for teaching tend to be more appealing to teachers with more than 5 years in the profession (Borman & Dowling, 2008; Johnson, Berg, & Donaldson, 2005). In a 2010 report from Scholastic, however, higher salaries were less important than other nonmonetary factors cited as important to retaining effective teachers; supportive leadership was cited as absolutely essential by 68% of the respondents polled (Mayer & Phillips, 2010). Clearly, better compensation does affect length of stay in any occupation; it is clear, however, “that teachers do not respond to salary alone in their decisions to accept or remain in a particular teaching position but that working conditions and general job satisfaction also are very important” (Allen, 2005, p. 105).

Darling-Hammond (2010) stated, “Investments in competitive salaries are important. However, recruiting and keeping good teachers—both novice and experienced teachers—is equally a matter of attending to key working conditions that matter to them” (p. 26).

As in any industry, overall job satisfaction is the result of multiple factors, and supportive leadership is the standout, top-ranked item contributing to teacher retention. Teachers say higher salaries, while important, are not as critical in retaining effective teachers as other, non-monetary rewards. (Mayer & Phillips, 2010, p. 39)

A 1999 regression analysis of first-year teacher data found that school leadership and autonomy were most closely associated with morale and the intention to remain in

teaching (Allen, 2005, p. 80). Poor administrative support was cited as a reason for leaving by 26% of beginning teacher respondents to the 1994-1995 Teacher Follow-Up Survey who left for job dissatisfaction reasons (Ingersoll & Smith, 2003, p. 32). Ingersoll noted that this finding suggests that “the roots of the teacher shortage largely reside in the working conditions within schools and districts,” contrary to the notion that attrition and turnover are due to factors beyond the control of schools and educational systems (Ingersoll & Smith, 2003, p. 32). “Administrative support can greatly affect the rate of teacher attrition in a school setting” (Luther & Richman, 2009, Teacher attrition, para. 5).

By an 82% to 17% margin, teachers would also prefer a school where administrators give them strong backing over one with a significantly higher salary. “They can pay you a ton of money, but if you don't have that support, you're not going to be happy,” explained a California teacher. “Your administrator is your boss -- you want him to stand behind you when you're doing something right with students and discipline or when parent issues with grading come up.” (Farkas et al., 2000, p. 21)

The issue of administrative support may speak to negative traits or behavior of administrators as well as support offered by administrators. Respondents in a Texas study listed disrespect, specifically verbally demotivating comments, and poor ethical administrative practices (Gonzalez, Brown, & Slate, 2008, p. 6). Teachers appreciate administrators who are knowledgeable, give praise and encouragement, and attend to needs and concerns of teaching staff with a clear focus on teachers; the lack of these qualities contribute to decisions to move schools or leave the profession (Luther & Richman, 2009; Moir, 2009).

A teacher's route to teaching and preparation for teaching impacts attrition and

turnover rates. “In order to teach in public K-12 schools in the United States, one has to have earned at least a bachelor’s degree and hold a teaching certificate in the state in which one is teaching” (Feistritzer et al., 2011, p. 29). Teachers who entered teaching through alternative routes, however, often hold no more than a bachelor’s degree in a field other than education (Feistritzer et al., 2011, p. 29).

College teacher preparation programs differ greatly. “There is a huge range in number of college semester hours of education courses teachers have taken” (Feistritzer et al., 2011, p. 32). Forty-four percent of teachers entering the profession through alternative routes state that they had fewer than 25 hours of education courses in their preparation, while 39% of currently employed teachers say they had more than 50 hours of education courses (Feistritzer et al., 2011, p. 32).

Farkas et al. (2000) stated, “new teachers and the administrators who supervise them are palpably disappointed with the preparation they received in key areas” (p. 29). Beginning teachers initially believe they got a good or excellent college preparation for teaching until they spend time on their own in the classroom; then, most new teachers “charge that their training programs did only a fair (36%) or even poor (21%) job of making sure they knew how to maintain student discipline” (Farkas et al., 2000, p. 30). Evidence suggests that students who have a longer student teaching period or more exposure to internships have a better experience as they transition into their own classrooms (Johnson et al., 2005). Furthermore, although teachers feel that they were prepared to be effective teachers, about 60% feel that they were not prepared in how to help low-achieving students or students who were doing poorly (Farkas et al., 2000, p. 32).

For many, there was real frustration that the agenda of the teacher education

programs, while well-intentioned, sent them off quite vulnerable and at risk for trial by fire. Ultimately, most (63%) come to the conclusion that their programs did only a fair or poor job of preparing them for the pressure and stress of teaching. (Farkas et al., 2000, p. 32)

There are clear differences between teachers who enter the classroom through traditional preparation channels and those who enter through alternative certification channels. Alternative channel teachers without pedagogical training are over three times as likely as traditionally trained teachers to quit teaching; furthermore, traditionally trained teachers are more likely to remain in the profession and are more committed to teaching (Johnson et al., 2005). Seventy-five percent of traditional-route respondents and 73% of alternative-route respondents to the NCEI teacher survey felt that discussions with fellow teachers were a very effective aspect of their preparation program as opposed to 35% and 32%, respectively, seeing the education courses taken after beginning teaching as effective (Feistritzer et al., 2011).

Mentoring and support is the final factor that influences turnover and attrition according to Linda Darling-Hammond. In the *Profile of Teachers in the US 2011*, support provided by mentors and other teachers helped beginning teachers develop competence (Feistritzer et al., 2011). Mentoring during the initial teaching phase supports the transition from teaching preparation programs to daily teaching practice. Participation in a school mentoring program and the support gained through collaboration had an effect on reducing attrition and has even been cited as crucial to the survival of new teachers (Borman & Dowling, 2008, p. 390; Ingersoll & Smith, 2003). Participation in mentoring programs is also linked to lower attrition rates (Allen, 2005, p. 120; Darling-Hammond, 2000, p. 22). Many states have implemented induction and

mentoring programs, but there is no single implementation approach; and different programs include different components, making it difficult to conclusively determine which components or which combination of components make an effective induction or mentoring program (Allen, 2005, p. 118).

What constitutes “quality” induction and mentoring, just how much they contribute to teacher retention, and what impact they have on teachers with different abilities and different kinds of preparation are precisely the questions hoped to be answered in this research. (Allen, 2005, p. 118)

Summary

A review of the literature exposed several themes related to a mixed methods case study of the impact of instructional coaching on the self-efficacy of beginning teachers in the area of facilitation of learning. Those themes included an understanding of instructional coaching as mentoring, the history and evolution of mentoring and induction as educational reform, attrition and turnover in education, an understanding of instructional coaching and its evolution, needs and challenges of beginning teachers, self-efficacy, the various elements and components of the facilitation of learning, and pedagogy. It can be concluded from the research literature that instructional coaching is a support that can affect the self-efficacy of beginning teachers as they develop their skills in the facilitation of learning.

The following chapter will outline the methodology for this mixed methods case study which will examine the impact of instructional coaching on beginning teacher self-efficacy in the facilitation of learning.

Chapter 3: Methodology

Introduction

The purpose of this study was to examine the impact of instructional coaching on the self-efficacy of beginning teachers, especially focusing on components of Standard 4 of the North Carolina Professional Teaching Standards. This study also examined the impact between the use of full-time instructional coaches and beginning teacher perceived self-efficacy, growth in the profession, and intent to remain in the profession. This study utilized a mixed-methods sequential explanatory approach to gather both quantitative data from survey questionnaires to be completed by new teachers as well as qualitative data gathered during focus groups and interviews subsequent to gathering quantitative data.

Research Question

Based on a review of the literature and the purpose of this study, the researcher framed the study around one primary question: “What is the impact of instructional coaches on beginning teacher self-efficacy in the facilitation of learning?”

Setting and Participants

The target system for this research was a rural district in western North Carolina. The district employed 854 teachers to serve nearly 13,000 students; of these, 44 teachers held a Standard Professional 1 (SP1) Professional Educator’s License, meaning they had 0-2 years of experience. The system operated on a traditional calendar with 180 student days per year; the calendar followed North Carolina Session Law 2012-145 which stipulated a start date in late August and an end date in early June. This system opted to use full-time instructional coaches; and as part of their job duties, they provided mentor services to all teachers with an SP1 Professional Educator's License. The system

employed seven elementary instructional coaches and five secondary instructional coaches; the secondary coaches served both middle and high schools. Other induction program components used by the system were orientation to the system and ongoing beginning teacher professional development.

The participants for this study were teachers currently serving in the target school system during the 2016-2017 school year as second-, third-, or fourth-year teachers; these teachers worked with an instructional coach for at least 1 year prior to the research study. Based on data from the North Carolina Teacher Working Conditions Survey administered in March 2016, 78 teachers in the target system were eligible to respond to the New Teacher Support items on the survey during the 2015-2016 school year because they had 3 or fewer years of experience; of the respondents, 34 were employed in elementary schools, 32 were employed in middle schools, and nine were employed in high schools. During the study, there were 75 teachers in the target system with between 2-4 years of experience: 22 teachers were second-year teachers; 18 were third-year teachers; and 35 teachers were fourth-year teachers. New teachers in North Carolina LEAs participated in an induction program of 3 years; by restricting participants to those defined as second-, third-, or fourth-year teachers, participants were teachers active in the program during the study as well as some who received their Continuing License and no longer participated in induction activities. The pool of potential participants was divided into three groups: second-year teachers, third-year teachers, and fourth-year teachers. First-year teachers did not have any prior experience with instructional coaching or the induction program in the target school system.

Design

This mixed-methods sequential explanatory case study was designed to

investigate the impact of instructional coaching on the self-efficacy of beginning teachers in the facilitation of student learning. This study was a mixed methods sequential explanatory case study design in which a survey questionnaire was the quantitative element and focus groups and interviews were the qualitative elements. The study also sought to investigate the impact of instructional coaching on beginning teacher self-efficacy, generally and specifically in the facilitation of student learning, perceived job satisfaction, growth in the profession, and intent to remain in the profession. The sequential explanatory mixed-methods research approach increased the overall strength of the study as it blended quantitative and qualitative material to offer context and deeper meaning to the data collected. Creswell (2003, 2009, 2012) explained that a sequential explanatory design combines quantitative and qualitative data collection in a sequence: the researcher collecting and analyzing one type of data in a first phase which informs the collection and analysis of the second type in a second phase. “Sequential designs in which quantitative data are collected first can use statistical methods to determine which findings to augment in the next phase” (Driscoll, Appiah-Yeboah, Salib, & Rupert, 2007, p. 21). In this study, quantitative analysis of perceived self-efficacy in the constructs of facilitation of learning, primarily instructional methods and assessment methods, provided a basis for the qualitative phase. Further, the qualitative data collected helped provide context and understanding of experiences that quantitative data alone would not illuminate.

A case study is a method of research that takes an in-depth look at a bounded system and results in extensive data collection (Creswell, 2012, p. 465). Lauckner, Paterson, and Krupa (2012) described case study as a technique that allows for investigation of multifaceted situations and for the gathering of data from multiple angles

and sources. The use of case study research design allowed the researcher to investigate how and why questions that resulted from quantitative data which revealed what was happening in a specified group or system (Yin, 2009, p. 9).

Qualitative research depends on the researcher to make sense of evidence collected through in-context descriptive data collection (Bhattacharjee, 2012, p. 113). According to Creswell (2009),

qualitative research is a means for exploring and understanding the meaning individuals or groups ascribe to a social or human problem. The process of research involves emerging questions and procedures, data typically collected in the participant's own setting, data analysis inductively building from particulars to general themes, and the researcher making interpretations of the meaning of the data. (p. 4)

Quantitative research is the collection of numeric data that can be analyzed using statistical tools (Bhattacharjee, 2012, p. 119). Data are collected by means of an instrument such as a checklist or survey questionnaire which allows measuring, observing, or documenting data through specific questions and controlled response possibilities (Creswell, 2012, p. 14). Mixed-methods research integrates both qualitative and quantitative data collection and analyses. The strengths of both types of research

can be combined to develop a stronger understanding of the research problem or questions (and, as well, overcome the limitations of each). This "mixing" or blending of data, it can be argued, provides a stronger understanding of the problem or question than either by itself. (Creswell, 2014, p. 215)

Collecting quantitative data through a survey questionnaire allows the researcher to identify trends in the data through the use of descriptive statistics. Quantitative data,

however, provide only a numeric representation of information and do not offer an explanation of why respondents feel as they do; qualitative data allow the researcher the opportunity to seek a deeper understanding of and explanations for trends evident in quantitative data collection. The survey questionnaire served as the initial data source, while focus groups and interviews allowed richer examination as well as validation of the answers gathered in the initial quantitative data collection.

After analysis of initial quantitative data, the researcher identified areas of convergence and departure through the use of descriptive statistics. Qualitative data collection allowed the researcher to further explore the evident trends in order to gain a clearer understanding of what the data exposed. Once all data were collected, the researcher interpreted the analysis in its entirety (Creswell, 2003). Grounded theory was the basis of analysis for the qualitative data. Grounded theory allows the researcher to look carefully at small details revealed through coding the data to identify the central idea created from the collection of small details (Saldaña, 2011, p. 115).

Instrumentation

Survey questionnaires are useful in gauging attitudes, sentiments, actions, or characteristics of a given population or sample (Glasow, 2005). Subsequent to data collection through the use of the survey questionnaire instrument, the researcher statistically analyzed the data “to describe trends about responses to questions and to test research questions or hypotheses” (Creswell, 2012, p. 376). The researcher attempted to locate a survey that would address the constructs of Standard 4 on the evaluation rubric and the 4 Cs (communication, critical thinking, collaboration, and creativity) of the 21st century skills but was unable to locate an existing survey that would provide the information necessary for this study even though the North Carolina Professional

Teaching Standards were initially developed in 1997 with revisions in 2007 and 2011. Therefore, the researcher developed a survey to uncover perceptions of beginning teachers as they pertain to the research question. The intent of the survey was to provide a numeric description of perceptions of the constructs within the mentoring functions of the instructional coaching program implemented in the target setting.

The researcher designed the survey questionnaire to reveal perceptions about the effectiveness of instructional coaching and the induction program in assisting teachers with the constructs of Standard 4 as well as general self-efficacy, specific teaching efficacy in the facilitation of student learning, and intention to remain in the profession. Constructs of facilitation of learning include knowledge of student learning needs and development, instructional planning, instructional methods, integration of technology, critical thinking skills, collaboration, effective communication, and assessment. The survey questionnaire gathered demographic information including gender, age, school setting, and role; it was the researcher's intention that this data might prove beneficial in subsequent data analysis. The researcher chose to focus the bulk of the survey items on the constructs of instructional and assessment methods. Through a review of the literature, the researcher determined that instructional coaching tends to emphasize methods of instruction and assessment; efficacy also tends to center on a belief that a teacher has instructional abilities and can use student assessments to inform future instruction. Additionally, the various elements of Standard 4, Teachers Facilitate Learning for their Students, best distilled to these two basic constructs. The researcher also included questions to gauge efficacy, job satisfaction, and issues specific to beginning teachers and the instructional coaching aspect of the beginning teacher support program in the target system.

The survey questionnaire contained statements for users to respond to using a 5-point Likert scale and user entry items. Likert-type scales, first developed in 1932, use a range of a group of categories which ask participants to indicate where their opinions lie on the range; an odd number of responses, commonly 5 or 7, avoids the forced choice design, which denies respondents the option of neutrality, of an even number of responses (Allen & Seaman, 2007, p. 64). “Multi-step Likert-type rating scales provide two components of information—the direction and the intensity of an individual’s attitudinal composition” (Matell & Jacoby, 1971, p. 659). The Likert-type scale provides continuous response options with theoretically equal intervals; the data are ordinal in nature, however, because there is no way to quantify the distances between response options as equal (Creswell, 2012, p. 167). Because of the variable difference between response options, ordinal data are nonparametric, limiting their generalizability (Creswell, 2012, p. 167). Matell and Jacoby (1971) stated that too few rating categories on a scale lead to coarse data, while too many categories result in choices that are so finely delineated that the researcher becomes unable to discriminate the data (p. 657). In their study, Matell and Jacoby asserted that reliability was independent of the number of rating categories on a scale and that there was no increase in reliability of measurement with finer scales; likewise, validity was not affected by the scale employed in their study (p. 670). Later research suggests that validity does increase with an increase in response categories (Preston & Colman, 2000, p. 2). Research has shown “a clear preference for multiple-category over dichotomous scales” (Preston & Colman, 2000, p. 3). Preston and Colman’s (2000) research revealed that criterion validity coefficients were higher for scales with five or more response categories (p. 9). Shorter scales were quick to use but did not allow for adequate expression of feelings; scales with five to 10 categories were

rated by respondents as relatively easy to use (Preston & Colman, 2000, p. 10). The researcher chose a 5-point Likert scale to allow respondents some definition of degree of feeling; the researcher felt that a larger scale may require too fine a discrimination in respondent attitudes that may serve to frustrate respondents more than added detail would assist the researcher. Likert scale questions in this survey questionnaire used designations from 1=Strongly Disagree (SD) to 5=Strongly Agree (SA). Constructs within the elements of Standard 4, specifically instructional methods and assessment, served as the basis of the majority of survey items. Thirty-seven items dealt directly with instructional methods and assessment method constructs and 30 items addressed beginning teacher issues, program-specific information, general self-efficacy, efficacy in terms of the facilitation of student learning, job satisfaction, and intent to remain in the profession. The researcher chose not to include open-ended items on the initial survey questionnaire, instead planning to utilize that format in focus groups and interviews after analysis of quantitative data through the use of descriptive statistics. The researcher determined percent positive from average scores by construct as well as by elements within the constructs on the survey. The researcher employed frequency distributions and bar graphs to visually illustrate data for further evaluation. The researcher further disaggregated data by years of experience, school setting, subjects taught, and age ranges to investigate any differences in the various groups.

The researcher addressed validity and reliability of the survey instrument.

“Validity is the degree to which all of the evidence points to the intended interpretation of test scores for the proposed purpose” (Creswell, 2012, p. 159) and that an instrument measures what it purports to measure (Burton & Mazerolle, 2011). The survey used in this research was reviewed by nonparticipants with specific knowledge in instructional

coaching as well as beginning teacher programs and needs. Based on feedback, adjustments to the survey were made before it was pilot tested for face validity to establish ease of completion and clarity as well as for further feedback on question concerns. The instrument was pilot tested by beginning teachers, instructional coaches, and other professionals with knowledge of instructional coaching and beginning teacher issues who were not part of the target school district for this study; data collected in the pilot study were not included in the main data analysis. Respondents in the pilot test were asked to take the survey through GoogleForms in the same manner it was administered in the target district. Participants also received a separate copy of the survey questions in a GoogleDoc and were asked to comment on specific questions, identifying unintended ambiguities and giving feedback on the overall structure of the survey; only three feedback forms were completed during the pilot test.

The researcher reviewed and cross-referenced feedback comments made on survey items and structure. The initial draft of the survey was organized into three sections: introduction, demographic items, and survey items. The researcher reorganized the items into sections based on each specific element being explored and added a progress bar based on feedback comments. The researcher chose to move the demographic items to the end of the questionnaire after considering research which stated that “respondents may get tired and answer the last questions carelessly or not answer them at all. You can place demographic questions (age, income, gender, and other background characteristics) at the conclusion because they can be answered quickly” (Fink, 2013, p. 60). A comment suggested that two items in the assessment construct were redundant. The researcher chose to reword the first item to focus on creation of assessments to clarify focus of the second item on assessment use. Rewording of “My

instructional coach helps me develop culturally responsive lessons and teach students from diverse backgrounds” to “My instructional coach helps me develop lessons that are respectful of the cultural backgrounds of all of my students” was suggested, and the researcher agreed. Another comment suggested rewording “My instructional coach has what it takes to help teachers become better at teaching.” The researcher chose not to reword the item so that the concept could be explored in focus groups and interviews to gain more clarification. The researcher chose not to reword “My instructional coach provides support with managing classrooms” to allow for clarification in group and individual interviews.

After updating the questionnaire to reflect suggestions made based on feedback, the researcher used cognitive interviewing with two pilot test members to probe how respondents interpreted the items and how they went about answering the questions. The researcher used paraphrasing, asking the cognitive interview respondents to reword items in their own words. The researcher also used probes to ask for an explanation of how specific items were answered. Finally, the researcher asked the cognitive interview members to give a confidence rating for each of their responses. The initial pilot test responses helped gauge “length, flow, salience, ease of administration, and response and acceptability to respondents” (Collins, 2003, p. 231). Cognitive interviewing added a layer of specific feedback to the pilot test of the survey questionnaire because people “often answer questions even though they may not understand what the question is asking of them” (Collins, 2003, p. 231). Information from the pilot test “might give advance warning about where the main research project could fail, where research protocol may not be followed, or whether proposed methods or instruments are inappropriate or too complicated” (Van Teijlingen & Hundley, 2002, p. 33). The researcher used feedback

from the cognitive interviews to reword and move “Think about how many hours you met with your instructional coach in an average month during the 2015/2016 school year. How much of that time was spent discussing issues of the facilitation of student learning?” to just before the demographic item section; the cognitive interview feedback showed that it was easier to understand the full meaning of that item after answering the questionnaire items. Feedback from written comments and cognitive interviews confirmed that the questionnaire items were aligned to the various constructs, were not redundant, fully explored each construct, were clear and concise, and were reasonably ordered. The addition of a progress bar was also cited as making it easier to complete the survey. Feedback from the pilot test facilitated administration in the target population. Reliability “is the degree to which the measure of a construct is consistent or dependable” (Bhattacharjee, 2012, p. 56). Once quantitative data collection was closed, the researcher used Cronbach’s alpha to determine level of internal reliability to quantify if the survey questions truly measured what they intended to (Bhattacharjee, 2012, p. 57). On Likert-style scales, “the alpha provides a coefficient to estimate consistency of scores on an instrument” (Creswell, 2012, p. 162). “Cronbach’s alpha reliability coefficient normally ranges between 0 and 1 . . . the closer Cronbach’s alpha coefficient is to 1.0 the greater the internal consistency of the items in the scale” (Gliem & Gliem, 2003, p. 87). Reliability also increases through use of a survey as the data collected are more objective and less subject to the interpretation of the researcher than qualitative data. The survey sought to focus on issues with which the respondents should be familiar and in which they had a vested interest, further addressing reliability; moreover, wording of the items was as simple as possible to avoid multiple meanings or misunderstandings (Bhattacharjee, 2012, p. 56).

The researcher planned to use focus group interviews and one-on-one interviews to collect qualitative data in this study. The researcher created a focus group protocol that sought to expand an understanding of how working with an instructional coach impacted instructional and assessment methods, teaching in general, and career decisions of beginning teachers. Further, the researcher reviewed average percent positive on quantitative data by individual item and by constructs and elements to identify themes in need of more interpretation to fully understand the meaning of what the quantitative data said; items were added to the focus group protocol as needed to expand these themes. Basing some protocol questions on data from the surveys served to clarify misconceptions and advance understandings of that data as well as to generate discussion (Wolff, Knodel, & Sittitary, 1993, p. 121). One-on-one interview protocol questions explored the beginning teacher experience with instructional coaching in the target system with an emphasis on the constructs of the facilitation of student learning. Additional items were developed based on themes that arose from survey data. Protocols to use with focus groups and in interviews were developed and finalized after consideration of data from each phase.

Validity and reliability was enhanced through the researcher's choice to collect data in multiple forms, both quantitative and qualitative. According to Creswell (2012), triangulation is verifying evidence of different types, from different sources, or through different methods of collection (p. 259). Quantitative data were gathered through an initial survey questionnaire; results yielded a numeric representation of perceptions of attitudes on constructs and issues that relate to the research question. The researcher examined frequency distribution tables, bar graphs, and percent positive by item, element, and subgroups of respondents to analyze initial data. Quantitative data were

verified through qualitative data collection. Themes emerging from survey data were explored in one-on-one interviews during a final qualitative data collection phase. Per Creswell (2012), using different methods of data collection and different sources of data, the researcher sought to achieve triangulation.

Procedures

The researcher obtained permission from the superintendent of the target district to conduct the proposed study within the school system. Upon Institutional Review Board (IRB) approval, the researcher sent a letter of introduction via email to school district and building-level administrators who were involved with instructional coaching and the induction program in the target school system. Next, the researcher emailed building-level principals requesting that they forward a letter of invitation to potential participants describing the proposed study and requesting their participation.

To enhance ease of submission, surveys were conducted electronically after appropriate permissions and approvals were obtained. The electronic survey questionnaire instrument did not collect any electronic identifying information such as IP or email addresses. Electronic permissions to access online files was not granted; only the researcher had online access to the electronic information. Online survey data collection methods can result in higher response rates and ease of use. Additionally, they involve less time, effort, and cost than alternative administrations of surveys (Ary, Jacobs, Razavieh, & Sorensen, 2006). Surveys were administered through Google Forms as the teachers were already familiar with that format since Google Apps for Education was employed by the target district. A link to the survey was included in the letter of invitation emailed to potential participants; before the hyperlink appeared in the email, a brief explanation of the project, assurance of confidentiality, and a statement of informed

consent was presented. The researcher prepared two follow-up reminder emails to solicit additional respondents as an adequate response rate was not initially achieved. Babbie (1990) stated that a response rate of around 50% is “generally considered adequate for analysis and reporting” (p. 182); but Fink (2013) stated that unless done statistically, a target response rate is completely subjective and “no single rate is considered the standard,” keeping in mind that more is better (p. 95). With such a small target population, the researcher felt 50% may be unattainable and hoped to achieve a response rate of 30% or better.

This mixed methods case study employed purposeful sampling in which participants were intentionally chosen (Creswell, 2012, p. 206). This purposeful sample was second-, third-, and fourth-year teachers employed by the target school district at the time of the study; these teachers worked with an instructional coach in the target system for at least 1 year prior to the research study. Due to the limited number of potential participants, 75 new teachers in the purposeful sample, all potential participants were initially contacted and asked to complete a survey through email. Response bias, or how nonrespondents potential responses may have affected the data collected, was examined through wave analysis as responses were collected.

In wave analysis, the researcher examines returns on select items week by week to determine if average responses change. Based on the assumption that those who return surveys in the final weeks of the response period are nearly nonrespondents, if the responses begin to change, a potential exists for response bias. (Creswell, 2003, p. 182)

Descriptive statistics used on the results of each construct in the Likert-type survey items were analyzed to establish the self-efficacy of the purposeful sample. Descriptive

statistics are numbers that summarize and help researchers make sense of group data (Singpurwalla, 2013, p. 9). The researcher compiled data by topic in a tabular form and computed averages by item, construct, and element to identify percent positive and central tendencies; furthermore, bar graphs helped visualize the data. The researcher examined category averages to prioritize the impact of instructional coaching on specific elements of Standard 4. Furthermore, the researcher planned to utilize data in regression analyses to examine the impact of instructional coaching on multiple variables.

According to Creswell (2012), multiple regression analysis is “a statistical procedure for examining the combined relationship of multiple independent variables with a single dependent variable” (p. 350). Through the use of multiple regression, the researcher hoped to determine the impact of instructional coaching on variables of the facilitation of learning. The central limit theorem states that a small population of at least 30 or more will yield an approximately normal sampling distribution; however, 30 responses in a potential population of 75 would indicate a return rate of 40%; the researcher understood that that response rate was too high to be anticipated (Singpurwalla, 2013, p. 58). Due to the limited number of potential responses, the study did not advance beyond descriptive approaches.

The researcher attempted to select focus group participants from the initial pool of possible participants for the survey questionnaire made up of second-, third-, and fourth-year teachers in the target school system. The researcher used stratified random sampling seeking to ensure an equitable representation among the three grade spans (K-5, 6-8, 9-12). “In stratified random sampling, you first subdivide the population into subgroups or strata and select a given number or proportion of respondents from each stratum to get a sample” (Creswell, 2003, p. 156; Creswell, 2012, p. 144; Fink, 2013, p. 96). The

researcher stratified potential participants by grade span, then, using a random number generator, randomly selected a proportion from each stratum who were invited to participate in focus group interviews. Finally, candidates for interviews were to be solicited at the conclusion of each focus group interview. Again, the researcher planned to use stratified random sampling of focus group participants who indicated that they were willing to participate in one-on-one interviews to select three individuals for one-on-one interviews as a final data collection phase.

Qualitative data collection followed the quantitative data collection in this sequential explanatory mixed methods case study. After percent positive based on averages of responses were calculated, the researcher constructed frequency tables to visualize trends in the data; then a focus group protocol was to be utilized to confirm and probe themes arising from quantitative data collected through the survey. After the solitary and restricted completion of surveys, focus groups operate on interaction of participants elaborating on topics in the conversation and expanding the conversation with further questions and anecdotes provided by participants instead of the researcher (Kitzinger, 1995, p. 299). Using open-ended questions allows participants to share views unhindered by given response choices (Creswell, 2009). The researcher believed this qualitative data would provide a richer analysis of the quantitative data and lead to themes that could be further investigated in a personal interview setting which would follow focus groups. To ensure data reliability, audio recording was to be utilized, transcripts created, and subsequently coded. All audio recordings were password protected and stored on the researcher's personal computer; any written material was secured in the researcher's home office in a locked box. Qualitative coding approaches were to be used to analyze qualitative data gleaned from focus groups and interviews.

Creswell (2014) suggested eight steps to use when coding qualitative data. First, the researcher reviews transcripts carefully and informally records ideas as they come to mind during this review. Using categories from the initial survey for consistency and ease of data analysis, qualitative responses would be categorized initially as instructional methods and assessment methods. Next the researcher would identify the shortest document for a more thorough examination, focusing on the underlying meaning of the conversation, again informally recording ideas as they are generated. This process was to be repeated for the longest document. A combined list of identified topics was to be compiled, with any similar topics clustered together to create an array of major topics, unique topics, and others. From this list, the researcher was to return to the data and abbreviate topics as codes, recording them manually next to applicable pieces of the text; during this, the researcher would record any additional categories that emerged. The researcher would seek to reduce the list of codes to more descriptive categories, combining topics that related to each other, and then make a final decision on which categories would be used in the final review of the qualitative data, alphabetizing the codes. Data were to be assembled by category, and the researcher planned to conduct a preliminary analysis; if needed, the researcher would recode and repeat the analysis (Creswell, 2003, p. 192). Patterns and themes present in the data were to be compiled in a frequency table and quantified based on frequency of occurrence. After performing this process on focus group data, the researcher planned to use the preliminary data analysis to identify areas needing clarification or elaboration during one-on-one interviews; the interview protocol would be created to reflect these needs. The qualitative data coding process would be repeated on one-on-one interview transcripts, and a final analysis would combine qualitative data results with quantitative data.

Limitations

Although North Carolina law requires a Beginning Teacher Support Program in all systems in the state, the state presents standards and policies regarding these programs but does not require a specific approach. Each system creates a program to meet requirements spelled out in the law and utilizes funding from appropriate sources to implement the program, but systems make different choices to meet the requirements. Therefore, findings from this study would only be useful when considering similar program implementations.

Delimitations

Teachers and mentors in only one district were utilized in data collection. The researcher was able to locate only 16 programs in the state that utilized mentors who had no classroom responsibilities or were full-time mentors. The researcher chose to complete the study in a district located close to the researcher's location. Other programs utilized in districts across North Carolina may provide different or additional supports to the elements of Standard 4 that impact the self-efficacy and intention to remain in the profession of beginning teachers.

Chapter 4: Findings

Introduction

The purpose of this study was to examine the impact of instructional coaching on the perceived self-efficacy of beginning teachers, especially in the constructs of Standard 4 (Facilitation of Learning) of the North Carolina Professional Teaching Standards. The research question, “What is the impact of instructional coaches on beginning teacher’ self-efficacy in the facilitation of learning,” guided this study. The participants in this study were second-, third-, and fourth-year teachers from a rural district in western North Carolina which has opted to use full-time instructional coaches to serve as mentors to all initially licensed teachers in the system; these coaches simultaneously serve veteran teachers in their instructional coach role. The researcher chose to conduct a mixed-methods study with surveys and open-ended interviews as the primary means of data collection. The survey questions (Appendix A) were derived from the elements and constructs within Standard 4, Teachers Facilitate Learning for their Students, in the North Carolina Professional Teaching Standards. The researcher-developed survey and open-ended interview questions (Appendices A, B, and C) were aimed at determining the participating teacher perspectives regarding the impact of instructional coaching on their efficacy related to the elements and constructs of the facilitation of student learning.

The researcher developed survey items related to each construct embedded in the eight elements of Standard 4 as well as items related to beginning teacher and program specific issues, attitudes towards instructional coaching, self-efficacy, and dispositions about teaching as a profession. The researcher chose to present the items grouped by construct in the survey. Upon receiving the survey responses, the researcher analyzed the results so a mean score could be obtained for each of the item constructs.

The mean score for each element, construct, and item was derived from the numeric survey responses based on a Likert scale using designations from 1=Strongly Disagree (SD) to 5=Strongly Agree (SA). In addition to being a quantitative piece of data in this mixed-methods study, the mean scores were also used to inform the open-ended interview questions which specifically examined elements within the lowest scoring construct and the highest scoring construct identified by the data analysis.

The researcher initially planned to begin qualitative data collection with focus groups and end with individual interviews. The researcher was unsuccessful in recruiting participants for focus group interviews; after contacting half of the target population, the researcher opted to move into individual interviews as the sole qualitative data collection. The researcher was successful in arranging individual interviews that included teachers from all three grade spans (elementary, middle, and high school designations) as well as all three types of target participant (second-, third-, and fourth-year teachers).

Procedures

Because teachers in the target district were familiar with Google Apps for Education, the survey was administered through Google Forms. A link to the survey was included in a letter of invitation outlining the scope and goals of the research project emailed to potential participants; before the hyperlink appeared in the email, an assurance of confidentiality, and a statement of informed consent was presented. Questions in the survey were grouped by elements and constructs. The survey concluded with items to gather demographic information such as gender, age, grade span, subject area, and number of years working with current instructional coach.

The survey was open for responses for 4 weeks. During this time, the researcher concurrently attempted to organize focus group interviews by grade spans (K-5, 6-8, 9-

12). After randomly selecting 30 potential participants in two separate rounds, or approximately half of the target population, and contacting them by email, the researcher was unable to successfully solicit any focus group participants. The researcher then randomly selected three participants to contact for one-on-one interviews. The researcher successfully solicited three participants who were second-, third-, and fourth-year teachers, one each in elementary, middle, and high school settings. The researcher compiled mean scores and percent positive on survey items to identify any areas to include in the updated one-on-one interview protocol.

Demographics of Participants

Table 1 identifies the frequency and percentage of respondents by school setting. Two respondents identified as middle grades teachers; one in seventh grade and one in eighth grade. Three respondents identified as high school teachers with experience in ninth, tenth, eleventh, and twelfth grades. More than half of the survey responses were submitted by teachers in elementary settings. Table 2 summarizes the reported grade levels of elementary respondents. Respondents had experience at all elementary grade levels; only one participant, or 8.3%, had experience in second grade while a larger portion, three participants or 25%, had experience in fourth grade.

Table 1

Participants by School Setting

	Frequency	Percent
Elementary	8	61.5
Middle	2	15.4
High	3	23.1
Total	13	100.0

Table 2

Reported Grade Levels by Participants in Elementary Settings

	Frequency	Percent
Kindergarten	2	16.7
First	2	16.7
Second	1	8.3
Third	2	16.7
Fourth	3	25.0
Fifth	2	16.7
Total	13	100.0

The researcher was able to better understand the grade level and setting distribution of participants by reviewing information contained in Tables 1 and 2. These data were important for the researcher to collect as they allowed the contextualization by school setting of the results both for individual items as well as items grouped by elements and standards. This information also helped the researcher in conducting individual interviews and reviewing responses to determine how participants in different school settings perceived support in each of the elements of Standard 4 as well as topics specific to beginning teachers and the program which is designed to serve them in the target system.

Analysis of Data

An analysis of the survey data was completed using the Cronbach's alpha formula to determine how reliable the survey questions were for the participants. Cronbach's alpha measures the internal reliability of survey questions. The Cronbach's alpha for these items was found to be 0.982 which is acceptable reliability for use in educational settings. Gliem and Gliem (2003) showed that measures above 0.9 are indicative of excellent reliability.

The figure below presents the responses as they relate to the elements of Standard 4 of the North Carolina Professional Teaching Standards and the aggregate mean score for items related to each of the elements. The researcher interpreted a mean score lower than 3 as a negative response; any score greater than 3 was construed as a positive response. A mean score equal to 3 was understood by the researcher to indicate a neutral response. The three elements rated negatively by respondents were 4e/Critical Thinking, 4f/Collaboration, both with mean scores of 2.77, and 4g/Communication with a mean score of 2.92. The highest-rated element was 4a/Student Development which earned a mean score of 3.28. 0

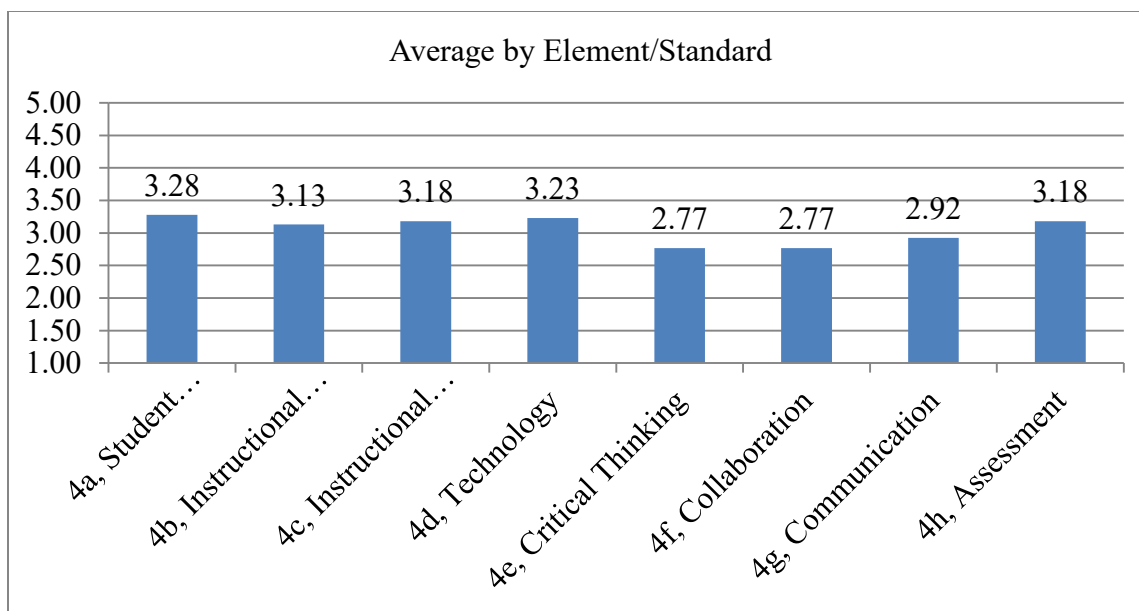


Figure 1. Average Response by Element/Standard.

Element A of Standard 4 addresses student development: “Teachers know the ways in which learning takes place, and they know the appropriate levels of intellectual, physical, social, and emotional development of their students” (McREL, 2015, p. 10). Six items addressed participant perceptions of the support received from instructional coaches in the area of student development. Table 3 outlines the mean score per item in this element. Item 1.4, “My instructional coach helps me create and maintain a successful learning environment,” received the highest mean rating at 3.54. Middle school respondents rated this item highest with a mean score at 4.33. Item 1.2, “My instructional coach helps me organize subject matter in my teaching,” received the lowest mean rating at 3.08. Again, middle school respondents rated this item at 2.67 but also rated item 1.5, My instructional coach helps me frame my instructional decisions based on my students' learning,” at 2.67. The cumulative percentage of negative responses for this element was 24%, specifically four ratings of strongly disagree and 15 ratings of

disagree. The cumulative neutral rating for items in this element was 36% with 28 ratings of neither agree nor disagree. The cumulative positive rating for this element was 40% with 17 ratings of agree and 14 ratings of strongly agree.

Table 3

Mean Scores for Items in Standard 4, Element A: Student Development

	N	Mean	Standard deviation
1.1 My instructional coach helps me differentiate instruction.	13	3.23	1.166
1.2 My instructional coach helps me organize subject matter in my teaching.	13	3.08	1.256
1.3 My instructional coach helps me develop strategies to incorporate special accommodations for my students.	13	3.31	.947
1.4 My instructional coach helps me create and maintain a successful learning environment.	13	3.54	1.198
1.5 My instructional coach helps me frame my instructional decisions based on my students' learning.	13	3.38	1.121
1.6 My instructional coach helps me successfully teach students with a variety of ability levels.	13	3.15	1.214

Element B of Standard 4 addresses instructional planning: “Teachers plan instruction for their students” (McREL, 2015, p. 10). Nine items addressed participant perceptions of the support received from instructional coaches in the area of instructional planning. Item 2.9h is taken from Element H which focuses on assessment; the researcher chose to use the item in this construct because it focuses on the use of assessment to design instruction. Table 4 outlines the mean score per item in this element. Item 2.4b, “My instructional coach has planned lessons with me,” received the

lowest mean rating at 2.08. Item 2.1b, “My instructional coach informs me of available support services and personnel I can use to meet student needs,” received the highest mean rating at 4.15. Elementary and middle school participants rated several items in this element as disagree or strongly disagree. Middle school mean responses on six of the nine items ranged from 1.67 to 2.67, with the lowest item in middle school responses being item 2.4b, “My instructional coach has planned lessons with me,” at a mean response of 1.67. The lowest mean response from elementary participants was also on item 2.4b, at 2.00. The cumulative percentage of negative responses for this element was 31%, specifically 18 ratings in each of strongly disagree and disagree. The cumulative neutral rating for items in this element was 36% with 34 ratings of neither agree nor disagree. The cumulative positive rating for this element was 40% with 20 ratings of agree and 27 ratings of strongly agree.

Table 4

Mean Scores for Items in Standard 4, Element B: Instructional Planning

	N	Mean	Standard deviation
2.1b My instructional coach informs me of available support services and personnel I can use to meet student needs.	13	4.15	.987
2.2b My instructional coach helps me teach to content standards.	13	3.23	1.301
2.3b My instructional coach helps me develop lessons that are respectful of the cultural backgrounds of my students.	13	2.69	1.109
2.4b My instructional coach has planned lessons with me.	13	2.08	1.256
2.5b My instructional coach helps me understand how to analyze student data to guide my instruction.	13	3.85	1.405
2.6b My instructional coach helps me understand my curriculum.	13	3.00	1.528
2.7b My instructional coach helps me develop my curriculum.	13	2.77	1.092
2.8b My instructional coach helps me plan lessons that utilize resources outside my classroom.	13	3.23	1.363
2.9h My instructional coach helps me use assessment data to design instruction.	13	3.54	1.266

Element C of Standard 4 addresses Instructional Methods: “Teachers use a variety of instructional methods” (McREL, 2015, p. 10). Participant perceptions of the support received from instructional coaches in the area of instructional methods were addressed by three items. Table 5 outlines the mean score per item in this element. Item 3.1, “My instructional coach helps me use a variety of teaching strategies to provide students with instruction that is effective for them,” received the highest mean score at 3.23. Items 3.2

and 3.3, “My instructional coach helps me develop and improve a repertoire of teaching strategies, skills, and techniques” and “helps me motivate students,” both received a mean rating of 3.15. The cumulative percentage of positive responses for this element was 33%, specifically 10 ratings of agree and three of strongly agree. The cumulative neutral rating for items in this element was 49% with 19 ratings of neither agree nor disagree. The cumulative negative rating for this element was 18% with five ratings of disagree and two ratings of strongly disagree.

Table 5

Mean Scores for Items in Standard 4, Element C: Instructional Methods

	N	Mean	Standard deviation
3.1 My instructional coach helps me use a variety of teaching strategies to provide students with instruction that is effective for them.	13	3.23	1.013
3.2 My instructional coach helps me develop and improve a repertoire of teaching strategies, skills, and techniques.	13	3.15	1.068
3.3 My instructional coach helps me motivate students.	13	3.15	.801

Elements D, E, F, and G of Standard 4 are the elements within the North Carolina Professional Teaching Standards most obviously aligned to the Learning and Innovation Skills which underpin 21st century teaching and learning upon which the teaching standards are centered (McREL, 2015). Also referred to as the 4 Cs, the Learning and Innovation Skills are communication, collaboration, creativity, and critical thinking (Partnership for 21st Century Skills, 2015). Table 6 outlines the mean score per item for these elements. Element D, “Teachers integrate and utilize technology in their instruction,” addressed in item 4.1, received the highest mean score of 3.23. Element E, “Teachers help students develop critical thinking and problem-solving skills,” addressed

in item 4.2, and Element F, “Teachers help students work in teams and develop leadership qualities,” addressed in item 4.3, each received the lowest mean score of 2.77. Element G, “Teachers communicate effectively” addressed in item 4.4, received a mean score of 2.92. Again, middle school cumulative mean response for items in this construct were lower than in other settings at 2.58, with a mean rating on three of the four items between 2 and 2.67. Cumulative elementary mean response on this construct was slightly above neutral at 3.03, but high school responses were neutral on all items in the construct. The cumulative percentage of positive responses for items in this construct was 27%, specifically five ratings of agree and nine of strongly agree. The cumulative neutral rating for items in this construct was 40% with 21 ratings of neither agree nor disagree. The cumulative negative rating for items in this construct was 33% with seven ratings of disagree and 10 ratings of strongly disagree.

Table 6

Mean Scores for Items in Standard 4, Elements D, E, F, G: Learning & Innovation Skills

	N	Mean	Standard deviation
4.1 My instructional coach helps me integrate and utilize technology in my lessons to maximize student learning.	13	3.23	1.363
4.2 My instructional coach helps me develop and utilize critical thinking questions.	13	2.77	1.363
4.3 My instructional coach helps me create lessons that require students to collaborate.	13	2.77	1.363
4.4 My instructional coach helps me communicate effectively with my students.	13	2.92	1.256

Element H of Standard 4 addresses Assessment Methods: “Teachers use a variety of methods to assess what each student has learned” (McREL, 2015, p. 11). Participant perceptions of the support received from instructional coaches in the area of assessment methods was addressed by 11 items. Table 7 outlines the mean score per item in this element. Item 5.02, “My instructional coach helps me in assessing student needs,” received the highest mean score at 3.62. Items 5.03 and 5.07, “My instructional coach helps me effectively create classroom assessments other than tests” and “helps me develop a repertoire of assessment strategies,” both received the lowest mean rating of 2.92. The middle school responses on all items in this element were disagree or strongly disagree, with mean responses ranging from 1.67 to 2.67. The lowest mean response in middle school was 1.67 on item 5.03, “My instructional coach helps me effectively create classroom assessments other than tests.” The cumulative percentage of positive responses for this element was 38%, specifically 30 ratings of agree and 24 of strongly

agree. The cumulative neutral rating for items in this element was 34% with 48 ratings of neither agree nor disagree. The cumulative negative rating for this element was 29% with 25 ratings of disagree and 16 ratings of strongly disagree.

Table 7

Mean Scores for Items in Standard 4, Element H: Assessment Methods

	N	Mean	Standard deviation
5.01 My instructional coach assists me in analyzing student work.	13	3.31	1.377
5.02 My instructional coach helps me in assessing student needs.	13	3.62	1.261
5.03 My instructional coach helps me effectively create classroom assessments other than tests.	13	2.92	1.382
5.04 My instructional coach helps me use North Carolina's academic standards to create classroom assessments.	13	3.00	1.354
5.05 My instructional coach helps me understand and use summative assessment in my classroom.	13	3.15	1.214
5.06 My instructional coach helps me use a variety of methods to assess my students.	13	3.31	1.251
5.07 My instructional coach helps me develop a repertoire of assessment strategies.	13	2.92	1.188
5.08 My instructional coach helps me provide evidence of student learning in my classroom.	13	3.08	1.256
5.09 My instructional coach helps me evaluate student progress using a variety of assessment data.	13	3.00	1.225
5.10 My instructional coach helps me understand and use formative assessment in my classroom.	13	3.23	1.166
5.11 My instructional coach helps me create quality tests for students.	13	3.08	1.038

In addition to beginning teacher perceptions of support received from instructional coaches in each of the elements of Standard 4, the researcher also sought to

gather perceptions regarding beginning teacher issues, the instructional coaching program in which they were engaged, instructional coaches, self-efficacy, and general dispositions towards teaching to better understand how instructional coaching affected self-efficacy, and beginning teacher general attitudes towards issues specific to them.

In the target system, instructional coaches served as mentors to all beginning teachers. Four items addressed participant perceptions about instructional coaches in the role of mentor. Table 8 outlines the mean score per item in this construct. Item 6.4, “As a mentor, my instructional coach provides support with managing classrooms,” received the highest mean score at 3.69. Item 6.2, “As a mentor, my instructional coach provides information on the Code of Ethics for North Carolina educators,” received the lowest mean score at 3.31. The highest mean responses on items in this construct were in middle school, ranging from 4.00 to 4.33 on three of the four items in this construct. The cumulative percentage of positive responses for this construct was 54%, specifically 17 ratings of agree and 11 of strongly agree. The cumulative neutral rating for items in this construct was 27% with 14 ratings of neither agree nor disagree. The cumulative negative rating for this construct was 19% with nine ratings of disagree and one rating of strongly disagree.

Table 8

Mean Scores for Items in Instructional Coach in the Role of Mentor Construct

	N	Mean	Standard deviation
6.1 As a mentor, my instructional coach provides information that helps me understand teacher evaluation standards and processes.	13	3.54	1.050
6.2 As a mentor, my instructional coach provides information on the Code of Ethics for North Carolina educators.	13	3.31	1.251
6.3 As a mentor, my instructional coach provides information that helps me interpret school and district policies and procedures.	13	3.62	1.044
6.4 My instructional coach provides support with managing classrooms.	13	3.69	1.032

Eight items addressed participant perceptions about the mentoring/instructional coaching program in the target system. Table 9 outlines the mean score per item in this construct. Item 7.03, “Instructional coaching is valuable to new teachers like me,” received the highest mean score for items in this construct at 3.92. Item 7.06, “Instructional coaching assists beginning teachers in demonstrating basic competence on standards of performance,” received the lowest mean score for items in this construct at 3.38. The lowest mean response by setting on any item in this construct was 2.33 on item 7.01, “I have regularly scheduled meetings with my instructional coach,” given by middle school participants, while the same item garnered the highest mean response by setting at 4.50 from high school participants. The cumulative percentage of positive responses for this construct was 55%, specifically 24 ratings of agree and 33 of strongly agree. The cumulative neutral rating for items in this construct was 28% with 29 ratings of neither agree nor disagree. The cumulative negative rating for this construct was 17% with 10

ratings of disagree and eight ratings of strongly disagree.

Table 9

Mean Scores for Instructional Coaching/Mentoring-Program Specific Items

	N	Mean	Standard deviation
7.01 I have regularly scheduled meetings with my instructional coach.	13	3.46	1.506
7.02 Instructional coaching eases the transition into teaching.	13	3.54	1.266
7.03 Instructional coaching is valuable to new teachers like me.	13	3.92	1.441
7.04 Instructional coaching increases beginning teacher retention.	13	3.85	1.068
7.05 Meetings with my instructional coach improved my ability to perform my teaching duties.	13	3.46	1.330
7.06 Instructional coaching assists beginning teachers in demonstrating basic competence on standards of performance.	13	3.38	1.121
7.07 Feedback from my instructional coach's observations helped me develop the skills I need to carry out my teaching responsibilities.	13	3.46	1.330
7.08 Instructional coaching helps guide beginning teachers as they reflect upon and improve their effectiveness in the profession.	13	3.85	.987

Four items addressed participant attitudes about working with instructional coaches. Table 10 outlines the mean score per item in this construct. Item 8.4, "My instructional coach is concerned with my success," received the highest mean score for items in this construct at 3.85. Item 8.1, "I would like to have more time to work with my instructional coach," received the lowest mean score for items in this construct at 3.38. All middle school respondents strongly agreed with item 8.4, "My instructional

coach is concerned with my success.” The cumulative percentage of positive responses for this construct was 58%, specifically 14 ratings of agree and 16 of strongly agree. The cumulative neutral rating for items in this construct was 25% with 13 ratings of neither agree nor disagree. The cumulative negative rating for this construct was 17% with four ratings of disagree and five ratings of strongly disagree.

Table 10

Mean Scores for Attitudes Towards Instructional Coaching Items

	N	Mean	Standard deviation
8.1 I would like to have more time to work with my instructional coach.	13	3.38	1.261
8.2 My instructional coach works with me to make sure I understand the skills I need to be a successful teacher.	13	3.46	1.391
8.3 I feel that my ability to facilitate learning has improved as a result of working with my instructional coach.	13	3.77	1.235
8.4 My instructional coach is concerned with my success.	13	3.85	1.281

Nine items addressed participant feelings of self-efficacy. Table 11 outlines the mean score per item in this construct. Items 9.1, 9.3, and 9.5, “I can effectively use a variety of assessment strategies,” “I am effective in getting students to learn,” and “I am supported professionally in my job,” all received the highest mean score for items in this construct at 4.15. Items 9.2 and 9.8, “My instructional coach helps me be a better teacher” and “I learn skills valuable to my teaching by working with my instructional coach,” both received the lowest mean score for items in this construct at 3.69. All high school mean responses to items in this construct were 4.00 or 4.50. The cumulative percentage of positive responses for this construct was 85%, specifically 77 ratings of

agree and 23 of strongly agree. The cumulative neutral rating for items in this construct was 9% with 11 ratings of neither agree nor disagree. The cumulative negative rating for this construct was 5% with five ratings of disagree and one rating of strongly disagree.

Table 11

Mean Scores for Items in Self-Efficacy Construct

	N	Mean	Standard deviation
9.1 I can effectively use a variety of assessment strategies.	13	4.15	.689
9.2 My instructional coach helps me be a better teacher.	13	3.69	1.109
9.3 I am effective in getting students to learn.	13	4.15	.376
9.4 I can use assessment data to help my students.	13	4.00	.577
9.5 I am supported professionally in my job.	13	4.15	.801
9.6 I feel competent in the facilitation of learning for my students.	13	4.08	.760
9.7 I feel competent in the teaching profession.	13	3.92	.760
9.8 I learn skills valuable to my teaching by working with my instructional coach.	13	3.69	.947
9.9 I can motivate students.	13	4.08	.277

The researcher performed cross tabulation analyses between items in the self-efficacy construct and items 8.2, “My instructional coach works with me to make sure I understand the skills I need to be a successful teacher,” 8.3, “I feel that my ability to facilitate learning has improved as a result of working with my instructional coach,” and 8.4, “My instructional coach is concerned with my success.” Six of the 13 respondents who agreed or strongly agreed with item 8.2 also agreed or strongly agreed with item 9.2, “My instructional coach helps me be a better teacher,” which was 46% of all survey

respondents (see Table 12). Fifty-three percent of respondents who responded positively to item 8.3 also agreed or strongly agreed with item 9.2 (see Table 13). Five of the six people who strongly agreed with item 8.4 also agreed or strongly agreed with item 9.2 (see Table 14).

Table 12

Crosstabulation between item 9.2 My instructional coach helps me be a better teacher and item 8.2 My instructional coach works with me to make sure I understand the skills I need to be a successful teacher.

		8.2 My instructional coach works with me to make sure I understand the skills I need to be a successful teacher.					Total
		1	2	3	4	5	
9.2 My instructional coach helps me be a better teacher.	1	1	0	0	0	0	1
	3	1	0	1	2	0	4
	4	0	1	1	3	0	5
	5	0	0	0	0	3	3
Total		2	1	2	5	3	13

Table 13

Crosstabulation between item 9.2 My instructional coach helps me be a better teacher and item 8.3 I feel that my ability to facilitate learning has improved as a result of working with my instructional coach.

		8.3 I feel that my ability to facilitate learning has improved as a result of working with my instructional coach.					Total
		1	2	3	4	5	
9.2 My instructional coach helps me be a better teacher.	1	0	0	1	0	0	1
	3	1	0	1	1	1	4
	4	0	1	0	4	0	5
	5	0	0	0	0	3	3
Total		1	1	2	5	4	13

Table 14

Crosstabulation between item 9.2 My instructional coach helps me be a better teacher and item 8.4 My instructional coach is concerned with my success.

		8.4 My instructional coach is concerned with my success.				Total
		1	3	4	5	
9.2 My instructional coach helps me be a better teacher.	1	0	1	0	0	1
	3	1	1	1	1	4
	4	0	2	0	3	5
	5	0	1	0	2	3
Total		1	5	1	6	13

Eight of the 13 respondents, or 62%, who responded positively to item 8.2, “My instructional coach works with me to make sure I understand the skills I need to be a successful teacher,” also agreed or strongly agreed that they were supported professionally in their job, item 9.5 (see Table 15). Sixty-nine percent of respondents, or nine of 13, who agreed or strongly agreed with item 8.3, “I feel that my ability to facilitate learning has improved as a result of working with my instructional coach,” also agreed or strongly agreed with item 9.5 (see Table 16). Sixty-two percent of respondents, or 8 of 13, agreed or strongly agreed that their “instructional coach works with me to make sure I understand the skills I need to be a successful teacher,” item 8.2, as well as agreed or strongly agreed with item 9.6, “I feel competent in the facilitation of learning for my students” (see Table 17). Finally, 69% of respondents who agreed or strongly agreed with item 8.3, “I feel that my ability to facilitate learning has improved as a result of working with my instructional coach,” also responded positively to item 9.6, “I feel competent in the facilitation of learning for my students” (see Table 18).

Table 15

Crosstabulation between item 9.5 I am supported professionally in my job and item 8.2 My instructional coach works with me to make sure I understand the skills I need to be a successful teacher.

		8.2 My instructional coach works with me to make sure I understand the skills I need to be a successful teacher.					Total
		1	2	3	4	5	
9.5 I am supported professionally in my job.	2	1	0	0	0	0	1
	4	1	1	1	4	1	8
	5	0	0	1	1	2	4
Total		2	1	2	5	3	13

Table 16

Crosstabulation between item 9.5 I am supported professionally in my job and item 8.3 I feel that my ability to facilitate learning has improved as a result of working with my instructional coach.

		8.3 I feel that my ability to facilitate learning has improved as a result of working with my instructional coach.					Total
		1	2	3	4	5	
9.5 I am supported professionally in my job.	2	0	0	1	0	0	1
	4	1	1	0	5	1	8
	5	0	0	1	0	3	4
Total		1	1	2	5	4	13

Table 17

Crosstabulation between item 9.6 I feel competent in the facilitation of learning for my students and item 8.2 My instructional coach works with me to make sure I understand the skills I need to be a successful teacher.

		8.2 My instructional coach works with me to make sure I understand the skills I need to be a successful teacher.					Total
		1	2	3	4	5	
9.6 I feel competent in the facilitation of learning for my students.	2	1	0	0	0	0	1
	4	0	1	2	4	2	9
	5	1	0	0	1	1	3
Total		2	1	2	5	3	13

Table 18

Crosstabulation between item 9.6 I feel competent in the facilitation of learning for my students and item 8.3 I feel that my ability to facilitate learning has improved as a result of working with my instructional coach.

		8.3 I feel that my ability to facilitate learning has improved as a result of working with my instructional coach.					Total
		1	2	3	4	5	
9.6 I feel competent in the facilitation of learning for my students.	2	0	0	1	0	0	1
	4	0	1	1	5	2	9
	5	1	0	0	0	2	3
Total		1	1	2	5	4	13

Eight items explored participant dispositions about the field of teaching and their intentions to remain in the profession. The first set of items within this construct examines positive dispositions towards the profession. Table 19 outlines the mean score per item in this construct. Items 10.1 and 10.5, “I feel good about my choice to become a teacher” and “I like teaching,” received the highest mean score for items in this construct

at 4.31. The lowest mean score for items in this construct was 1.62, which was received by item 10.4, “I am currently looking for opportunities for a career outside of teaching,” which is actually a positive response towards teaching as a career. When considering only items in this construct specifically pertaining to positive feelings about teaching (items 10.1, 10.2, 10.5, 10.6), the cumulative percentage of positive responses was 81%, specifically 23 ratings of agree and 19 of strongly agree. The cumulative neutral rating for these items was 9% with 10 ratings of neither agree nor disagree. There were no ratings of disagree or strongly disagree.

Two items in this construct, items 10.3 and 10.4, investigated the intent to remain in teaching as a career. Item 10.4, “I am currently looking for opportunities for a career outside of teaching,” had the lowest mean score for the items in this construct at 1.62. Item 10.3, “I intend to teach for a few more years but will eventually consider other options outside of education,” received a slightly higher mean score of 2.38. Respondents indicating a sense of isolation or feelings of burnout were in elementary and high school settings. The cumulative negative rating for these items was 65%, specifically two ratings of disagree and 15 ratings of strongly disagree. Four ratings of neither agree nor disagree comprised the cumulative neutral response for these items, which was 15%. Only 19%, four agree and one strongly agree, of the cumulative response was positive on these specific items.

Table 19

Mean Scores for Items in Positive Personal Dispositions Towards Teaching Construct

	N	Mean	Standard deviation
10.1 I feel good about my choice to become a teacher.	13	4.31	.751
10.2 I am optimistic about the likelihood that I will continue teaching as a career.	13	4.15	.689
10.3 I intend to teach for a few more years but will eventually consider other options outside of education.	13	2.38	1.502
10.4 I am currently looking for opportunities for a career outside of teaching.	13	1.62	1.044
10.5 I like teaching.	13	4.31	.751
10.6 I am satisfied with my job as a teacher.	13	3.92	.760

To further explore any negative dispositions about teaching, two items asked about isolation and burnout; responses are summarized in Figure 2. Item 10.7, “I feel isolated,” and item 10.8, “I feel a sense of burnout,” asked participants to choose a yes or no response. Two of 13 respondents, 15%, indicated a feeling of isolation; five of 13 respondents, 38%, indicated a feeling of burnout. Only one of the two participants, 50%, indicated a feeling of isolation had sought help; while four of five participants, 80%, indicated burnout had sought help.

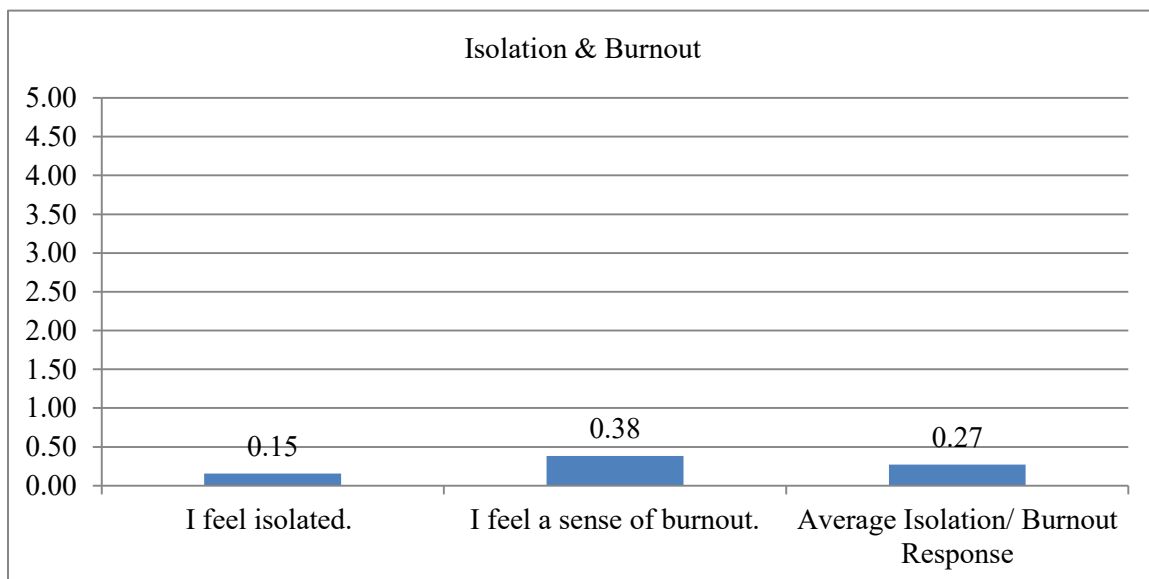


Figure 2. Isolation and Burnout.

Qualitative Data Collection

In addition to collecting and analyzing quantitative data, the research design also called for qualitative data collection in the form of focus groups and one-on-one interviews. The researcher hoped to use survey data, focus group responses, and individual interview responses to generate a more precise interpretation of participant perceptions of the impact of instructional coaching on their perceived self-efficacy in the facilitation of learning for their students. Through the use of descriptive statistical analysis of the quantitative data, the researcher formulated follow-up topics to explore more deeply with focus groups, namely instructional coaching impact on instructional methods, lesson planning and development of curriculum, student collaboration, critical thinking, and assessment methods. The researcher then planned to code themes from focus group data to identify any topics in need of a final exploration through individual interviews. Recruitment for focus group participants, however, proved unproductive;

after contacting 50% of the target population for possible participation in focus groups, the researcher elected to pursue possible candidates for individual interviews, understanding that this format would then be the sole avenue for qualitative data collection. The search for individual interview participants was effective; a total of three beginning teachers were interviewed. The researcher was able to arrange interviews that involved teachers from elementary, middle, and high school settings; in addition, teacher participants in individual interviews were second-, third-, and fourth-year teachers. Table 20 summarizes the demographics of interview participants. In analyzing data from individual interviews, the researcher identified meaningful themes that appeared across participant responses.

Table 20

Demographics of Interview Participants

Setting	Gender	Years of Experience	Subject(s)
Elementary	Male	3	Math/Science
Middle	Female	4	English/Language Arts
High	Female	2	Foreign Language

When asked “What stands out for you in your experiences as a beginning teacher,” all participants alluded to feelings of being unprepared and the amount of required paperwork. Participant A shared, “What stands out most is how unprepared you are. You go to college . . . but they don’t teach you about the paperwork involved.” Participant A continued by remarking on the disconnect between methods of record keeping taught in college and methods expected of classroom teachers which are more technology-based, later returning to the initial feeling: “You’re always going to find that you’re lacking . . . always going to be a learner.” Participant B affirmed feelings of unpreparedness, stating, “I spent so many hours late into the evening just trying to plan

and still not feeling ready . . . planning day by day.” Participant C reiterated, “most surprising to me was all the stuff that didn’t have to do with teaching . . . paperwork and stuff.”

When asked about the mentoring process in the county, participant responses highlighted the enormous load mentors carried. Participants B and C spoke to the amount of work the instructional coaches/mentors seemed to have. Participant B speculated,

I feel like she had a huge load . . . I wasn’t getting the attention that I need as a beginning teacher. I feel that she was great and did all that she could do to help me but she was just burnt out. I saw that and didn’t want to be a burden.

Participant A did not understand what support the instructional coach was supposed to provide as a mentor:

I didn’t really get to see much of her then except when it came to filing . . . paperwork or dealing with mCLASS. In my mind I guess I thought that was kind of her role was to facilitate with data managing and manage with testing. That was it.

Participant A acknowledged that “most of my mentorship came from surrounding teachers helping me.”

Commonalities of frustrations were evident in responses to the question, “As a new teacher, what are your greatest frustrations?” Participants named paperwork, planning, classroom management, the reality of informal policies, and feelings of not being valued by supervisors as frustrations. Participant B was very frustrated by the reality of having students who were failing because they were not doing their work, but the administrative expectation was that “I could not fail my students . . . students who

didn't turn in their work, I had to give them credit for the missing assignments" which made it feel as if, "in other words, you are telling me I could just show up for work and not do my job and I could still get paid for it." Participant C flatly declared, "It's like they don't value us." The follow-up question to frustrations aimed at how the instructional coach impacted these frustrations. Participant A recalled,

She has helped me out by cooling me down . . . her major thrust is support. She sympathizes and she tells me she understands, and as long as there is someone out there that does understand, it gives you a little breather knowing someone does understand.

Participant B emphasized the instructional support received:

always looking for resources for me . . . then again, it was just a bunch of resources, and I still had to filter through them and decide what was going to work. That helped because I didn't have to go digging for information and for plans. The fact that they were there was very encouraging. A point person was helpful.

Participant C summed up with, "She was there and open and welcome to do whatever I needed and to introduce me to other people and help."

During the interview, the researcher zeroed in on constructs with lower mean scores from the quantitative survey. Elements 4a, 4b, and 4c revolve around instructional methods, planning, and teaching strategies and all had cumulative mean averages from 3.17 to 3.28. Participants in the individual interviews discussed the degree to which instructional coaching impacted these elements of Standard 4. Initially, Participant A mused, "she hasn't really affected them," but then conceded that the coach influenced them "in the way by what I pay attention to her. How I direct my lesson, how I change

up my lesson . . . is normally from something she has said or brought attention to or challenged me to find out.” Participant C flatly claimed, “She hasn’t really impacted them at all, honestly,” later adding that the coach had provided assistance with classroom management issues. Further, lesson planning and curriculum development were not cited as impacted heavily by coaching. Participant B disclosed, “Again, with curriculum development, they didn’t have an emphasis on that”; but, when considering the second instructional coach she had worked with, related, “They would come and . . . we would talk about some of the concepts . . . we would do some planning together and really thinking through the standards and how we can implement that.” Participant A recognized that the prior year the instructional coach had been more help than during the previous year when aiding this teacher’s implementation of a prescribed reading curriculum:

That was my problem last year. Making sure everything was being taught and covered, and we weren’t losing anyone even though the standards don’t match up with the actual curriculum very well . . . she made it okay to do what we needed to do to make it work.

The researcher chose to use questions based on the lowest scoring items from the Learning and Innovation Skills construct to probe beginning teacher perceptions regarding the impact of instructional coaching on their use of student collaboration and critical thinking. Both Participants A and B referenced one lesson focused on student collaboration which had been developed with the input of an instructional coach; Participant C was unable to recall any work with an instructional coach on that topic. Similarly, Participants A and B both referenced input from instructional coaches on programs, specifically Notice and Note: Strategies for Close Reading and SchoolNet, as

they considered support in enhancing critical thinking for their students. Participant A expanded on how signposts could be used in any reading curriculum but never fleshed out the critical thinking aspects of its use. Participant B mentioned examining specific questions in SchoolNet that would challenge student thinking beyond citing evidence to more analysis-based thinking. Participant C was unable to recall any instructional coach support in working with critical thinking.

Element H, dedicated to assessment methods, was the last area explored based on quantitative data. All participants talked about formative and summative types of assessment. Participant A spoke about the shift from assessment as only a graded assignment to including more informal methods: “She made it where it was okay to just do an observational kind of assessment or just get a feel for them.” Participant B remarked on a tendency to do more formative and less summative assessments; when the researcher asked specifically, “Have your instructional coaches helped you move toward doing formative assessments or helped you find different ones you could use,” she indicated that they had helped, but she felt ineffective in utilizing the variety they had suggested. Participant C said her instructional coach “had no influence over that.”

The researcher also asked for perceptions on what would make the instructional coaching and mentoring program in which they participated ideal and most worthwhile. All participants cited a need for more face-to-face interaction with coaches, either by having coaches assigned to only one location or by increasing the frequency of their meetings with beginning teachers. Participant B also cited the emotional support, encouragement, and suggestions as “very necessary.” When asked “What methods of beginning teacher support do you feel are most worthwhile,” Participant C unequivocally returned “Nothing that I’ve encountered.” When the researcher redirected the question to

explore what could be offered, Participant C answered, “I think they could offer something like a support group,” shorter meetings, “being more mindful of our time,” and “having that support and not feeling like you’re shoved to the side.”

The researcher ended the interviews by pursuing feelings of self-efficacy and intention to persist in the profession. Participant A sees levels of efficacy as fluctuating in relation to current topics of study and the ebbs and flows of classroom life: “It’s rather a confusing thing for me . . . it’s like ‘I’ve got to do better than this, why can’t I figure it out?’ Then everybody says ‘You’re doing fine; you’re making growth.’” Participant B allowed, “I’m no longer just trying to stay afloat; that I can actually swim. I feel like I can eventually thrive, and I’m not just struggling to stay alive.” Participant C recognized that she is on a growth-path in her self-efficacy: “I’m getting there. Absolutely better now than when I started . . . I think it’s getting better, but it could improve.” The researcher pursued the intent to remain in the profession by seeking to know where participants saw themselves in 5 years. Participant A loves teaching and “would be shocked if I wasn’t teaching in 5 years. I would be disappointed if I wasn’t.” Participant B plans to do something outside of public education within 5 years: “I do still want to instruct but not in the traditional setting. Not in an educational institution. I don’t know what it looks like, but it’s definitely out there.” Participant C intends to remain in teaching for the next 5 years but also admitted,

I don’t see myself staying in a classroom for 30 years. I just don’t. I think I would get stuck . . . I could see myself maybe in a different role . . . I think eventually I may try something else because I may get burned out.

Although the self-efficacy construct received the highest mean score, the individual interview responses indicated an awareness of the participants that there was much room

for growth in becoming effective in the craft of teaching. Furthermore, only one of the three participants fully intends to continue teaching as a classroom teacher, and one of the participants intends to leave the profession completely within the foreseeable future.

Summary

The researcher collected and analyzed quantitative and qualitative data for this study and summarized that data in this chapter. Participants included beginning teachers in elementary, middle, and high school settings in the target district with 2, 3, or 4 years of experience who contributed to this study through survey responses and individual interviews. Analysis of the data informed conclusions related to the research question that will be discussed in Chapter 5. The researcher sought to collect multiple forms of data to construct a comprehensive understanding of participant perceptions regarding the impact of instructional coaches on the self-efficacy of beginning teachers in their facilitation of student learning. Discussion of these conclusions as well as limitations and recommendations for further study is communicated in Chapter 5.

Chapter 5: Discussion

Introduction

This study was designed to examine the perceived self-efficacy of beginning teachers in the constructs of Standard 4 of the North Carolina Professional Teaching Standards, specifically the facilitation of student learning and the impact of instructional coaching on those perceived levels of self-efficacy. The setting for this study was a rural district in western North Carolina which has opted to use full-time instructional coaches in a mentor role for all initially licensed teachers in the system while concurrently serving veteran teachers in a coach role. Participants in the study were beginning teachers with 2, 3, or 4 years of experience.

The researcher began this study by conducting a review of the related literature that explored the history and development of mentoring, induction, and instructional coaching programs; concerns specific to beginning teachers; self-efficacy; constructs underpinning Standard 4; and levels and causes of attrition and turnover. The study sought to address the research question, “What is the impact of instructional coaches on beginning teacher self-efficacy in the facilitation of learning?” The researcher deemed this an important issue because Standard 4, Teachers Facilitate Learning for Their Students, comprises the largest section of the teacher evaluation rubric by which all teachers, beginning and veteran alike, are evaluated. Any support designed for beginning teachers should aid development in the skills delineated in Standard 4.

The researcher designed a mixed-methods study collecting and analyzing quantitative and qualitative data. Quantitative data were gathered through a survey collecting 5-point Likert scale responses. Qualitative data were to be collected through focus group and individual interviews. The researcher sought to use multiple types of

data to create a detailed depiction of participant perceptions of how the support of instructional coaches impacted their self-efficacy related to facilitating student learning. This chapter focuses on the researcher's conclusions drawn from an analysis of data along with suggestions for further study.

Conclusions

“The North Carolina Professional Teaching Standards are the basis for teacher preparation, teacher evaluation, and professional development” and were based on an understanding of what teachers will need to know and be able to do as education moves deeper into the 21st century (McREL, 2015, p. 7). Standard 4: Teachers Facilitate Learning for Their Students is discernably aligned to the Learning and Innovation Skills, also known as the 4 Cs in the P21 Framework for 21st Century Learning, specifically communication, critical thinking, collaboration, and creativity (Partnership for 21st Century Skills, 2015). As these skills are integral to Standard 4, the researcher paid particular attention to data gathered on these elements and noted that they received the lowest mean scores from the quantitative data analysis.

Ongoing support for beginning teachers is critical for them to acquire an understanding of and ability to help students develop crucial thinking skills. Koh (2002), in examining a program designed to create an educational shift in Singapore, determined that “critical thinking involves specific skills, that inclinations and the desire to think are important, and that a culture of thinking to promote critical thinking is needed” (p. 258). Although American education has been influenced by thinking taxonomies since the mid-20th century, a continual call for a change in the way we teach these skills has permeated the educational scene. Nearly 50 years after Bloom's Taxonomy was introduced, Halpern (1998) stated that the “goal of helping students improve their critical-thinking

abilities represents a major change in the way the teaching and learning process is viewed” (p. 450). It should also be noted that “not all beginning teachers may be good at critical thinking” in their own professional practice (Harrison, Lawson, & Wortley, 2005, p. 437). Cognitive science research shows that thinking is not just a skill like riding a bicycle but more a process intertwined with content of thought and that “without background knowledge and practice, they [students] probably will not be able to implement” the critical thinking and problem-solving processes their teachers have reviewed (Willingham, 2008, p. 21). If beginning teachers do not perceive support in cultivating the ability to teach these skills, critical thinking abilities among students will continue to be a concern.

Element 4e (development of critical thinking and problem-solving skills) and Element 4f (development of collaboration and leadership skills) both received the lowest mean item scores on the survey items. Examining qualitative data from interviews revealed that participants mention only minimal support from instructional coaches on these skills, specifically one lesson or one resource or program attributed to support student critical thinking, problem solving, or collaboration. Elementary and middle school survey responses on these items associated with critical thinking, collaboration, and leadership skills were disagree or strongly disagree; high school responses were neutral. Quantitative data on the item “I would like to have more time to work with my instructional coach” received a mean score of 3.38 and a cumulative percent positive of 46%, indicating that most survey participants felt that they were meeting with their instructional coaches an adequate amount of time. However, additional feedback from individual interviews indicated that face-to-face meetings with instructional coaches were infrequent and that coaches may utilize that meeting time to address and support more

immediate beginning teacher needs such as classroom management or data support. The data suggest that instructional coach mentors must be mindful of the need to balance support for immediate beginning teacher concerns with more intentional support in nurturing critical thinking skills among students as well as helping teachers develop a deep and comprehensive understanding of what critical thinking skills are and how to teach them. Once teachers are fluent at leveraging critical thinking skills in lessons, students should be able to engage with the content at higher levels of rigor.

Likewise, beginning teachers must be taught how to foster collaboration of students in their classrooms. Collaboration is essential for survival; absorbing and transmitting knowledge depend heavily on “creating, sustaining, and expanding a community” in which members are critically dependent on each other because no one learner knows it all (Brown, 1997, p. 411). To maximize the benefits of collaboration, teachers must understand best practices

so that students are positively interdependent, individually accountable, promote each other’s success, appropriately use social skills, and periodically process how they can improve the effectiveness of their efforts. Understanding these basic elements allows precise cooperative learning procedures to be engineered and gives faculty a set of tools for intervening in ineffective learning groups.

(Johnson et al., 2013, p. 16).

There is a range of skills involved in collaboration which includes “communication skills, structures for inquiring, deciding, problem solving, resolving differences, capacities for self assertion, integration, metacognition, and self control” (Garmston, 1997, p. 1). As with any change, in order to fully integrate collaboration in our classrooms, a change in school culture is required; and change does not happen in a vacuum. Without mentoring

and support, beginning teachers will be unlikely to effectively foster these skills in their own classrooms and students, much less contribute to systemic school change needed to advance these skills throughout the school community.

The analysis of the data collected through this study supported findings in the literature correlated to beginning teacher self-efficacy and levels of support received during their first years of teaching. Teacher self-efficacy is an important feature of successful teaching and is associated with teacher and student outcomes (Swackhamer et al., 2009). The literature confirmed the finding that efficacy is not static and is related to the current state of the classroom and the teacher as well as the fact that self-efficacy is tied to a belief in one's abilities and not tied to actual ability level (Holzberger et al., 2013; Tschannen-Moran et al., 1998). Shidler's (2009) study confirmed the benefits of coaching on teacher self-efficacy. Shidler found that building levels of efficacy helped teachers move instruction toward classroom best practices. Coaching that focused on specific content, modeling of techniques, observation, and one-on-one consultation amplified the impact of coaching on self-efficacy (Shidler, 2009). The most successful model cited in the study was "one that focused coaching for instructional efficacy in specific content and teaching methods and saw the coaches directly facilitate and support theory to practice" (Shidler, 2009, p. 459).

The self-efficacy construct received the highest mean score of the survey constructs and a cumulative percent positive of 85%, apparently indicating that beginning teachers perceived they had high levels of self-efficacy. Elementary and high school respondents to the survey scored the construct more highly than middle school respondents. Qualitative data reinforced the quantitative high school responses as Participant C rated her self-efficacy at 6 or 7 on a scale of 10. Both the elementary and

middle school interview participants, however, were more reserved in their comments, conceding a growth in self-efficacy over time and relative to the current mood of the classroom. Considering self-efficacy scores should be related to attitudes towards instructional coaches, the researcher noted the middle school respondents rated the construct most highly with a mean score of 3.83, giving a 5.00 aggregate rating, or strongly agree, to the specific item “My instructional coach is concerned with my success”; the high school aggregate rating on the same item was 4.00, or agree; and the elementary cumulative score for the item was 3.38. The researcher saw a correlation between self-efficacy levels and opinions of the instructional coaches. Although the researcher acknowledges some concern over the relatively high self-efficacy ratings from beginning teachers, research suggests that

it is most fruitful when teachers slightly overestimate their actual teaching skills, as their motivation to expend effort and to persist in the face of setbacks will help them to make the most of the skills and capabilities they do possess. (Tschannen-Moran & Hoy, 2007, p. 5)

Additionally, Woolfolk and Hoy (1990) observed that when considering teacher efficacy, it was important to understand exactly how the concept was defined particular to that research or discussion of efficacy because “identifying high and low efficacy teachers is not a simple task” and that the relationship between teacher efficacy and context is complex and dependent on many factors (p. 89).

The researcher cross-tabulated items to investigate relationships relating to self-efficacy and coaching. The results indicated that beginning teachers perceive that working with instructional coaches impacts their performance in the facilitation of learning. In his 1992 study, Ross stated,

Although no previous study has linked teacher efficacy to coaching, such a link is credible. Teachers who believe they will make a difference are more likely to see coaching as an opportunity to expand and consolidate their teaching techniques. In contrast, teachers who see student learning as swamped by uncontrollable forces might regard coaching as nothing but more work. Similarly, teachers with strong beliefs in their own effectiveness would be more willing to accept the risk of negative feedback from a coach. Coaches are more likely to be motivated by high-efficacy teachers who believe instructional improvement is worthwhile. (p. 52)

The majority of survey respondents agreed that they were supported professionally in their jobs as well as that their instructional coaches worked with them to hone skills needed to become successful teachers but did not overwhelmingly indicate that more time with their coaches was needed. These results were similar to findings in Shidler's (2009) study which "imply that more time is not always better. It is the type and quality of interaction that becomes a deciding factor" (p. 459). Furthermore, more than two thirds of respondents agreed that their facilitation of student learning has improved through work with an instructional coach and agreed that they were supported professionally in their jobs. Nearly 70% of respondents agreed that instructional coaching has improved their facilitation of learning and that they feel competent facilitating learning for their students. In light of these findings, the researcher suggests that instructional coaches should focus on finding ways to maximize the time they already spend mentoring new teachers as opposed to finding more time to do so. Coaches need to ensure to split time spent with beginning teachers between addressing their needs and developing the more sophisticated skills spelled out in Standard 4. If beginning teachers who work with a

coach experience higher levels of self-efficacy in the facilitation of student learning, classroom lessons should reflect a broad and successful use of learning and innovation skills.

Limitations

One possible limitation the researcher identified with this study was the lack of breadth. This study was conducted from schools in one district. For this reason, results may not be generalized to another district (Creswell, 2014). A second possible limitation was the particular iteration of the mentoring program in the target district. The researcher was interested in examining districts whose mentors did not have classroom duties. North Carolina requires all school districts to offer an induction and mentoring program; however, funding for mentors no longer appears in the state budget so the North Carolina Mentor Task Force suggested in 2009 that districts use Title II funds, among others, to fund mentoring programs. In the initial stages of this research project, the researcher was only able to identify 16 districts that used nonclassroom personnel of any kind as mentors on a part- or full-time basis. Districts that use full-time personnel as mentors only, with no additional instructional coaching duties, may yield different results. The final limitation identified with this study was the participation challenges. The researcher initially planned three methods of data collection but was unable to utilize all three due to a lack of engaged participants. Additionally, participants engaged in the quantitative and qualitative data collection were limited, so the small number of responses further negatively impacts the generalizability of the results of this study (Ary, Jacobs, Sorenson, & Walker, 2013).

Recommendations

Based on the current limitations of this study, the researcher suggests further

investigation into the impact of working with mentors and instructional coaches on the perceived self-efficacy on teacher facilitation of student learning. First, the researcher suggests further study with a larger sample size. A larger sample size would result in higher validity and improve the generalizability of the research findings.

Additionally, the researcher suggests further research with a larger sample size in multiple district settings. Further insight could be gained by comparing and contrasting participant responses engaged in various instructional coaching and mentoring programs.

Finally, while this study focused solely on the impact on beginning teacher perceived self-efficacy, the researcher believes that this topic of investigation is worthy of further study for veteran teachers working with instructional coaches as well as beginning teachers working with mentors who have no other job functions. A study of wider breadth may identify additional needs for instructional coaching in specific elements of Standard 4.

Summary

The North Carolina Professional Teaching Standards clearly outline what teachers should know and be able to do in the classroom and the larger school context (McREL, 2015). Standard 4 specifically guides teachers in expediting learning for their students in all curricular areas. The purpose of this study was to answer the question, “What is the impact of instructional coaches on beginning teacher self-efficacy in the facilitation of learning?” The researcher collected data that indicate that instructional coach support impacts self-efficacy of beginning teachers, specifically in facilitating student learning. The researcher reached this conclusion after analyzing quantitative and qualitative data. While all participants did not indicate the same level of positive feelings regarding all aspects of the elements which make up Standard 4, data suggest that

beginning teachers believe in their ability to facilitate student learning and believe that they are supported professionally in their jobs.

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Appendix A
Survey Questionnaire

Instructional Coaching of Beginning Teachers Survey

Your participation in the research survey is valuable as we attempt to better understand the impact of instructional coaching on beginning teachers' perceptions of success.

The survey will ask you to consider several aspects of your experience working with an instructional coach as a beginning teacher. Your individual responses will not be given to your instructional coach, your school administration, or school system, so please answer each question honestly.

By clicking NEXT below, you consent to participate in this study. You may choose not to participate at any time before clicking submit at the end of this survey. Remember, no identifying information, such as IP address or email, will be collected through this form.

Each topic is presented as a separate section in a new screen and all sections have the following instructions:

Respond to the following items by marking the number on a scale from 1 to 5 that describes the degree to which the statement best matches your feelings about your work with instructional coaches. Use the following scale to respond to each item: 5, Strongly Agree; 4, Agree; 3 Neither agree nor disagree; 2, Disagree; 1, Strongly Disagree

Student Development		SA				SD
IM/4a	My instructional coach helps me differentiate instruction.	5	4	3	2	1
IM/4a	My instructional coach helps me organize subject matter in my teaching.	5	4	3	2	1
IM/4a	My instructional coach helps me develop strategies to incorporate special accommodations for my students.	5	4	3	2	1
IM/4a	My instructional coach helps me create and maintain a successful learning environment.	5	4	3	2	1
IM/4a	My instructional coach helps me frame my instructional decisions based on my students' learning.	5	4	3	2	1
IM/4a	My instructional coach helps me successfully teach students with a variety of ability levels.	5	4	3	2	1
Instructional Planning						
IM/4b	My instructional coach informs me of available support services and personnel I can use to meet student needs.	5	4	3	2	1
IM/4b	My instructional coach helps me teach to content standards.	5	4	3	2	1

IM/4b	My instructional coach helps me develop lessons that are respectful of the cultural backgrounds of my students.	5	4	3	2	1
IM/4b	My instructional coach has planned lessons with me.	5	4	3	2	1
IM/4b	My instructional coach helps me understand how to analyze student data to guide my instruction.	5	4	3	2	1
IM/4b	My instructional coach helps me understand my curriculum.	5	4	3	2	1
IM/4b	My instructional coach helps me develop my curriculum.	5	4	3	2	1
IM/4b	My instructional coach helps me plan lessons that utilize resources outside my classroom.	5	4	3	2	1
IM/4h	My instructional coach helps me use assessment data to design instruction.	5	4	3	2	1
Teaching Strategies						
IM/4c	My instructional coach helps me use a variety of teaching strategies to provide students with instruction that is effective for them.	5	4	3	2	1
IM/4c	My instructional coach helps me develop and improve a repertoire of teaching strategies, skills, and techniques.	5	4	3	2	1
IM/4c	My instructional coach helps me motivate students.	5	4	3	2	1
Learning and Innovation Skills						
IM/4d	My instructional coach helps me integrate and utilize technology in my lessons to maximize student learning.	5	4	3	2	1
IM/4e	My instructional coach helps me develop and utilize critical thinking questions.	5	4	3	2	1
IM/4f	My instructional coach helps me create lessons that require students to collaborate.	5	4	3	2	1
IM/4g	My instructional coach helps me communicate effectively with my students.	5	4	3	2	1
Assessment Methods						
ASM/4h	My instructional coach assists me in analyzing student work.	5	4	3	2	1
ASM/4h	My instructional coach helps me in assessing student needs.	5	4	3	2	1
ASM/4h	My instructional coach helps me effectively create classroom assessments other than tests.	5	4	3	2	1
ASM/4h	My instructional coach helps me use North Carolina's academic standards to create classroom assessments.	5	4	3	2	1
ASM/4h	My instructional coach helps me understand and use summative assessment in my classroom.	5	4	3	2	1
ASM/4h	My instructional coach helps me use a variety of methods to assess my students.	5	4	3	2	1
ASM/4h	My instructional coach helps me develop a repertoire of assessment strategies.	5	4	3	2	1

ASM/4h	My instructional coach helps me provide evidence of student learning in my classroom.	5	4	3	2	1
ASM/4h	My instructional coach helps me evaluate student progress using a variety of assessment data.	5	4	3	2	1
ASM/4h	My instructional coach helps me understand and use formative assessment in my classroom.	5	4	3	2	1
ASM/4h	My instructional coach helps me create quality tests for students.	5	4	3	2	1
Beginning Teacher Issues						
BTI	My instructional coach provides information that helps me understand teacher evaluation standards and processes.	5	4	3	2	1
BTI	My instructional coach provides information on the Code of Ethics for North Carolina educators.	5	4	3	2	1
BTI	My instructional coach provides information that helps me interpret school and district policies and procedures.	5	4	3	2	1
BTI	My instructional coach provides support with managing classrooms.	5	4	3	2	1
PrSp	I have regularly scheduled meetings with my instructional coach.	5	4	3	2	1
PrSp	Instructional coaching eases the transition into teaching.	5	4	3	2	1
PrSp	Instructional coaching is valuable to new teachers.	5	4	3	2	1
PrSp	Instructional coaching increases beginning teacher retention.	5	4	3	2	1
PrSp	Meetings with my instructional coach improved my ability to perform my teaching duties.	5	4	3	2	1
PrSp	Instructional coaching assists beginning teachers in becoming professionally competent.	5	4	3	2	1
PrSp	Feedback from my instructional coach's observations helped me develop the skills I need to carry out my teaching responsibilities.	5	4	3	2	1
PrSp	Instructional coaching helps address individual teacher development.	5	4	3	2	1
Instructional Coaches						
ATT	My instructional coach has what it takes to help teachers become better at teaching.	5	4	3	2	1
ATT	I would like to have more time to work with my instructional coach.	5	4	3	2	1
ATT	My instructional coach works with me to make sure I understand the skills I need to be a successful teacher.	5	4	3	2	1
ATT	I feel that my ability to facilitate learning has improved as a result of working with my instructional coach.	5	4	3	2	1

ATT	My instructional coach is concerned with my success.	5	4	3	2	1
Self-Efficacy						
EFF	I can effectively use a variety of assessment strategies.	5	4	3	2	1
EFF	My instructional coach helps me be a better teacher.	5	4	3	2	1
EFF	I am effective in getting students to learn.	5	4	3	2	1
EFF	I can use assessment data to help my students.	5	4	3	2	1
EFF	I am supported professionally in my job.	5	4	3	2	1
EFF	I feel competent in the facilitation of learning for my students.	5	4	3	2	1
EFF	I feel competent in the teaching profession.	5	4	3	2	1
EFF	I learn skills valuable to my teaching by working with my instructional coach.	5	4	3	2	1
EFF	I can motivate students.	5	4	3	2	1
Dispositions						
D	I feel good about my choice to become a teacher.	5	4	3	2	1
D	I am optimistic about the likelihood that I will continue teaching as a career.	5	4	3	2	1
D	I intend to teach for a few more years but will eventually consider other options outside of education.	5	4	3	2	1
D	I am currently looking for opportunities for a career outside of teaching.	5	4	3	2	1
D	I like teaching.	5	4	3	2	1
D	I am satisfied with my job as a teacher.	5	4	3	2	1
D	I feel isolated.	5	4	3	2	1
D	I feel a sense of burnout.	5	4	3	2	1

Time on the Facilitation of Student Learning

PrSp	During the 2015/2016 school year, how many hours do you estimate that you actually met with your instructional coach in an average month?	<user data entry>
PrSp	During the 2015/2016 school year, how much of the time you met with your instructional coach was spent discussing issues of the facilitation of student learning?	<user data entry>

Demographic Data

Gender	male	female			
Age	<user data entry>				
How many years have you been employed as a teacher (including this year)?	<user data entry>				
School setting, (choose all that apply)	elementary	middle	high		
Grade levels you teach (choose all that apply)	K 1 2 3 4 5 6 7 8 9 10 11 12				
What best describes the subjects that you teach? (check all that apply, include other)	ELA	Math	Science	SS	Other
Do you currently have an instructional coach?	yes	no			
How many years have you worked with this instructional coach (including this year)?	<user data entry>				
How many different instructional coaches have you worked with in this school system, including your current coach?	<user data entry>				
Are you currently employed as a classroom teacher?	yes	no			
If you are not currently a classroom teacher, please describe your instructional assignment:	<user data entry>				

Appendix B

Focus Group Protocol

Focus Group Protocol

Script:

Thank you all for coming. I appreciate your taking the time to help me better understand the instructional coach model as well as beginning teacher needs and perceptions.

My research question is, “What is the impact of instructional coaches on beginning teacher self-efficacy on the facilitation of learning?” One of the professional teaching standards that is heavily evaluated is Standard 4, Teachers Facilitate Learning for their Students. Instructional and assessment methods are at the heart of this standard. As beginning teachers, I want to know what you think instructional coaches and the induction and mentoring program have done to help you in these areas and how you feel they’ve done it.

I have informed consent forms for each of you to look at and sign.

I am going to record this session so I can transcribe this and evaluate it later.

I’d like to start by going around the group and have everyone state their name, what grade level you teach, and years of experience?

Focus group discussion prompt 1: How has your instructional coach impacted your instructional methods?

Focus group discussion prompt 2: How has your instructional coach impacted your assessment methods?

Focus group discussion prompt 3: How has the induction and mentoring program in this county impacted your teaching?

Focus group discussion prompt 4: How has your instructional coach impacted your career decisions since you began this job?

Appendix C

Interview Protocol

One-on-one Interview Protocol

Thank you for coming. I appreciate your taking the time to help me better understand the instructional coach model as well as beginning teacher needs and perceptions.

My research question is, “What is the impact of instructional coaches on beginning teacher self-efficacy on the facilitation of learning?” One of the professional teaching standards that is heavily evaluated is Standard 4, Teachers Facilitate Learning for their Students. Instructional and assessment methods are at the heart of this standard. As a beginning teacher, I want to know what you think instructional coaches and the induction and mentoring program have done to help you in these areas and how you feel they’ve done it.

I have an informed consent for you to look at and sign. Remember, what you say here is confidential.

I am going to record this session so I can transcribe and evaluate it later.

I’d like to start recording some demographic information. What subject and grade level do you teach? And, how many years have you been teaching?

QUESTIONS

What stands out for you in your experiences as a beginning teacher?

Tell me about the mentoring process in your county.

Tell me about the beginning teacher meetings throughout the school year.

As a new teacher, what are your greatest frustrations?

How has your instructional coach impacted your frustrations?

Tell me about your instructional methods?

How has your instructional coach impacted your instructional methods?

Tell me about your assessment methods?

How has your instructional coach impacted your assessment methods?

What would ideal instructional coach support look like?

What methods of beginning teacher support do you feel are most worthwhile?

Tell me about your personal efficacy--your ability to produce an effect.

Tell me about your career plans: Where do you see yourself in five years? Why?

Is there anything else that you'd like to tell me?