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INSTRUCTIONAL COACHING AND STUDENT ACHIEVEMENT

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INSTRUCTIONAL COACHING AND STUDENT LITERACY GROWTH:

A Research Study

BY

LEE ANN CALDWELL LEWELLEN

Submitted to the Faculty of the Graduate School of
Eastern Kentucky University
in partial fulfillment of the requirements for the degree of

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ABSTRACT

School districts across the nation are employing coaching for teachers as a means to improve teacher quality and increase student achievement. Looking specifically at instructional coaching as an intervention for teacher support, this study considers the literacy growth data of coached teachers compared to the literacy growth data of uncoached teachers when controlling for years of teaching experience. Data from this study did not find a statistically significant difference between the students' data from the two groups of teachers.

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Instructional Coaching

General Problem

According to Gawande (2011), “coaching done well may be the most effective intervention designed for human performance” (p. 53). Classroom teachers will not develop into high quality instructors innately, but can be cultivated through ongoing scholarship. Offering teachers continuous support, feedback, and encouragement during their quest to improve their practice will make the journey towards improvement more attainable. Socially constructing new learning through a dialogical experience with a knowledgeable professional has the potential to change the trajectory of education. When coached in knowledge acquisition by embedding reflection, teachers develop in a relentless pursuit of excellence, consequently allowing students to grow in greatness. Providing students with high quality teachers “isn’t about discovering master teachers ready-formed. It’s about coaching new teachers until the masters emerge” (Bambrick-Santoyo, 2016, p.7).

Just as inexperience does not necessarily predict ineptitude, experience alone will not ensure master teachers (Bambrick-Santoyo, 2016; Scribner & Akiba, 2010). Conversely an existing body of research indicates that teaching will improve with learning about effective instruction and practicing the learned skills until they become instinctive (Ryung Kim & Hee Sou, 2018). Teachers may demonstrate effectiveness in the field at various points in individual teachers’ professions, each progressing at different rates in their profession as they deepen their knowledge. Adult learning theory, described by Shidler (2009), contends that teachers need individualized support, opportunities to practice their learning, and repetition. Individualized support allows for

the social construction of knowledge (Vygotsky, 1978). One possible intervention to address professional learning and improvement is to offer teacher support via an instructional coach. “Effective coaching can greatly accelerate that growth.” (Bambrick-Santoyo, 2016, p. 11).

Coaching a teacher affords opportunities for two professionals, the instructional coach and the coachee, to investigate quality instructional strategies and improve practice through a dialogical relationship (Cameron & Ebrahimi, 2014; Stefaniak, 2017; Vygotsky, 1978; Wenglinisky, 2000). Throughout the collaboration, instructional coaches will interact with teachers to socially construct learning with the intent to improve the academic and personal lives of both the teachers coached and the students that the teachers serve (Aguilar, 2019; Knight, 2018; Stefaniak, 2017; Vygotsky, 1978). Instructional coaching can offer a platform for personalized support to individual teachers based on need and interest, keeping with the goal of improvement. Bambrick-Santoyo asserts that, “coaching may be one of the most important factors that determines both how successful a teacher’s career is” (2016, p. 9).

Any implemented practice in the field of education should positively impact student achievement, or doubt will develop about if the model should be implemented (Cornett & Knight, 2009). Student achievement and high teacher efficacy display a positive correlation therefore teacher efficacy directly influences students’ learning (Hattie, 2012). An instructional coach may aid in the development of teacher efficacy, “partner[ing] with teachers to help them improve learning so students become more successful” (Knight, 2018, p. 2). Instructional coaches and teachers work in tandem to select goals, determine strategies to implement, monitor implementation of strategies,

reflect, and problem solve (Knight, 2018; Knight, 2009). Classroom teachers and instructional coaches may collaborate to improve their craft so that students can grow in proficiency.

Instructional coaching will consume financial resources and human resources in a school district (Aguilar, 2019). In order to be good stewards of these resources in the field of education, a connection between instructional coaching, teacher improvement, and student achievement must be established to warrant the investment. Research suggests that instructional coaching positively affects the quickening of professional learning among educators, potentially translating to the learning of students (Cornett & Knight, 2009; Knight, 2018; Knight, 2009; Knight, 2007; Kurz et al., 2017).

Conceptual Definitions

Establishing a common understanding of the definition of instructional coaching is paramount for successful implementation (Kraft & Blazar, 2018; L’Allier et al., 2010; Wolpert-Gawron, 2016). Developed by Jim Knight and his work at the University of Kansas, instructional coaching is defined as “a non-evaluative, learning relationship between a professional developer and a leader, both of whom share the expressed goal of learning together, thereby improving instruction and student achievement” (Knight, 2006, p.37). Knight’s group defines an instructional coach as one who “partner[s] with teachers to analyze current reality, set goals, identify and explain teaching strategies to hit the goals, and provide support until the goals are met” (Knight, 2016b). Such coaching occurs in a cyclical process to enhance teaching and learning. The instructional coaches work with teachers as partners to improve the quality of

instructional practices (Knight, 2018). Together, the instructional coach and the classroom teacher analyze the current reality of the classroom learning environment, set goals based on the observations of the current state of affairs, and identify and explore means to achieve the determined classroom goals (Knight, 2018; Knight & van Nieuwerburgh, 2012). Instructional coaches then aid the teacher in monitoring progress and provide support in the quest of the teacher to achieve the goal.

The study viewed the literature and the findings through a lens of social constructivist theory. Social constructivism is defined as “a small group of people learning through as a collective” (Quay, 2003). Based on the pioneering work of Vygotsky, further understanding of social learning expanded the definition to embrace “collectives of person...capable of actions and understandings that transcend the capabilities of the individuals on their own” (Davis et al., 2000, p. 68).

Significance

Pressure exists to improve teaching and learning in public schools, yet traditional methods of training teachers do not yield desired results as measured by student achievement (Gallucci, 2008; Knight, 2009). With coaching initiatives expanding across the nation and into local districts, determining whether instructional coaching offers an effective intervention is both a practical and necessary endeavor (Cornett & Knight, 2008; Ross, 1992; Shidler, 2009). Because the goal is to accelerate student learning to maximize student achievement, the need for assessing the legitimacy of instructional coaching persists (Kraft & Blazar, 2018). If research data support the effectiveness of instructional coaching as an intervention to further teacher quality and

impact student achievement, more schools may choose to invest in an instructional coach as human capital. Determining the connection between instructional coaching and student achievement is a paramount finding, as shared by Neufeld and Roper (2004), “no one, as yet, has proven that coaching contributes significantly to increased student achievement,” (p.1).

Historical and Social Significance

National initiatives call for improvements in teaching to increase student proficiency. Beginning with the Reagan Administration and a 1983 report, *A Nation at Risk*, attention to teacher quality increased in response to the political message emphasizing excellence (Clark & Astuto, 1989). Following the Reagan Administration, successive administrations enacted different pieces of legislation, including Goals 2000: Educate America Act (1994) and No Child Left Behind [NCLB] (2002), to continue professional learning and further teacher effectiveness with the intent of offering exemplary instruction to students.

A reauthorization of the 1965 Elementary and Secondary Education Act, Every Student Succeeds Act (2015) [ESSA] emphasizes the acquisition and development of high quality teachers and leaders to serve in schools (Every Student Succeeds Act, 2015). States commit to acquiring high quality teachers to offer effective instruction to students, particularly those in high-need areas (Pasachoff, 2017). States agree to provide appropriate support for teachers in order to develop their knowledge to become quality teachers. Professional development serves as an impetus to improve the quality of teachers, thus should increase student achievement.

A competitive funding grant for educational reform, Race to the Top places the accountability for student performance on the teachers (Race to the Top Executive Summary, 2009). States' applications for Race to the Top funds describe their current operational state within predetermined categories and then set goals for performance in the categories (Howell, 2015). Among the categories, the policy category entitled "Great Teachers and Leaders," is weighted the highest. A description of the policy category indicates the expectation of, "improving teacher and principal effectiveness based on performance" (Howell, 2015). Political culture increasingly demands teacher accountability for student performance as each successive act of legislation adheres to the belief that, "improving teacher quality [is] the next step that need[s] to be taken to improve education" (Wenglinsky, 2000, p. 8). Instructional coaching offers a prospective means to support teachers to increase their effectiveness and overcome deficits in student achievement (Knight, 2009).

In addition to politicians and the historical legislation for improved merit, local communities call for excellence in education. The communities demand higher levels of teaching in the classroom as measured by student academic performance (Eisenberg et al., 2017; Shidler, 2009; Wenglinsky, 2000). To succeed in obtaining high levels of student achievement, educators need exemplary content knowledge, awareness of effective instructional strategies, adequate opportunities to practice newly learned skills and strategies, and time to reflect upon successes and challenges in learning (Cornett & Knight, 2008; Denton & Hasbrouck, 2007; Gallucci et al., 2010; Hattie, 2009; Knight, 2009; Knight & van Nieuwerburgh, 2012). Teachers need routine opportunities to engage in professional growth and to engage in dialogic experiences to promote

continuous reflection (Vygotsky, 1978). The dialogical experience with an expert colleague affords teachers the opportunity to socially construct their learning. Systemic professional improvement transpires with such intentional and sustained efforts (Fowler, 2014; Haneda et al., 2017; Knight, 2009; Shidler, 2009).

Instituting instructional coaching offers teachers opportunities for collaboration to socially construct new learning, an important component in professional learning (Cornett & Knight, 2008; Knight, 2009; Vygotsky, 1978). As partners in professional learning, an instructional coach supports a teacher through offering professional development, modeling, goal-setting, routinely observing classroom learning, engaging in dialogue following and observation, and conversing about student data to further student achievement (Cornett & Knight, 2008; Gallucci et al., 2010; Knight, 2009; Neufield & Roper, 2002). A developing body of literature include studies that suggests that students of teachers coached by instructional coaches demonstrated greater academic achievement than those students of non-coached teachers (Bean et al., 2010; Cornett & Knight, 2008; Poglinco & Bach, 2009; Teemant et al., 2011; Wenglinsky, 2000). Because teacher effect is the most salient factor in student achievement, offering instructional coaching support to develop teacher quality improves opportunities for student success (Cornett & Knight, 2008; Hattie, 2010; Sanders & Rivers, 1996).

Professional learning is critical to enhancing teacher quality in order to increase student achievement, yet emerging research faults traditional models of professional development such as the typical daily workshop (Christie, 2009; Cornett & Knight, 2008; Knight, 2009). The implementation rate of professional development is low, approximately 10% of the classrooms in a descriptive report displaying evidence of the

knowledge learned by the teacher being utilized to benefit the students, according to a 1984 landmark longitudinal study on professional learning (Bush, 1984). Conversely, in a 2009 review of over to hundred publications about coaching, approximately 95% of teachers utilize content acquired in professional learning when provided a suitable amount of support in implementation, greatly impacting student learning experiences (Knight, 2009). Instead of adhering to the traditional, typically ineffective workshop model, allowing for professional learning to occur in a continuous, job-embedded manner through instructional coaching offers more intentional support to teachers (Christie, 2009; Fowler, 2014; Knight, 2018; Knight, 2009).

Cultural values of excellence and accountability continue to surface as the focus for educational policy (Fowler, 2014). With the publication of *A Nation at Risk* and continuing with the legislation of succeeding administrations, politicians called for a movement towards educational reform that demands excellence in the classrooms (Clark & Astuto, 1989; Fowler, 2014; Marshall & Gerstl-Pepin, 2005). To determine the degree to which excellence is achieved, federal legislation enacts proficiency testing to measure the effectiveness of student learning and thus the quality of the teaching (Ballard & Bates, 2008; Fowler, 2014). In order to increase student achievement, additional support must be provided to those delivering the instruction.

Improving student achievement is a recurring issue in public education. Based on John Hattie's extensive research on effect sizes of common educational practices, teacher quality positively affects student achievement (Hattie, 2010). Collective teacher efficacy, with an effect size of 1.42, and teacher clarity, with an effect size of .75, indicate that, when present, increased quality could stimulate two to three years of

student academic growth. A 1996 study attributes teacher effect as the dominant factor impacting student academic gain (Sanders & Rivers, 1996). As teacher quality strongly correlates with student academic growth and student academic achievement, adequately preparing teachers to be masterful in their field is an imperative task for leaders in education (Dole, 2004; Horoi & Bhai, 2018; Knight, 2009).

Traditional efforts to improve teacher quality to enhance student achievement yield inconsistent results (Knight, 2009; Kraft & Blazar 2018; Neufeld & Roper, 2002; Ross, 2021; Shidler, 2009). One traditional professional development model, the single day workshop, fails to transfer to classroom practice, thus showing little impact on student learning (Knight, 2009; Shidler, 2009). More successful professional development offers individualized, continuous, on-site support combined with opportunities for reflection (Neufeld & Roper, 2002; Shidler, 2009; Strickland & Riley-Ayers, 2007). Instructional coaching as a component of professional development reverses the needs of adult learners (Cornett & Knight, 2008; Eisenberg et al., 2012; Knight, 2021; Shidler, 2009). Teacher goal setting and professional learning about the selected goal combined with classroom visits and monitoring teachers' progress towards the goal allows for teachers' accountability while upholding teachers' autonomy (Aguilar, 2019; Knight, 2018; Neufeld & Roper, 2002). Establishing a cycle of continuous data acquisition, reflection, and instructional adjustments based on new learning allows teachers to engage in continuous and comprehensive development in classroom practices as measured by student performance (Knight, 2018; Kraft & Blazar, 2018; Hui et al., 2020).

Theoretical Significance

Vygotsky's social constructivist theory was the primary theoretical framework behind this proposed study (Vygotsky, 1978). Constructivist theory contends that a learner constructs meaning through experiences "with a dynamic and responsive world" (Davis et al., 2000, p. 65). Learners glean new knowledge from every experience that they have (Quay, 2003). Social constructivist theory builds upon the idea of having direct experiences with the world and includes the need for social interaction as a means to process the experience (Davis et al., 2000; Quay, 2003). Vygotsky believed that "relations among people genetically underlie all higher functions" (Vygotsky, 1981, p.163). When social interaction, such as dialogue, is combined with an experience, learners are able to construct knowledge more deeply (Quay, 2003). "Learning is not located purely within individuals, but also encompasses the social world" (Quay, 2003, p. 106).

Instructional coaching incorporates dialogue and collaborative conversation as a means to reflect upon new professional learning and/or classroom experiences. Dialogue allows for the social interaction necessary for teachers to socially construct new professional learning in a significant way. The conversation between the coach and the coachee emphasizes the importance of combining direct learning experiences with reflective dialogue to make more meaningful, lasting learning.

Study Purpose

Coaching initiatives as a means to increase teacher effectiveness are in place throughout local communities as a result of current political policies and interest in student achievement (Cornett & Knight, 2008; Shidler, 2009). Initial research suggests a

potential positive relationship between instructional coaching and the student achievement data of the coached teachers (Ross, 2021; Shidler, 2009). The purpose of this study was to, using a dialogical method of learning grounded in the social constructivist theory, determine if instructional coaching improves the student literacy achievement data of students served by the coached teacher. The study investigated the literacy growth of students in the classes of teachers at three urban Title 1 elementary schools. In the study the literacy growth of the students of teachers that participated in instructional coaching cycles were compared to the literacy growth of students in the classes of teachers not participating in instructional coaching cycles. Student literacy achievement was determined using a normed referenced computer based adaptive test created by Northwest Evaluation Association [NWEA], Measurement of Academic Proficiencies [MAP] Reading Growth assessment (Rambo-Hernandez et al., 2019). This study attempted to add to the literature determining a correlation between instructional coaching and student literacy achievement.

The study attempts to determine if there is a relationship between classroom teachers' participation in instructional coaching cycles and literacy achievement for the students in their classrooms. Because teacher choice plays an important role in motivation and work ethic, most teachers who received the treatment chose to participate in instructional coaching, although some were strongly encouraged or mandated by administrators to participate in instructional coaching. The characteristics of a teacher that chooses to participate in instructional coaching, the characteristics of a teacher who is mandated to participate in instructional coaching, and the characteristics of a teacher who declined participation in instructional coaching may be different. Yet

despite the variance in characteristics of coached teachers, determining the effectiveness of instructional coaching will assist school leadership in making informed decisions about appropriate interventions to use with teachers and how the interventions relate to student literacy achievement (Shidler, 2009). An appropriate intervention will have an impact on student data and will have a profitable return on the investment. Investigating the relationship between instructional coaching and the student literacy data from a normed referenced assessment provides information needed to determine if the intervention affects students' literacy growth.

Inquiry Statement

Adult learning theory recognizes uniqueness in adult learning. As adults experiencing the learning, teachers require individualized learning experiences with repeated opportunities to practice and reflect upon newly developed skills in a social context (Aguilar, 2019; Denton & Hasbrouck, 2007; Shidler, 2009; Vygotsky, 1978). Learning may occur in other professional experiences, such as a single occurrence professional development event, yet isolated events do not afford educators adequate time to acquire deep levels of learning and to effectively implement new strategies in their classrooms (Knight, 2009; Shidler, 2009). Instead teachers require opportunities for sustained professional learning to internalize practices to develop a repertoire of teaching strategies and to engage in dialogue to further explore the teaching and learning that occurs (Ross, 1992; Shidler, 2009; Vygotsky, 1978; Wenglinsky, 2000). When teachers engage in high-quality, sustained professional learning, they acquire knowledge needed to constructively impact student achievement.

Transferring the benefits of instructional coaching from coached teachers to the students in the classroom as measured by the academic achievement of students is a topic of increased prevalence in research literature (Desimone & Pak, 2017; L’Allier et al., 2010; Poglinco & Bach, 2004; Wenglinsky, 2000). By comparing the mean literacy growth data of students in classes of coached teachers to that of students in the classes of uncoached teachers the study supplies evidence about the effectiveness of instructional coaching as an intervention.

Central Research Questions:

The central research question for the study was as follows:

What are the effects of implementing the intervention of instructional coaching for elementary teachers on the literacy performance of students in an urban Title 1 school as determined by MAP?

Sub-questions. Does instructional coaching increase student literacy growth data according to MAP if a student is assigned a teacher participating in an instructional coaching cycle?

Hypothesis:

The researcher hypothesized that instructional coaching with a classroom teacher would positively impact student academic achievement in literacy.

Study Boundaries

Increasingly, studies provide initial insight to the relationship between instructional coaching and student achievement (Mayfield, 2016; Rennick, 2002; Shidler, 2009). Unlike other studies, the study employed data from the literacy MAP

Growth assessment to measure academic achievement, as determined by student growth from the fall to spring assessment for students in kindergarten through fifth grade. The study used data from three urban Title 1 schools located in the same community in order to assess the relationship between instructional coaching and student achievement. Because the data was derived from three schools in one community with similar high risk populations, the data may not be applicable to all instructional coaching situations. In addition, because the data consisted of assessment data from elementary school students, the results may not be applicable to experiences from kindergarten to twelfth grade.

In the study, a clearly defined and controlled role of an instructional coach minimized additional variables to the research. Each of the schools in the study had an instructional coach assigned to the school and each coach participated in the same professional development opportunities to enhance their knowledge of instructional coaching. The three schools received support from the instructional coach the same academic year. Although minimizing research variability between sites, the proposed factors potentially created a limitation. Rather than employing the concept of coaching in a broader sense, the training of the coaches required the study to narrowly focus on the coaching strand of instructional coaching.

The study considered neither the personal perspective of the instructional coaches nor classroom teachers. As a quantitative study, the work numerically analyzed the growth data from the MAP Reading Growth Assessment from students of coached classroom teachers compared to those of uncoached teachers, accounting for years of experience as a covariant. The study employed data from the MAP Growth Reading

Assessment. Although proficiency is mentioned, the study focused primarily on accelerating student growth in order to reach proficiency.

A significant boundary to this study is the type of sampling. The study used all classroom teachers at each of the three schools for a total of 51 classroom teachers. Teachers either participated in the treatment group (N=27), and they received instructional coaching, or teachers participated in the control group, and they did not receive instructional coaching (N=23). Teachers were not randomly assigned to a group, but instead a convenience sampling was used (Creswell & Creswell, 2018). Classroom teachers could have volunteered to participate in instructional coaching, could have been recruited to participate in instructional coaching, or could have been mandated to participate in instructional coaching. The combination of the possibilities means that the assignment to the treatment group was not random, but was instead influenced by a multitude of factors.

Teachers who volunteered to participate in instructional coaching may potentially be more efficacious, motivated individuals who are willing to improve their practice based on experience and feedback. Willingness, however, is an important aspect of instructional coaching (A. Hoffman, personal communication, November 2, 2021). Instructional coaching embraces the philosophy that teachers should have the autonomy to choose whether or not to participate in an instructional coaching cycle, as the process of engaging in the cycle indicates a willingness to embrace change. Because of motivation and personality, the teachers who elected to participate in instructional coaching, whether it be through volunteering or recruitment, might potentially be predisposed to becoming effective teachers through grit and drive (Duckworth, 2016;

Pink, 2011). To protect the privacy of the participants, information about what motivated the teachers to participate in instructional coaching was kept confidential. In this study there were teachers who willingly participated in an instructional coaching cycle, who were strongly encouraged to participate in an instructional coaching cycle, and those who were mandated by administration to participate in an instructional coaching cycle. Regardless of the reason for participating, and despite the philosophy of choice in instructional coaching, all types of teachers were included in the treatment group. Thus convenience sampling and the types of participants it provided were a barrier to the study.

The power of analysis increases as the population size of participants increases (Creswell & Creswell, 2018). A greater number of participants makes a study more statistically powerful and more applicable to other situations. This study, while using all available classroom teachers from the three identified schools, has a small sampling size. A larger sample size would offer greater generalizability, ensuring that conclusions drawn from the study were more accurate and transferable. This study has a small N, thus making the accuracy of inferences drawn susceptible to skepticism.

Terms

Academic Achievement – The performance of students in the quest to master content standards. Two ways to measure achievement are through proficiency and growth.

Throughout the study, unless otherwise noted, academic achievement refers to student literacy growth.

Coachee – The classroom teachers being coached in the instructional coaching cycle.

Used synonymously with classroom teacher and coached teacher.

Coaching – An intentional relationship between two individuals (Aguilar, 2019).

Coaching Cycle – A repeated pattern of learning when the coach and the classroom teacher identify a goal, learn about how to implement strategies to reach the goal, and improve practice (Knight, 2018). Used synonymously with Impact Cycle.

Dialogical – The process of embracing inquiry, “asking questions that empower the collaborating teacher to identify goals, strategies, and adaptations that will have an unmistakable impact on students’ achievement and well-being” (Knight, 2018).

Effective – “Implies that practices would improve student academic performance” (Wenglinsky, 2000, p. 22), specifically referring to the content area of literacy

Growth – The assessment used in the research, the Measures of Academic Progress assesses, among other factors, proficiency and growth. Growth is a predetermined raw score assigned by the computer program for each individual student. There are typical increments per grade level used to determine if the student made acceptable progress from their starting point. Students are expected to show at least one year growth from the fall assessment score to the spring assessment score in the same academic school year.

Impact Cycle – A repeated pattern of learning when the coach and the classroom teacher identify a goal, learn about how to implement strategies to reach the goal, and improve practice. Used synonymously with Coaching Cycle (Knight, 2018).

Instructional Coach – Individual trained in coaching practices who partners with classroom teachers to help the teachers incorporate practices into their teaching based on research (Knight, 2008).

Instructional Coaching – The practice of providing appropriate and adequate supports to teachers in order for teachers to provide quality instruction to students (Cornett & Knight, 2008).

Measures of Academic Progress [MAP] – A normed-referenced test produced by Northwest Evaluation Association [NWEA]. The computer-based test is administered in the fall and spring in an academic year, with the option of an additional winter administration. Available data reports from the assessment include a quadrant report highlighting the annual growth and proficiency of each student in a class.

Partnership Principles – A set of principles that serve as a guide for instructional coaches to interact with classroom teachers. The principles include equality, choice, voice, dialogue, reflection, praxis, and reciprocity (Knight, 2018).

Social Constructivist Theory – When learning occurs in a small group of people through collaboration and discussion; based on the pioneering work of Vygotsky the theory embraces the understanding that a group of people can construct greater learning than the individual. (Davis et al., 2000; Quay, 2003).

Title 1 – A federal aid program that provides money to schools based on the number of students qualifying for free and reduced lunch make-up of the school population.

Uncoached – A teacher not participating in an instructional coaching cycle.

Summary

Recent initiatives in the field of education utilize an instructional coach to offer continuing learning opportunities for teachers. The number of instructional coaches present in public schools is continually increasing (Biancarosa et al., 2010; L'Allier et al., 2010). In the United States during the 2015-16 academic year, 27% of schools in the public sector reported having a coach in the building (Kraft & Blazar, 2018). As instructional coaching increases in popularity there are professional and fiscal responsibilities to consider in order to assess the success of the intervention.

Instructional coaching is designed to support classroom teachers increasing teacher effectiveness. Teacher quality proves challenging to measure, making the decision of implementing the intervention of instructional coaching difficult to determine. In one meta-analysis of sixteen studies, researchers determined that teacher efficacy impacted student achievement in a statistically significant way for teachers with greater than eleven years of teaching experience, but not for teachers with less than 11 years of teaching experience (Ryung Kim & Hee Seo, 2018). When experienced teachers convey their belief in students' abilities, students demonstrate greater success. This was not true for novice teachers. According to some studies, years of teaching experience create more opportune situations for increased student achievement (Alkan et al., 2017; Darling-Hammond & Youngs, 2002; Greenwald et al., 1996; Oliver & Reschly, 2007; Pressley et al., 2019; Rice, 2003). Experience matters.

Conversely, a separate group of researchers dispute the relationship between years of teaching experience and teacher quality and effectiveness. A mixed-methods study examined the relationship between prior experience in teaching and instructional quality (Scribner & Akiba, 2010). The researchers found that career length did not

relate to instructional quality. Instructional quality and student learning are both impacted by a classroom teacher's professional vision, a teacher's intersection of pedagogical knowledge and implementation in classroom situations (Muhonen et al., 2021). Although different, "teacher expertise and teaching experience are often used parallel to each other" (Muhonen et al., 2021, p. 2). Research suggests that teachers may make substantial strides towards professional mastery both early and late in their careers (Berger et al., 2018; King Rice, 2013). "The length of teaching itself does not guarantee the level of expertise" (Muhonen et al., 2021, p.2).

One source of information to indicate the success of instructional coaching is the analysis of student achievement data. Should this study data indicate that there is a positive relationship between teachers participating in an instructional coaching cycle and the student achievement data of coached classroom teachers as compared to uncoached classroom teachers when controlling for years of experience, instructional coaching can be suggested as an effective strategy to improve instruction. Quantitative data could support the claim that the practice of coaching offers a structure for developing and improving human performance in the classroom (Gawande, 2011).

Literature Review

Overview

A thematic literature review was conducted. Works pertaining to the field of education focusing specifically on instructional coaching as a vehicle for teacher development as demonstrated via student achievement were analyzed. The earliest articles pertaining to instructional coaching feature the work of Joyce and Showers, pioneers in the philosophy of using coaching support for teachers as a means to improve effectiveness (Joyce & Showers, 1982; Kraft et al., 2018). Additional literature exploring the maturation of instructional coaching as a means to address professional development provided a more complete history of the intervention. Works directly addressing professional development for teachers, coaching teachers, and instructional coaching paired with literature discussing student achievement supplied substantive relevant literature for the study.

Selection Process

Conducting a thematic literature review from educational databases including the Academic Search Ultimate in EBSCO, the online digital journal library Education Resources Information Center [ERIC], Journal Storage [JSTOR], and Google Scholar provided the basis for collecting literature. Peer reviewed literature from scholarly journals relevant to the key words “professional development for teachers” and “coaching teachers” provided initial content to review (Creswell & Creswell, 2018). Because the articles supplied information about diverse coaching structures, a more specific search of literature relevant to “instructional coaching” and “student achievement” was conducted, narrowing the scope of the literature review (Orcher,

2014). An analysis of the applicable articles led to the selection of initial articles for the literature review.

References cited in the applicable articles provided additional publications for further exploration (Creswell & Creswell, 2018). When an article presented important information relevant to the research an examination of the cited references revealed additional readings potentially applicable to this study. Article reference lists provide book titles to pair with discovered journal articles (Creswell & Creswell, 2018). Particular attention was given to recurring citations and frequently referenced authors. Consideration was also given to publications addressing theory, including social constructivist theory, Vygotsky Space, Partnership Principles, and adult learning.

The earliest articles relevant to professional development for teachers, coaching teachers, instructional coaching, and student achievement originate in the 1980s, when public interest developed regarding teacher quality as a vehicle for student achievement. Public policy mandated increased teacher quality with the intent to offer more evident advancements in student achievement (Every Student Succeeds Act, 2015; Goals 2000: Educate America Act, 1994; No Child Left Behind Act, 2001; United States: National Commission on Excellence in Education, 1983). Increased teacher quality as determined by high-stakes testing instituted through public policies raised accountability for teachers, making the need for improved classroom performance immediate. In addition to locating resources to establish the origins of instructional coaching, recent journal articles covering the topic provided the latest research (Creswell & Creswell, 2018).

Selection criteria required that all literature reviewed relate to the field of education, specifically teacher growth and development, adult learning, and student achievement. The selected literature was published in scholarly journals, reviewed by peers for a thorough vetting process (Creswell & Creswell, 2018). Of the selected literature, specific review criteria ensued to discern the relevance of the literature. Literature selected as primary sources for review qualified following an analysis process to determine the type of study conducted, the number of participants included, the rigor of the study, and the quality of the study.

Review Process

Upon selecting the primary literature used for the research, each publication was studied carefully, reviewed to determine the quality of the study presence of clear relevance to professional learning for teachers, coaching teachers, instructional coaching, and student achievement. After reading the literature, an analysis of pertinent publications was conducted using the following criteria:

- What specific information does the article contain in relation to instructional coaching and/or student achievement?
- Does the literature convey results of a study? If so, what method of research transpired in the study?
- If the research communicated results of a study, what measurements are used to report the data of the study?
- What level of quality is the information in the article as related to the research question?

Following the analysis, high-quality publications became the basis for the primary sources of the literature review. Citations from the high quality publications were reexamined more comprehensively. Literature of lesser quality but still pertinent to the topics of professional learning for teachers, coaching teachers, instructional coaching, and student achievement was also evaluated and used throughout the literature review as supporting evidence for claims made from primary, high-quality sources.

Literature Quality

All literature utilized in the literature review contained educational implications. Public policy, peer reviewed research articles, and books contributed as resources for the literature review. The scope of the literature selected primarily discussed teacher professional development through coaching, specifically instructional coaching. Combined with literature addressing the impact of instructional coaching upon student achievement, the literature ascertained the requirements for a successful coaching endeavor for classroom teachers as measured by the achievement of the students.

Research articles, the majority of which were peer reviewed, added to the scope of the literature review. Scholarly peer reviewed articles provide an increased level of quality as other researchers from the field recognize the accuracy and relevance of the published article. After reviewing the articles using a uniform review process, approximately 60% of the articles selected rated as high-quality articles. The literature in that 60% became the primary literature for the review. Books on the topic of coaching presented additional insight to the structure of instructional coaching, combined with the roles, responsibilities, and characteristics of coaches. The selected

literature exhibited relevance to the field of education in professional learning, student achievement, and coaching, specifically instructional coaching.

Theoretical Framework

To provide students with excellence in educational opportunities, teachers frequently attempt to advance personal professional learning. A 1999 Department of Education statement revealed 99% of teachers surveyed receive professional development each year (National Center for Education Statistics, 1999). Often the reported professional development was offered in a single day workshop setting where an esteemed expert presented information to dutifully listening participants (Knight, 2009; Wenglinsky, 2000; West, 2002). A possibly more effective solution would be to provide rich professional development on a topic with opportunities to socially construct knowledge through dialogic interactions, thus the use of Lev Vygotsky's social constructivist theory as the primary theoretical framework behind this study. (Vygotsky, 1978). More intentional professional growth increases teacher knowledge and may excite classroom teachers to learn more about classroom practices hence potentially increasing teacher quality. Professional development combined with instructional coaching serves as an efficient model to help teachers to pair knowledge acquisition with assistance in implementation to best educate students (Knight, 2009). Recent students suggest that increasing teacher quality generates teacher effectiveness as evidenced in improved student academic achievement.

Teacher quality may or may not be determined by the years of experience held by a classroom teacher. Two contradictory beliefs arise from the body of research. Evidence in studies suggest that teachers' pedagogical knowledge, professional vision,

and hence effectiveness increases with years of experience (Alkan et al., 2017; Berger et al. 2018; Muhonen et al., 2021; Pressley et al., 2019). Teachers with less experience may have limited knowledge, are more likely to develop cognitive overload, and have a less advanced professional vision (Berliner, 2001; Stumer et al., 2013; Kim & Klassen, 2018). Other research studies indicate that effectiveness may not be determined solely by the years spent in the classroom (King Rice, 2013). Classroom teachers early in their tenure, within the first ten years of their experience, may make significant progress towards mastery in teaching. The quality of the experience may matter more than the length of the experience (Muhonen et al., 2013).

Improving teacher skill, knowledge, efficacy and confidence in an ongoing manner increases student achievement (Alkan et al., 2017). An important aspect to improving teacher quality, as evidenced in adult learning theory, includes supporting adult learners, individually as they socially construct new learning (Gergan, 1985; Knight, 2009; Shidler, 2009; Vygotsky, 1978). Instructional coaches ensure social construction of learning as they engage in active listening to facilitate trust in the coaching relationship and in professional conversations to deepen understanding (Hammond et al., 2017; Knight, 2009; Robertson et al., 2020; Shidler, 2009; Vygotsky, 1978). Establishing a relationship of mutual trust provides a critical foundation for successful professional learning of the teacher. Once the working relationship is in place the instructional coach and the teacher engage in comprehensive learning of content, acquisition of sound instructional practices, participate in demonstrations to model effective teaching, and provide a safe environment for approximation to occur (Cambourne, 2002; Knight, 2009; Shidler, 2009).

A specific approach encompassing the social constructivist theory is that of the partnership approach (Knight, 2016a; Vygotsky, 1978). The focus of a partnership, a symbiotic relationship between two professionals, was the approach of this study, grounded in the theoretical framework of social constructivist theory (Knight, G., 2021; Knight, 2011; Knight, 2009; Vygotsky, 1978). Teamwork plays a crucial role in the Partnership Principles. The philosophy encourages the classroom teacher to reflect critically with increasing frequency through open dialogical interactions with the instructional coach (Hasbrouck & Denton, 2007; Knight, 2018; Suarez, 2017). Opportunities to socially construct learning through dialogue with the instructional coach will potentially improve teacher practice. Although the autonomy of goal selection, strategy implementation, and reflection belong entirely to the teacher, the instructional coach plays a complementary role to aid in professional growth by providing support, new learning, encouragement, and guidance as needed (Knight, 2009).

Major Works

Historical Overview of Instructional Coaching

Despite a recent rise in popularity, providing coaching as a means for developing quality teachers has a “deep history in educational practice,” (Kraft & Blazar, 2018, p. 549). Intentionally explored by Showers in the 1980s, evidence indicated that coaching teachers showed promise as a successful endeavor to support classroom teachers (Joyce & Showers, 1982; Showers, 1985b; Showers, 1984; Showers, 1982). In a 1982 quantitative study, Showers researched the effects of supporting classroom teachers via coaching and if the support of coaching transferred to classroom

practice (Showers, 1982). Of the seventeen study participants, Showers found that teachers receiving coaching support in the classroom had a higher transfer rate of implementing new teaching and learning strategies. Showers' findings contend that without coaching teachers are often unable to transfer professional learning into classroom practice. Results also confirmed that the coached teachers, who demonstrated a higher transfer rate than the uncoached teachers, had statistically significantly increased student achievement data.

Together Showers and Joyce co-published an article in 1982 expanding upon the theory behind the coaching process that was used in the Showers' 1982 study and the relevance thereof. While not a study, the article discussed the transfer of newly learned teaching methods into the classroom, exploring challenges to such transfer. Joyce and Showers challenged schools to create a climate that embraced a "coaching environment" to develop a platform for transfer and to encourage growth mindset (Joyce & Showers, 1982; Dweck, 2006/2008). The researchers asserted the importance of socially constructing knowledge through dialogue and reflection when coaching teachers (Joyce & Showers, 1982).

In attempts to make coaching more accessible and part of the building culture, further study into peer coaching opportunities transpired (Showers, 1984; Showers 1985b). Peer coaching, as described in the article, involved one teacher, or peer, observing another teacher and offering feedback about the teaching and learning (Showers, 1982). In 1984, Showers conducted a mixed-design study that involved twenty-one teachers and six peer coaches (Showers, 1984). Among the three groups of teachers, coached, partially coached, and uncoached, data indicated that when fully

participating in coaching, classroom teachers experienced stronger instructional exchanges, possessed a significantly higher ability to transfer instructional strategies into to the classroom, and exhibited increased student achievement regarding conceptual attainment (Denton & Hasbrouck, 2009; Joyce & Showers, 1982; Showers, 1984; Welingsky, 2000). Nearly a year following the 1984 study, the coached classroom teachers continued to use the instructional strategies, retaining more of the technical and transfer skills than the uncoached or partially coached teachers (Showers, 1985a). In addition, students of coached teachers performed better on an assessment measure than did students of uncoached teachers (Showers, 1984). In the results, Showers acclaimed coaching as a, “superior achievement” (Showers, 1984, p. 58). While peer coaching was not the coaching structure selected for the scope of this study, the revolutionary work of Showers greatly contributed to both the foundational theory and practice behind instructional coaching (Kraft et al., 2018).

As evidenced in the Showers’ study, not all coaching is equal (Showers, 1984; Showers, 1985a). Fully coached teachers performed significantly higher in all researched areas while the partially coached teachers’ data resembled that of uncoached teachers (Showers, 1984). Showers’ conclusions identified specific key elements of coaching needed to positively impact teachers’ instructional delivery and students’ achievement. First, effective coaching structures employed instructional coaches at the same site as the coached teacher allowing for frequent classroom visits (Dole, 2004; Knight, 2007; Poglinco & Back, 2004; Showers, 1984; West, 2002). Following visits, the coach connected with the classroom teacher presenting individualized feedback, support, and encouragement (Bush, 1984; Dole, 2004; Joyce & Showers, 1982;

Showers, 1984; Showers, 1985a; Russo, 2004; West, 2002; Vanderburg, 2009). The cycle of observation, discussion, feedback, dialogical interactions, and collaborative support were foundational for future developments in instructional coaching (Aguilar, 2019; Joyce & Showers, 1982; Knight, 2018; Neufield & Roper 2002; Showers, 1984; Sweeney & Mausbach, 2019; Vygotsky, 1978).

In 1984 researcher Bush studied the qualities of effective professional development and devised a six-fold model for providing more effective professional learning for teachers (Bush, 1984). Among the elements of the model included the enhancement of teachers training. According to Bush, there are five levels of training to be included in effective professional development. Teachers need exposure to learning that grows their theoretical base. Also included in the training element are modeling for teachers, opportunities to practice new learning, feedback, and coaching. Each of the levels of training are included in an instructional coaching model (Aguilar, 2019; Bush, 1984; Knight, 2018; Neufield & Roper 2002; Sweeney & Mausbach, 2019).

Similar to the pioneering work of Showers, in 1992, Ross conducted a research study on coaching, specifically studying the collaborative relationship between the coach and how the relationship affected the classroom teacher and student achievement (Ross, 1992). In this quantitative study, Ross observed eighteen teachers and six coaches. Findings indicated higher student achievement in classrooms in which teachers had increased interactions with a coach. Ross noted that positive dialogical relationships between the coach and the classroom teacher built professional confidence and created a sense of teacher efficacy, the belief in efforts impacting student results, as they offered a safe place to socially construct new learning (Hattie, 2012; Ross, 1992; Showers, 1984;

Vygotsky, 1978). Because of the development of teacher efficacy, increased through dialogical coaching interactions, teacher quality improved hence advancing student achievement (Denton & Hasbrouck, 2009; Joyce & Showers, 1982; Knight 2007; Ross, 1992; Showers, 1984; Welingsky, 2000). Based on Hattie's research on effect sizes of common educational practices, teacher quality positively affects student achievement (Hattie, 2010). Collective teacher efficacy, with an effect size of 1.42, and teacher clarity, with an effect size of .75, indicate that, when present, increased quality could stimulate two to three years of student academic growth. As teacher quality strongly correlates with student academic growth, adequately preparing teachers to be masterful in their field is a momentous task (Horoi & Bhai, 2018; Joyce & Showers, 1995; Knight, 2007).

In the decade following Ross' research, a myriad of topics, including coaching, dominated educational research. With the *No Child Left Behind* [NCLB] legislation of 2001, public demand for teacher quality again increased (No Child Left Behind, 2001). Legislation provided the funding for literacy coaches in public schools as a catalyst to continue professional learning and further the effectiveness of teachers, thereby offering exemplary instruction to students. Literature that defined and described effective professional development surfaced, and it was determined that single exposure workshop settings did not adequately prepare teachers to provide new learning opportunities to students (Bush, 1984; Christie, 2009; Darling-Hammond & Sykes, 1999; Fullan & Hargreaves, 1991; Knight, 2018; Knight, 2007). Recognizing that high-quality professional development potentially transforms schools in powerful ways, researchers and practitioners continued to study how to increase the impact of

professional learning through personalized dialogic interactions such as coaching (Bush, 1984; Christie, 2009; Eisenberg et al., 2017; Joyce & Showers, 1995; Knight, 2007; Knight, 2000).

In partnership with the Kansas University Center for Research on Learning, researcher Knight spent decades systematically studying teachers' professional learning and professional development experiences (Knight, 2007). Because successful implementation of skills, strategies, and practices from professional development attended by teachers was not observed in classrooms, an ethnographic study explored how teachers experienced professional development (Knight, 2000). The research study included interviews from twenty-three classroom teachers and two administrators and focused on six questions specific to professional development. Findings indicated that offering full time, on-site professional development with continuous access to an individual to support the execution of the professional learning aided teachers and in the instituting of strong "research-based instructional practices" (Knight, 2007, p. 12). Along with access to a professional development expert, Knight determined it paramount that the "expert" establish and develop a dialogical relationship with the classroom teachers, appreciating professionalism and respecting autonomy (Joyce & Showers, 1982; Knight, 2007; Knight, 2000; Showers, 1985b). By partnering with teachers to socially construct learning and responding to teachers' individual needs for learning, professional development outcomes improve (Knight, 2000).

Continuing to research frequent, accessible professional support or interactions, Knight adjusted future study to investigate how personalized, intense support, such as that of a coach, affects classroom instruction and ultimately student achievement

(Knight, 2007). Coaching models from the field of education and other disciplines provided insight to valuable elements of successful coaching (Joyce & Showers, 1982; Knight, 2007). Knight explored the simultaneous improvement of classroom instruction and school culture through healthy, empowering dialogue in professional conversations (Knight, 2016a; Knight, 2007; Showers, 1985b). Continued research on dialogical learning led to the belief “that working one-on-one, listening, demonstrating empathy, engaging in dialogue, and communicating honestly are all part of successful professional development” (Knight, 2007, p. 8). The power of conversation to promote collaboration and teacher reflection provided increased intentionality in improving instruction and student achievement (Knight, 2016a; Knight, 2007; Showers, 1985b).

Originally labeled “learning consultant” in 1999, in 2005 the term evolved to instructional coach after considering feedback from professionals familiar with the research and practice (Knight, 2018). Knight defined instructional coaching as “a non-evaluative, learning relationship between a professional developer and a leader, both of whom share the expressed goal of learning together, thereby improving instruction and student achievement” (Knight, 2006, p.37). An instructional coach was defined as one who “partner[s] with teachers to analyze current reality, set goals, identify and explain teaching strategies to hit the goals, and provide support until the goals are met” (Knight, 2016b). In a 2008 study, researchers Cornett and Knight confirmed the role of an instructional coach in aiding teachers in the implementation of classroom instructional practices (Cornett & Knight, 2008). Of the fifty one teachers participating in the study, those randomly assigned to the group receiving coaching support transferred newly learned strategies to classroom practice 90% of the time as compared to uncoached

teachers demonstrating execution of new strategies only 30% of the time. The presence of an instructional coach provided encouragement and motivation for classroom teachers to engage in more instructionally sound practice.

In a three year longitudinal study, Knight and researchers from the University of Kansas Center for Research on Learning identified important elements of instructional coaching (Knight, 2009). Included in the goals of instructional coaching were focus on professional practice, job-embedded experiences, intensive and ongoing support, need for partnership, dialogical experiences, non-evaluative interactions, confidentiality, and respectful communication (Aguilar, 2019; Joyce & Showers, 1982; Neufeld & Roper, 2002; Knight, 2018; Knight, 2009; Knight, 2007; Showers, 1985b; Sweeney & Mausbach, 2019). In addition, certain conditions were deemed necessary for instructional coaching to impact teaching and learning (Knight, 2009). Instructional coaching programs should contain focus and continuity, a school-wide culture of continuous learning, support from school leadership, clear roles established for all parties, time, and a protected coaching relationship. These conditions were important to ensure that instructional coaching could make an impact on both teaching and student achievement.

Knight and the research team at the University of Kansas continued to further research combining design research and Lean Startup methods, coined Lean-Design Research [LDR], to improve upon the initial instructional coaching studies (Knight, 2018; Reinking & Bradley, 2008; Ries, 2011). Between 2009 and 2014, the team refined the identified components into a cyclical set of stages and studied ten instructional coaches using LDR (Knight, 2018). In total, the various coaches proceeded

through a cyclical process a total of eleven times. The stages of the process recognized by Knight, known as the Impact Cycle, included goal setting, learning about chosen strategies, and making necessary adaptations. Throughout all the stages, instructional coaches and teachers continuously collaborated to socially construct their learning in an intimate setting attempting to learn more about instructional strategies to meet the goal, engage in professional conversation, and to reflect upon progress towards accomplishing the teacher chosen goal (Joyce & Showers, 1982; Knight, 2018; Knight 2007; Neufeld & Roper, 2002; Russo, 2004; Showers, 1985b; Sweeney & Mausbach, 2019). Findings from the study revealed eight of the ten teachers participating in the process with instructional coaches improved significantly in their teaching as a result of instructional coaching (Knight et al., 2018).

Stemming from the five year longitudinal study of the coaches, the Impact Cycle was born (Knight, 2018). The first stage of the Impact Cycle, Identify, affords the teacher an opportunity to establish a picture of reality in classroom instruction and select a focus goal (Aguilar, 2019; Knight, 2018; Knight, 2007; Stefaniak, 2019). Teachers maintain autonomy in the goal selection and remain the primary decision maker in the classroom (Knight, 2018). Collaboratively, instructional coaches and classroom teachers deliberate to craft an individualized focus goal for the coaching cycle and discuss the instructional strategies necessary to achieve the goal. Once the goal is set, the instructional coach and the classroom teacher collectively investigate the strategies to be implemented (Dole, 2004; Knight, 2018; Showers, 1984). During the Learn stage of the Impact Cycle, the instructional coach may provide classroom demonstrations for the classroom teacher (Joyce & Showers, 1996; Joyce & Showers,

1982; Knight, 2018; Knight, 2007; Showers, 1985b; Showers, 1984). In addition, the instructional coach routinely visits the classroom to collect data on the classroom teachers' progress concerning the goal (Aguilar, 2019; Joyce & Showers, 1982; Knight, 2018; Showers, 1985b). The final stage of the Impact Cycle, Improve, requires that the instructional coach and the classroom teacher converse about progress towards achieving the goal (Knight, 2018). Dialogue transpires to analyze the classroom data collected by the instructional coach, determine any adaptations that may need to occur, and make necessary adjustments (Dole, 2004; Joyce & Showers, 1982; Knight, 2018; Knight, 2016; Showers, 1985b; Showers, 1984).

Responsibilities of the instructional coach differ across institutions, with some universal expectations (Denton & Hasbrouck, 2007; Knight, 2018; L'Allier et al., 2010; Wolpert-Gawron, 2016). Instructional coaches and classroom teachers engage in an initial dialogue to set an authentic goal of the teachers' choice (Knight, 2009; Knight & van Nieuwerburgh, 2012). Continued collaboration between the instructional coach and the coachee occurs through routine classroom visits when the instructional coach gathers anecdotal and empirical data for the classroom teacher (Denton & Hasbrouck, 2007; Knight, 2018; Knight, 2009). Instructional coaches convene with classroom teachers following classroom visits to support the teacher through questioning and individualized feedback (Knight, 2018; Knight, 2007). Classroom demonstrations, or modeling, by the instructional coach for the classroom teacher serves as an integral part of instructional coaching (Denton & Hasbrouck, 2007; Knight & van Nieuwerburgh, 2012). Providing high-quality, continuous, and job-embedded professional learning for educators through observations, modeling, conferencing, data collection, and reflection

is a key role of the instructional coach (Knight & van Nieuwerburgh, 2012; Neufeld & Roper, 2002).

Researchers Kraft, Blazar, and Hogan conducted a meta-analysis of sixty coaching studies, including the work of Joyce, Showers, and Knight (Kraft et al., 2018). Despite billions of dollars invested, studies confirm that traditional professional development alone does not change instructional practices, nor does it positively impact student achievement (Cornett & Knight, 2008; Glazerman et al., 2010; Kennedy, 2016; Knight, 2007; Kraft et al., 2018). The most effective professional development opportunities shared common essential elements, all of which are embedded in instructional coaching (Kraft et al., 2018). Successful professional learning was job-embedded, sustained over a period of time, and provided time intensive, individualized learning for teachers (Darling-Hammond et al., 2009; Desimone, 2009; Desimone & Garet, 2015; Elish-Piper & L’Allier, 2007; Poglinco & Bach, 2004; Showers, 1985b; Showers, 1984; Vanderburg & Stephens, 2009, West, 2002). Lasting learning for classroom teachers included demonstrations modeled by qualified individuals such as instructional coaches (Joyce & Showers, 1995; Joyce & Showers, 1982; Knight, 2007; Kraft et al., 2018; Sailors & Shanklin, 2010; Showers, 1984; Showers, 1985b). Classroom teachers benefited from opportunities to participate in a reflective dialogue pertaining to the modeled strategy and attempts to implement the strategy independently (Knight, 2018; Knight, 2007; Kraft et al., 2018; Lofthouse et al., 2010, Russo, 2004; Sweeney & Mausbach, 2019). Research supports that coaching teachers “has a positive effect on student achievement” (Kraft et al., 2018).

Historical roots of the Partnership Principle

Beginning with the work of Freire (1970) the importance of dialogue emerged as a quintessential notion of learning. In his book *Pedagogy of the Oppressed* (1970) Freire details five critical aspects of dialogue; humility, hope, faith, love, and critical thinking. Dialogue involves an act of creating a, “climate of mutual trust between the dialoguers” (Freire, 1970, p. 91). Dialogue between two professional partners deepens learning through critical thinking. Humility and love birth a trust between the instructional coach and the classroom teacher. In establishing an arena of trust, conversations further teaching and make a positive impact on improvements to deepen students’ learning.

Combined with work of Freire, social cultural theory and Vygotsky Space influence the theory behind the study (Freire, 1970; Vygotsky, 1978). Learning and change occur when individuals involved in the process engage in social interactions about the learning (Herrenkohl & Wertsch, 1999; Vygotsky, 1978). One assumption in social constructivism is the notion “in which the world is understood [through] social artifacts, products of historically situated *interchanges among people* [emphasis added]” (Gergan, 1985, p.5). In the exchanges between the instructional coach and the coachee, collective and individual actions converge into a common experience of professional learning (Gallucci, 2010). Organizational support in the form of instructional coaching ignites individual change as the instructional coach and the classroom teacher simultaneously acquire knowledge surrounding instructional practices to provide exemplary learning opportunities advancing student achievement.

As the founder of instructional coaching, Knight, creator of the Instructional Coaching Group [ICG], employs a theory of “Partnership Principles,” grounded in the

work of Freire and Vygotsky (Freire, 1970; Knight, 2011; Vygotsky, 1978). The ICG encourages establishing a sense of equality between the teacher and the instructional coach in shared dialogue. Authentic conversational dialogue surrounding content, pedagogy, and strategies allows the instructional coach and the classroom teacher to co-construct new knowledge in an innocuous way (Hui et al., 2020; Knight, 2016). Developing reciprocal trust generates sustained, impactful learning, dissimilar from temporarily complying with mandates (Eisenberg et al., 2017; Kelly, 2019).

Elements of the Partnership Principles

The theoretical framework of the Partnership Principles employs seven components (Knight, 2009). Instructional coaches embrace equality. An instructional coach and classroom teacher share ideas equally, with no one individual's idea given greater merit (Knight, 2018; Knight, 2016; Knight, 2009). Partnership Principles value choice. Teachers maintain autonomy in what to execute in classrooms and how to implement the chosen strategies (Knight, 2009). When regarded as a professional decision maker and recognized as an expert, the teacher feels valued, prepared to embrace new learning (Vanderburg & Stephens, 2009). Voice is the third practice of the theory. The ideas of the instructional coach and the classroom teacher contribute to knowledge acquisition. Reciprocity, as evidenced through an open dialogue between an instructional coach and a classroom teacher, deepens learning. An instructional coach operates as a thinking partner instead of an expert and the combined experience benefits both parties in the partnership (Freire, 1970; Knight, 2009). Another principle, reflection, functions as a necessary aspect of instructional coaching (Dole, 2004; Hasbrouck & Denton, 2007; Knight, 2018; Knight, 2009). As reflective thinkers,

teachers have the freedom to intentionally select or reject ideas (Knight, 2009).

Teachers' deliberation of classroom experiences creates opportunities for learning to become more meaningful. The Partnership Principles include praxis, opportunities to apply new learning to existing practice. Praxis plays a powerful role in instructional coaching, encouraging teachers to analyze the world of the classroom as, "it is the reflection and action upon the world in order to transform it" (Friere, 1970, p. 36).

The Partnership Principles theoretical framework fit the model of this research study. Adult learning and improvement developed from trusting relationships and meaningful conversations rather than mandates (Haneda et al., 2017; Knight, 2009; Shidler, 2009). An authentic partnership between the instructional coach and the classroom teacher created a suitable environment for adult learning (Knight & van Nieuwerburgh, 2012). Instructional coaches regarded the professionalism of teachers in high esteem, rather than conveying the coach as the unquestioned expert in the relationship. Partnership Principles best matched the breadth of the literature in the need for trust, communication, and support for adults in their quest for deeper learning (Knight, 2009; Shidler, 2009).

Substantive Findings

Coaching structures

According to essential studies, instructional coaching includes critical components for success to develop teacher effectiveness (Kraft et al., 2018). Successful coaching experiences began with a positive relationship, a partnership, between the instructional coach and the classroom teacher (Joyce & Showers, 1982; Knight, 2018; Knight, 2016; Kraft et al., 2016; Showers, 1985b; Russo, 2004; Vanderburg & Stephens,

2009). Strong coaching structures operated executing cycles developed around a focus goal chosen by the classroom teacher (Aguilar, 2019; Joyce & Showers, 1982; Knight, 2018; Showers, 1985b; Stefaniak, 2019; Sweeney & Mausbach, 2019). Classroom teachers developed in their craft after watching demonstrations of instructional strategies and practicing the implementation of the strategies with and without the instructional coach present (Cornett & Knight, 2008; Joyce & Showers, 1995; Joyce & Showers, 1982; Showers, 1985b; Showers, 1984; Knight, 2007). Reflection and feedback in a continuous, job-embedded situation increased the instructional aptitude of teachers along with the transfer to classroom practice (Aguilar, 2019; Elish-Piper & L’Allier, 2007; Haneda et al., 2017; Joyce & Showers, 1982; Knight, 2018; Knight, 2007; Poglinco & Bach, 2004; Russo, 2004; Showers, 1985b; Showers, 1984; Sweeney & Mausbach, 2019). The cyclical repetition of instructional coaching combined with adhering to the other critical elements described increases occasions for instructional coaching to positively impact student achievement data.

Coaching roles

The primary role of the instructional coach was to engage in coaching cycles with individual classroom teachers (Knight, 2018; Knight, 2007; Showers, 1984; Vanderburg & Stephens, 2009). Instructional coaches worked individually with teachers to “[conduct] observations, [offer] feedback, [and engage in] discussion” (Showers, 1985b). Instructional coaches fulfilled additional roles within the school presenting professional development for school staff since learning new content, pedagogy, strategies, or skills were quintessential components to improve classroom instruction (Aguilar, 2019; Cornett & Knight, 2008; Gallucci, 2008; Knight, 2004;)

coaches have the credibility to provide professional development for staff because the expertise of an instructional coach is “assumed as precondition[s] for the job” (Gallucci et al., 2010, p.924). Offering training to improve content knowledge and instructional skill granted teachers greater expertise, however, acquiring new knowledge without demonstrations, feedback, and support did not ensure successful transfer to classroom practices (Joyce & Showers, 1982).

Coaching impact

More recent research indicated that instructional coaching may be associated with increased teacher quality (Bean et al., 2010; Cornett & Knight, 2008; Matsumura et al., 2010; Reinke et al., 2014). Offering individualized support to teachers contributed to teacher efficacy (Kraft et al., 2018; Showers, 1984; Vanderburg & Stephens, 2009). As teachers developed efficacy, welcoming the acquisition of new knowledge as they witnessed the results of their labor, a perpetual state of continuous learning, or growth mindset, ensued (Dweck, 2006/2008; Hattie, 2010). Growth mindset transferred from the development of teachers to the advancement of students and an increased belief in student capabilities transpires.

According to the available research, instructional coaching of classroom teachers appeared be related to increased student achievement (Biancarosa et al., 2010; Cornett & Knight, 2008; Denton & Hasbrouck, 2009; Kraft et al., 2018; Poglinco & Bach, 2004; Showers, 1984; Wenlinsky, 2000). Offering instructional coaching as an individualized professional learning opportunity for teachers improved teacher knowledge and skill (Ballard & Bates, 2008; Bean et al., 2018; Elish-Piper & L’Allier, 2008; Gallucci, 2008; Sanders & Rivers, 1996; Teemant et al., 2011). Instructional

coaching can be offered to teachers with any number of years of experience, with one important qualification is teacher willingness to engage in an instructional coaching cycle (A. Hoffman, personal communication, November 2, 2021). A common assumption of some researchers is that years of experience is synonymous with teacher quality or expertise (King Rice, 2013; Muhonen et al., 2021). Other research, however, indicates that “the length of teaching itself does not guarantee the level of expertise but it is also the quality of the experience that matters” (Muhonen et al., 2021). Despite the debate of years of experience as an indication of expertise, the combination of newly acquired knowledge and continuous interaction led to teachers experiencing focused instructional coaching demonstrating greater implementation of practice in the classroom, transferring the teachers’ learning to practice to positively influence student achievement (Darling-Hammond et al., 2009; Joyce & Showers, 1982; Reinke et al., 2014). Instructional coaching of classroom teachers had an impact on student achievement.

Coaching implications

With political policies and public demand to increase teacher quality, structures to improve teacher effectiveness are necessary for public schools. As initial findings suggest a positive relationship between offering instructional coaching to teachers and increasing teacher knowledge and skill, instituting instructional coaching provides a structure to improve teacher effectiveness (Bean et al., 2010; Cornett & Knight, 2008; Elish-Piper & L’Allier, 2008; Horoi & Bhai, 2017; Matsumura et al., 2010). Improving teacher effectiveness transfers to classroom practice, increasing student achievement (Ballard & Bates, 2008; Darling-Hammond et al., 2009; Joyce & Showers, 1982;

Sanders & Rivers, 1996; Teemant et al., 2011). Evidence that instructional coaching positively impacts student achievement, suggests that expanding instructional coaching potentially offers more opportunity for enhanced student academic performance.

Methodological Findings

Research describes numerous approaches to coaching in the field of education. Because of the variety in structures of the various coaching methods, one particular type of coaching was selected for this study. Instructional coaching, prevalent in the literature, provided a predictable, concise structure. Major findings claimed instructional coaching to be a successful structure for job-embedded professional development (Bean et al., 2018; Elish-Piper & L'Allier, 2008; Gallucci, 2008; Horoi & Bhai, 2017; Knight, 2007; Poglinco & Bach, 2004). Instructional coaching provided a partnership in learning, catered to the needs of the individual classroom teacher (Cordingley, 2005; Joyce & Showers, 1982; Knight, 2007; Kraft et al., 2018; Showers, 1984; Teemant et al., 2011). The use of Knight's Impact Cycle offered a replicable approach to coaching (Knight, 2018). The process of identifying a goal, learning skills and strategies, and improving in practice provided less ambiguity between coaches and was therefore chosen as the structure used in this research study.

Numerous studies utilized the coaching structure of instructional coaching. Qualitative research and case studies investigated the role of relationships, reflection, and feedback as essential elements of instructional coaching (Cornett & Knight, 2008; Haneda et al., 2017; Knight, 2018; Knight, 2016; Knight, 2007; Siaw Hui et al., 2020; Teemant et al., 2011). Additional qualitative research incorporating observational data and interviews illuminate the need for a cyclical process in the coaching structure

(Cornett & Knight, 2008; Knight, 2018; Siaw Hui et al., 2020; Teemant et al., 2011). Gallucci et al. (2010) conducted a qualitative study to discern the acquisition of knowledge of instructional coaches growing the coaches' expertise with the intent to educate classroom teachers. Participants in the reviewed studies ranged from elementary classroom teachers to middle and high school teachers in various subject areas. The literature specific to instructional coaching was predominantly qualitative in nature, lacking empirical evidence to "directly substantiate the effects of coaching on teachers and the performance of their students" (Denton & Hasbrouck, 2009).

The studies cited considered the achievement of students from a wide range of age levels across multiple disciplines. A lack of participant consistency made stating generalizations about the effectiveness of coaching difficult. Furthermore, much of the coaching literature utilized relatively small-scale qualitative studies with non-experimental designs lacking adequate comparison group methods with significant controls (Darling-Hammond et al., 2009; Matsumura et al., 2010). Quantitative specifics enumerated the relationship between instructional coaching of classroom teachers and the literacy growth of students are necessary, particularly addressing elementary students in Title 1 schools.

Adaptations to the present work studying instructional coaching will help to determine the quantitative literacy growth of elementary students as measured by a normed referenced assessment. This study used quantitative data from the MAP Reading Assessment to numerically determine the literacy achievement growth of students in classes of coached teachers compared to students in classes of uncoached teachers. Another adaptation of this study encompassed the variable of coaching

preparation. To minimize variation among the qualifications of the coaches, each of the instructional coaches employed at the Title 1 elementary schools participated in the same coaching training prior to coaching teachers and throughout their tenure at the school. Finally, another adaptation to the study involved the types of schools participating in the study. Each of the three urban schools has a high percentage of Title 1 students, above 85%, making the student populations relatively comparable.

Implications

The Partnership Principles, inspired by Vygotsky's social constructivist theory, served as the theoretical and conceptual framework for the proposed research (Knight, 2016a; Vygotsky, 1978). These principles created a philosophy for how to approach and engage dialogical in instructional coaching as a means to co-construct new professional learning (Gallucci et al., 2010; Haneda et al., 2017; Vygotsky, 1978). Review of the literature echoed the importance of relationships between the instructional coach and the classroom teacher, affirming the significance of the dialogical experience as imperative to the coaching process. Because of the necessity of dialogue and relationships in instituting change in adult learners, and because of the presence of dialogical relations in instructional coaching, the literature affirmed the importance of utilizing an instructional coach as a means to provide ongoing assistance to classroom teachers.

Continued study of the phenomena of interest, the relationship between instructional coaching and student achievement, will provide additional information to address the deficiencies in current studies. Obtaining quantitative data to explore a relationship between instructional coaching and student achievement will provide

increased understanding of the effectiveness of the intervention. Should the intervention, instructional coaching, show a positive correlation with student achievement, schools can determine how to best address the needs of teachers to suitably aid in the continued achievement of their students. Based on cost alone, the most economical means of presenting the professional development experiences is a single experience workshop (Dole, 2004; Elish-Piper & L'Allier, 2007; Knight, 2007; Poglinco & Bach, 2004). Conversely instructional coaching provides professional learning but at a greater cost. The workshop-style professional learning provides uniform opportunities for knowledge acquisition while instructional coaching provides individualized opportunities for knowledge acquisition.

District and school leaders need to determine which option has the best return on the investment. But determining the cost effectiveness of professional development is a difficult value to calculate (Christie, 2009). The cost of professional development is intertwined with salary schedules, required work days, and recertification, making it difficult to know the true cost of professional development for teachers. High cost, however, makes it increasingly important to provide results of the effectiveness of professional development in order to ensure cost effectiveness. Both state leaders and tax-paying individuals expect to see a return on the investment of professional learning, whether the learning occurs through workshops, seminars, or instructional coaching, as evidenced through student achievement. The evidence can then drive the creation of public policy to suitably address best practices for developing teacher quality and effectiveness.

Contributions

Current research suggests that teacher quality impacts student achievement and that instructional coaching impacts teachers quality, but, “the ‘missing link’... in coaching research, is studies that clearly show that coaching improves... student achievement” (Cornett & Knight, 2008, p. 210). The study made contributions to the existing literature related to instructional coaching. Much of the existing research surrounding instructional coaching was qualitative in nature, incorporating observational data and interviews in attempts to either determine effectiveness of coaching based on the perception of a classroom teacher or to determine a causal relationship between instructional coaching, teacher quality, and student achievement (Ballard & Bates, 2008; Sanders & Rivers, 1996; Teemant et al., 2011). This research employed quantitative data in an effort to determine a correlation between instructional coaching and elementary student literacy achievement as determined by a norm-referenced test, MAP. Quantitative research enumerates the potential relationship, a finding that could add value to the existing body of current research (Cornett & Knight, 2008; Darling-Hammond et al., 2009; Matsumura et al., 2010; Russo, 2004).

Summary

As evidenced from the literature reviewed in Chapter 2, instructional coaching offered an intervention to improve teacher quality in order to enhance student achievement. A 1992 research study suggested that, “all teachers, regardless of level of efficacy, [are] more effective with increased contact with their coaches” (Ross, 1992, p. 62). As instructional coaching accelerates the growth of teachers, classroom teachers can then transfer the knowledge and skills acquired to classroom practice, impacting student achievement (Teemant et. al, 2011). Quantifiable data to establish a relationship

between instructional coaching and the literacy achievement of elementary students adds to the work of existing literature about instructional coaching (Cornett & Knight, 2008). Quantifying data can provide evidence to determine instructional coaching's "untapped potential," (Russo, 2004, p. 4).

Methodology

Research Approach

The general research approach used was a quantitative study designed to determine if the instructional coaching of teachers impacts student achievement when controlling for teachers' years of experience. Currently, qualitative data exist considering the role of an instructional coach, teacher perceptions of an instructional coach, and the relationship between instructional coaching and increased teacher quality (Bean et al., 2010; Cornett & Knight, 2008; Matsumura et al., 2010). Casual quantitative data suggests a potential relationship between instructional coaching, teacher quality, and student achievement (Ballard & Bates, 2008; Sanders & Rivers, 1996; Teemant et al., 2011; Wenglinsky, 2000). To ethically use educational funds for the purchase of coaching positions and determine if funding instructional coaching yields a return on the investment, determining if instructional coaching of teachers positively impacts student achievement is imperative. This study used a quantitative approach to investigate the existence of a connection between teachers participating in an instructional coaching cycle and the academic literacy growth of the students of those teachers when considering the variant of years of experience of the teachers.

Three urban schools served as the locations for the study. The schools each served large populations of underrepresented students, although the demographics of the underserved populations varied from school to school. All three schools had populations of underserved students great enough that each of the schools qualified for school-wide federal Title 1 monies. Each of the potential schools suffered extreme deficiencies in the MAP Growth Reading assessment during the 2016-2017 academic

year. As a result, district administrators selected and hired instructional coaches to offer additional support to the classroom teachers at each of the low performing schools. The hired coaches participated in the same instructional coaching training, decreasing the variability in the design of the study. Following the training, the instructional coaches supported classroom teachers using the theory of Partnership Principles paired with the coaching structure of the Impact Cycle (Knight, 2018; Knight, 2016a). The coached group of classroom teachers became the intervention group and the uncoached teachers the control group for the study.

The study compared student achievement, as determined by the literacy growth scores from the MAP Growth Reading assessment, between the two groups of teachers' students' performance during the time period of 2018-2019 while controlling for teachers' years of experience. Student scores from the spring MAP Growth Reading assessment were measured against student scores from the fall MAP Growth Reading assessment to determine a level of academic growth. Students either met their expected growth, meaning the anticipated raw score indicated progress of at least one academic year of literacy growth, or students did not meet their expected growth, meaning the raw score was less than the minimum score needed to demonstrate one year of literacy growth. The mean percentage of students meeting their literacy growth scores for each class of coached teachers was compared to the mean percentage of students not meeting their literacy growth scores in each class of uncoached teachers in the study.

Study Design

The study investigated the relationship between instructional coaching of classroom teachers and the measurable performance of their students while controlling for teachers' years of experience. Because decisions about how funding is utilized center around the impact upon student achievement, determining if instructional coaching provides a solid return on the investment is necessary in order to make effective choices to fund for teacher support in a manner that positively impacts students (Joyce & Showers, 1995). The study investigated the relationship between instructional coaching of classroom teachers and the literacy achievement data of students by comparing the data of students from coached teachers' classrooms to students of uncoached teachers' classrooms. Results of a positive relationship between instructional coaching and student literacy growth data would suggest that instructional coaching potentially provides an intervention to improve student achievement. Conversely, a null or negative relationship between instructional coaching and student literacy growth data would indicate a need for additional research into interventions to improve teacher quality that will positively impact student literacy achievement.

To maintain consistency, thoughtful decisions were made with regards to the setting of the proposed study. Selecting three schools increased the participant pool of coached teachers (N=27), uncoached teachers (N=23), and instructional coaches (N=3) during the 2018-2019 school year. Of the three schools, each possessed similar demographics. All potential schools in study served minority populations that represent the majority of the student population. The economically disadvantaged populations of all three potential schools exceeded 84%, with an average of 87% of the student population classified as economically disadvantaged (Kentucky Department of

Education School Report Card, 2020). The three schools in the study experienced less than 30% of the student population scoring above the fortieth percentile on the MAP assessment in the study (M. Ramage, personal communication, November 14, 2021).

Beginning in the same academic year, referred to as year 1, each of the three potential schools hired an instructional coach (N=3) to aid and support classroom teachers (Brick, 2016). Together the instructional coaches participated in identical coaching training, hence developing a uniform understanding of instructional coaching structures, roles, and practices. Acquiring similar knowledge ensured less variation among the skills of the three instructional coaches and among the understandings of the coaching roles. The primary trainings regarding the coaching structure for the proposed study of instructional coaching transpired through attending a conference conducted in 2018 by the Instructional Coaching Group, participating in an Impact Cycle (2018) book study, and engaging in ongoing professional learning to practice the implementation of the Impact Cycle with teachers in the Title 1 schools (Knight, 2018).

Two groups emerged in the study. The first group in the study was the coached teachers. This group, the intervention or treatment group, participated in an individualized instructional coaching cycle, the Impact Cycle, for one or more cycle rotations (Knight, 2018). The coached teachers set a goal with the instructional coach, learned about skills and strategies to achieve the goal, invited the coach to demonstrate and/or observe classroom lessons, and met regularly with the instructional coach for reflection and feedback (Knight, 2018; Knight, 2007; Knight & van Nieuwerburgh, 2012). Uncoached teachers, the control group, did not participate in a coaching cycle with the instructional coach.

Despite the differences in coaching involvement, the groups in the study did experience similarities in their learning. Weekly planning meetings with the instructional coach to construct lessons addressing the grade level content standards remained consistent between both groups. Any staff professional development that the instructional coach offered to the classroom teachers remained consistent between the two groups of teachers. Both groups had the opportunity to engage in opportunities for professional learning with the instructional coach through various whole staff experiences, but only one of the two groups represented teachers that partook in the time-intensive, job-embedded intervention of instructional coaching.

The study included a comparison between the intervention group, coached teachers, and the control group, the uncoached teachers while controlling for the variable of years of experience teaching. Student literacy growth data from a norm-referenced assessment, MAP Growth reading assessment, served as the comparison basis between the two groups. Both the coached and uncoached teachers reported the percentage of students meeting their projected literacy growth goal as formulaically determined by the MAP Growth Reading assessment. An ANCOVA was utilized to compare the mean growth between the students in the classrooms of the coached and uncoached teachers in the study while controlling for the covariant years of experience. In order to run the ANCOVA, statistical data analysis software was used. The most common of the software programs, IBM Statistical Package for the Social Sciences [SPSS] was used in this study (Muijs, 2010). Entering the data into the SPSS computer program to analyze the information helped to establish the presence or absence of statistical significance between the experimental and control groups.

Participants

Participants for the study were chosen using convenience sampling, or accidental sampling (Orcher, 2014). To maximize the number of participants, the study used data from all of the teachers that received instructional coaching. Ideally, teachers would be randomly assigned to participate in an instructional coaching cycle to equate the sampling groups. Yet in practice, the instructional coaches had to serve a myriad of classroom teachers including those mandated by the building principal to receive instructional coaching along with those interested in receiving instructional coaching. Classroom teachers in the treatment groups had years of experience ranging from one year of experience to 25 years of experience, with an average of 4.9 years of experience (see Table 1, Table 2, Table 3, Table 4, Table 5, and Table 6). Teachers in the control group ranged from one year of experience to twenty five years of experience with an average of 9.23 years of experience (see Table 1, Table 2, Table 3, Table 4, Table 5, and Table 6). The the data from all classroom teachers that participated in an instructional coaching cycle was used regardless of the rationale as to *why* they had to participate in an instructional coaching cycle.

Ideally, in order for participants to actively, socially construct their learning, participants should willingly choose to participate in a coaching cycle (A. Hoffman, personal communication, November 4, 2021; Knight, 2018). In practice, however, not all teachers that were coached had the freedom to choose coaching and not all teachers that wanted to receive instructional coaching support had the time to devote to the learning. In order to have an adequate number of participants and increase the N, all coached teachers were considered in the intervention group for the study. Including all

Table 1
Descriptive Data for School A

Descriptive Data	Coached or Uncoached	Years of Experience	Mean percentage of students' growth
Teacher A	Coached	4	66.7
Teacher B	Coached	1	56.5
Teacher C	Coached	8	42.9
Teacher D	Coached	4	57.1
Teacher E	Coached	4	56.3
Teacher F	Coached	3	83.3
Teacher G	Coached	1	78.3
Teacher H	Coached	2	47.6
Teacher I	Coached	4	83.3
Teacher J	Coached	4	62.5
Teacher K	Coached	3	45.0
Teacher L	Coached	13	91.3
Teacher M	Uncoached	4	37.5
Teacher N	Uncoached	3	60.0
Teacher O	Uncoached	3	33.0
Teacher P	Uncoached	12	30.0
Teacher Q	Uncoached	10	76.5
Teacher R	Uncoached	11	60.0
Teacher S	Uncoached	13	45.8
Teacher T	Uncoached	12	40.0

Table 2
Data Averages for School A

Descriptive Data Averages	Number of teachers	Average number of years of experience	Average mean percentage of students' achieving growth
Coached Teachers	12	4.3	64.3
Uncoached Teachers	8	8.5	47.9

Table 3
Descriptive Data for School B

Descriptive Data	Coached or Uncoached	Years of Experience	Mean percentage of students' growth
Teacher A	Coached	2	61.1
Teacher B	Coached	2	46.2
Teacher C	Coached	5	33.3
Teacher D	Coached	2	42.1
Teacher E	Coached	2	47.1
Teacher F	Coached	1	47.1
Teacher G	Uncoached	3	61.9
Teacher H	Uncoached	15	68.8
Teacher I	Uncoached	5	37.5
Teacher J	Uncoached	6	65.0
Teacher K	Uncoached	6	36.8
Teacher L	Uncoached	8	54.2
Teacher M	Uncoached	1	66.7

Table 4
Data Averages for School B

Descriptive Data Averages	Number of teachers	Average number of years of experience	Average mean percentage of students' achieving growth
Coached Teachers	6	2.3	46.2
Uncoached Teachers	7	6.3	55.8

Table 5
Descriptive Data for School C

Descriptive Data	Coached or Uncoached	Years of Experience	Mean percentage of students' growth
Teacher A	Coached	6	56.3
Teacher B	Coached	1	75.0
Teacher C	Coached	1	55.6
Teacher D	Coached	3	64.3
Teacher E	Coached	25	66.7
Teacher F	Coached	27	44.0
Teacher G	Coached	5	50.0
Teacher H	Coached	1	60.0
Teacher I	Coached	6	77.8
Teacher J	Coached	3	52.6
Teacher K	Coached	2	42.0
Teacher L	Coached	7	70.0
Teacher M	Uncoached	15	73.7
Teacher N	Uncoached	2	61.1
Teacher O	Uncoached	28	53.3
Teacher P	Uncoached	10	45.5
Teacher Q	Uncoached	3	50.0
Teacher R	Uncoached	20	56.5

Table 6
Data Averages for School C

Descriptive Data Averages			
	Number of teachers	Average number of years of experience	Average mean percentage of students' achieving growth
Coached Teachers	9	8.3	61.1
Uncoached Teachers	9	12.9	56.1

coached teachers made for a larger pool of participants, even though the pool still remained small. This necessitated the use of convenience sampling, a limitation to the study. Convenience sampling presented a potential bias in favor of the specific characteristics of individuals interested in participating in instructional coaching (Orcher, 2014).

Interventions/Treatments

Instructional coaching served as the intervention, or treatment, for one group of teachers, coached teachers, in the study (N=27). Using the term “intervention” in the field of education often insinuates a deficit that needs remedied. With instructional coaching in this study, however, the term intervention instead means a support offered to promote continuous improvement. Teachers in the coached group ranged in tenure from one year of experience to twenty five years of experience and grade level taught from kindergarten to fifth grade as well as in pedagogical knowledge and quality. Instructional coaches at each of the three locations in the study coached teachers willing to participate in an entire instructional coaching cycle as well as classroom teachers

mandated to be coached by the administration. The ANCOVA statistical test compared the data between the control group and the intervention group while controlling for the variation in years of experience.

Research compiled during the review of literature alluded to the success of instructional coaching (Cornet & Knight 2008; Darling-Hammond et al., 2009; Horoi & Bhai, 2018; Knight, 2018). Because of data from the literature acclaiming the benefits of instructional coaching and because of the professional learning of the coaches selected for the study, the structure of instructional coaching was the best choice for the intervention. Adoption of the Partnership Principles, based on social constructivist theory, supplies a common theory amongst the purposeful sample of instructional coaches (Brick, 2016; Knight, 2016a; Vygotsky, 1978). The three step Impact Cycle provided a uniform process for instructional coaching to occur (Knight, 2018; Knight, 2007). Each instructional coach met with the coachee to identify a goal for the coaching cycle (Knight, 2018). Following the goal selection, the instructional coaches and the coached teachers co-constructed knowledge as they worked to learn more about both the strategies to achieve the goal. They conducted a discussion to anticipate how the children in the class may respond to those strategies. The instructional coaches routinely visited the classroom of the coached teachers to collect data on the goal in the study. Following the observation, the instructional coaches and the coached teachers engaged in a dialogue to reflect upon the classroom practice to improve teaching and learning.

To establish a relationship between instructional coaching and student achievement, student data from the coached teachers' classrooms and student data from the uncoached teachers' classrooms was collected. The comparison across classroom

teachers within the school and between the schools necessitated that all students participate in an identical assessment for accurate discussion. Elementary schools in the district used a common assessment for all elementary level students, the Measures of Academic Progress [MAP]. The normed-referenced computer-adaptive test provided a consistent, unbiased measure of literacy growth and proficiency. The test and retest correlations typically range from .7-.9 (NWEA, 2009). Validity and reliability estimates generally range from .65-.85 indicating acceptable ranges for validity and reliability.

Data Collection

MAP Growth Reading assessment is a collection of computerized adaptive tests (Cordray et al., 2012). Using a continuous interval scale, the MAP Growth reading assessment scores student growth and proficiency, allowing teachers and districts to monitor progress. The program stores students' raw scores, assigns a coordinating percentile score, and compiles the information into a class data set. The computer program uses the raw score and compares each students' personal score from the fall assessment to the score from their spring assessment to measure growth. Students either make adequate progress in their raw score, indicating that they achieved the anticipated growth, or do not make adequate progress in their raw score, indicating that they do not achieve anticipated growth. Making sufficient or above anticipated growth suggests that the student achieved a year's worth of learning or more in one academic year of school. Even when the proficiency score is less than desirable, accelerated growth provides students with the opportunity to accelerate towards proficiency. Those students not making satisfactory growth are at risk of falling behind.

Once the computer program supplies a literacy growth measure, mean growth scores from each of the students within the coached teachers' classes were compared to the mean growth scores from students within the uncoached teachers' classes in the study. The comparison of the mean growth scores for the treatment group, coached teachers, and the control group, uncoached teachers, provided the numerical data for this study. Sampling of scores from the student population limited the quantity of data in the proposed study, therefore the entire student population of all three Title 1 schools was utilized. Increasing the study population increased the accuracy of the results (Jackson, 2012).

Because each of the potential instructional coaches had rights to access to the normed reference data from all teachers and students within each of the schools and because of district permission to access the pre-existing data, the data for the study was readily available. As neither students' nor teachers' names were needed to analyze the data, little risk to the privacy of the populations existed in the study. The data was coded as a mean percentage of students that demonstrated anticipated literacy growth for coached teachers and a percentage of students that demonstrated anticipated literacy growth for uncoached teachers. The two means were compared while controlling for classroom teachers' years of experience using an ANCOVA in SPSS to determine the presence or absence of statistical significance.

The reading growth data from the coached and uncoached teachers at the three Title 1 schools originated from the 2018-2019 academic year. Because the instructional coaches in the study began their role at the struggling schools in the 2017-2018 academic year, little true coaching transpired the first year in the role. Throughout year

1, the 2017-2018 academic year, the instructional coaches engaged in developing relationships with the classroom teachers, spent time learning about the culture of the school, and became more proficient in their learning about the structures of instructional coaching (Knight, 2007). By waiting until the second year of the coaching position to analyze the data in the study, the instructional coaches had better established relationships with the classroom teachers, an essential component to successful instructional coaching (Cordingly, 2005; Joyce & Showers, 1982; Knight, 2007; Showers, 1985; Teemant et al., 2011). Although the short time frame is a limitation in the study, MAP Growth Reading assessment literacy data is collected from only one academic school year, 2018-2019.

NWEA's MAP Growth Reading assessment is a popular assessment across the country. Nationally approximately 20% of school districts utilize the assessment (Cordray et al., 2012). Due to the district-wide usage of the MAP Growth reading assessment in the study, district personnel have access to the assessment data for students, teachers, and schools within the district. Data is stored electronically, accessible through NWEA's website with administrator login credentials. Data is also stored electronically in district files, accessible by the district assessment coordinator.

The MAP Growth Reading assessment is a normed reference, computer based adaptive literacy test. Teams engage in quality control in determining questions and devising responses to the questions that address content congruent with state assessments (Cordray et al., 2012). The assessment is typically administered to students three times a year, with a minimum of at least twice a year, fall and spring (Northwest Evaluation Association, 2009). Pre-existing student growth data from the 2018-2019

academic school year provided the data set for the analysis of a correlation between instruction coaching and student achievement. Mean student growth data from the spring 2019 MAP Growth reading assessment supplied the data for comparison in the study.

Instrumentation

Description of MAP

The instrument that supplied student achievement data in the study was NWEA’s MAP Growth reading assessment. MAP “is a vertically scaled computer adaptive assessment based on Rasch Measurement Theory and was explicitly designed to measure individual student academic growth” (Rambo-Hernandez et al., 2019, p. 392). Students receive a Rasch Unit Scale [RIT], or raw numerical score, that is on an equal-interval scale and is vertically aligned for all grades (Rambo-Hernandez, Peters, & Plucker, 2019). The MAP reading assessment measures students in literary comprehension, informational comprehension, and knowledge of word meanings. Students typically take the MAP reading assessment in the fall and spring of the academic year, with the option to assess mid-year, measuring progress in each of the components of the reading assessment (Northwest Evaluation Association, 2009). The assessment provides a measure of student proficiency and a measure of student growth towards proficiency. The assessment measures progress in a variety of ways. In the study student growth was determined using raw RIT reading scores from the fall as compared to the spring.

Due to the widespread use of MAP in the quest to norm reference the assessment, reliability and validity are high (Northwest Evaluation Association, 2009). According to NWEA, validity estimates range from .65-.85 and reliability estimates range from .7-.9. More recent literature claims good reliability consistently .9 or above (Northwest Evaluation Association, 2009).

Protocols for the MAP Growth assessment for reading include electronic administration (Northwest Evaluation Association, 2009). Each student completes the test independently using an electronic device. Classroom teachers do not assist students, unless otherwise noted on a child's individualized educational plan, in order to make the test as uniform as possible in administration.

Initial login instructions are given to students via the classroom teacher or proctor. Students must enter a class code, find the desired assessment, and enter a student name. Classroom teachers or proctors may assist with this initial login procedure. Depending upon student grade-level, the remaining directions to the assessment are given differently. Younger students, particularly kindergarten and first grade children, have an automated set of directions to begin the assessment and audio directions for individual questions. Students may choose to have the directions and questions repeated multiple times with the click of a button. For older students, grades two through five, students must read the directions independently. They too may reread the directions as many times as they wish.

Data Analysis

Scores from the MAP Growth reading assessment supplied the data for the study. Using an adaptive computer based assessment minimized differences in administration and scoring across the groups of classroom teachers. District protocol mandated that the assessment be completed in the fall and the spring, thus the data for each teacher and student in the district was easily accessible as it was required to be completed. Reducing variability in administration and potential teacher bias in scoring ensured greater quality control procedures.

Due to the design of the computer based adaptive assessment results, data were accessible in the proposed study. NWEA software scores the assessment, provides a raw score, and assigns a percentile score. The assessment compares the student change in score from the fall assessment to the spring assessment and then compares that to the normative data to determine the acceptability of growth. As a feature of the assessment tool, the growth report is available to classroom teachers and administrators. Growth reports indicate if the student meets acceptable growth or if inadequate growth was made. The mean percentage of students making acceptable growth in each class is obtained. Results are then coded as the mean percentage for each of the coached teachers and the mean percentage for each of the uncoached teachers. The mean percentages for all of the coached teachers and the mean percentages for all of the uncoached teachers will be entered into SPSS to conduct an ANCOVA for the study.

The analysis software used was IBM SPSS. An analysis of covariance, and ANCOVA, offered results of the comparison between the experimental groups receiving the intervention of instructional coaching and the control group receiving no intervention while controlling for the variable of years of experience.

Work Plan

Study data for the study originated from students completing the MAP Growth reading assessment in the 2018-2019 academic year. The pre-existing data represented a period when the elementary schools employed an instructional coach who engaged in the Impact Cycle with a population of classroom teachers (Knight, 2018). Two data points were needed for each student, one from the fall assessment and one from the spring assessment, in order to establish acceptable literacy growth for the study. Growth was determined for each student and then will be compiled by the classroom teacher. Comparing the mean growth of coached teachers' students to the mean growth of uncoached teachers' students in the study provided a numerical value to determine the existence of a relationship between instructional coaching and student literacy growth.

Resources

This study required few additional resources. Existing data from the 2018-2019 school year was used to compare mean growth scores for students of coached and uncoached teachers.

Elementary schools participating in this study were part of a district that engages in the MAP Growth reading assessment a minimum of two times a year. Because the assessment was a district mandate, district funding financed the assessment, thus no additional assessment costs existed for the study. Students completed the assessment using technology already in the school building, requiring no funds for technology in the study.

As pre-existing data was used to compare the experimental group of coached teachers' students and the control group of uncoached teachers' students, permissions were not needed for this study. Neither student nor teacher names were collected as part of the data, minimizing risk to the participants. Instead, the study used percentages of students for teachers labeled as treatment and control groups.

Limitations

Using data from the 2018-2019 academic year allowed for minimal variance among instructional coaches regarding experience, training, and time spent with classroom teachers. The three schools all qualified for Title 1 services, shared similar economically disadvantaged populations, and held similar percentages of diversity to provide less discrepancy among the participants.

The study presented limitations. First, the elementary three schools involved were located in one community. Because of the similar urban location, findings may not transfer to schools not in urban areas. A second potential limitation surrounded the types of schools in the study. The schools chosen for the potential study were all Title 1 schools with large percentages of the population classified as economically disadvantaged. The results of this study may not be transferable to schools with larger populations of wealthy or middle class students. While the schools were all centered in one community and each had large populations of underrepresented students, the populations of underrepresented students varied from school to school. School A had the largest refugee population including 38% African or African American population, 34% Hispanic population, and 23% White population with a total of 84% of the school qualifying as economically disadvantaged (Kentucky Department of Education School

Report Card, 2021). School B had the largest Hispanic population as 73% of the students identified as Hispanic, 14 % of African American population, and 12% White population with a total of 86% of the school qualifying as economically disadvantaged. School C had approximately 38% African American population, 20% Hispanic population, and 24% White population with a total of 86.7% of the population qualifying as economically disadvantaged. In addition, because the pre-existing data is from previous academic years, the data may be considered dated.

In addition to the school locations and constituents, the actual teachers participating in the coaching cycle presented another limitation in the study. Typically teachers voluntarily participated in instructional coaching cycles. Voluntary participation potentially indicated a level of commitment to continuous growth for coached teachers that may or may not be present in uncoached teachers (Dweck, 2006). While the literature indicates that the coaching process may accelerate teacher growth and student achievement, the attitudes of the teachers and students should be considered (Cornet & Knight, 2008; Teemant et. al, 2011). Teachers more willing to participate in coaching may be individuals with a greater growth mind-set, the type of teacher that accepts feedback and makes instructional adjustments based upon the feedback. To respect confidentiality, it is unknown as to the motivation of the classroom teachers that participated in the study - whether participating in instructional coaching was required or opted for. If the study was replicated, an alternative approach to provide more accurate results could be the use of random sampling (Creswell & Creswell, 2018). Teachers could be randomly assigned to the treatment group, the group receiving instructional coaching, instead of volunteering to participate, being recruited to

participate, or being mandated to participate. Randomization would provide more protection from threats to internal validity to the data. In addition, the teachers chosen from the random sample would be teachers that willingly elected to participate in an instructional coaching cycle as recommended by the developers of the instructional coaching (A. Hoffman, personal communication, November 4, 2021).

Convenience sampling is a nonprobability sample (Creswell & Creswell, 2018). This type of sampling is used when the number of participants or the availability of participants is limited in some way. Participants are chosen based on convenience. In the case of this study, convenience sampling was used. Data from all classroom teachers, both those who participated in the treatment group and those who were in the control group, were used. The teachers that participated in the treatment group, however, were not randomly assigned. Some of the teachers in the treatment group volunteered to participate in an instructional coaching cycle. Another group of the teachers in the treatment group were recruited to participate in an instructional coaching cycle. Finally some teachers in the treatment group were mandated by their administration to participate in an instructional coaching cycle. The utilization of less desirable convenience sampling serves as a limitation to the study.

Aside from the limitation of convenience sampling, the sample size is a limitation of the study. Ideally not only would the sampling be randomized, but also the number of participants, the N, would be a greater value as the larger a sample size the more accurate the results (Creswell & Creswell, 2018). While the entire population of the three schools was used, all classroom teachers were classified in the treatment group or in the control group, the total number of participants remained small. A small

sampling size means less power in the statistical analysis of the data. A small sampling size is a limitation to this study.

A final limitation of note in the study related to the selected assessment tool, the adaptive computer based assessment, MAP Growth reading assessment. While adaptive, computer based assessments that are multiple choice in nature limited student responses. Assessment creators devised universal questions and answers without specific knowledge about individual students' background, culture, or prior knowledge. Potential bias regarding any of these elements may inadvertently cause students to not score favorably as the elements influence students' response (Warne et. al., 2014). Using independent judges to ensure alignment between the questions, answers, and instructional content is one way testing companies attempt to avoid bias, yet complete absence thereof is unattainable (Baker & Linn, 2002).

One alternative to consider for the study would be the natural learning of teachers and students independent of the instructional coaching experience. Teachers may seek out their own professional learning, motivated by the desire for their students' achievement, and may increase in skill of their practice independently without needing the support of the instructional coach (Ballard & Bates, 2008). For motivated, growth-mindset oriented teachers, student growth may have transpired with or without the instructional coaching structure (Dweck, 2006).

Data Analysis and Results

Instructional coaching is the intervention used in this research study to provide feedback and ongoing support for classroom teachers. Qualitative data from existing research confirmed the influence of instructional coaching upon the perceptions of classroom teachers (Bean et al., 2010; Cornett & Knight, 2008; Matsumura et al., 2010). Research also presented casual quantitative data to suggest that there is a relationship between instructional coaching, teacher quality, and student achievement (Ballard & Bates, 2008; Sanders & Rivers, 1996; Teemant et al., 2011; Wenglinsky, 2000). This study attempted to determine if the student data from three urban schools where instructional coaching was implemented could add to the literature to support the relationship between a teacher's participation in instructional coaching and improvement in students' literacy data. Such quantitative data would potentially provide evidence that instructional coaching yields a return on the investment.

In order to investigate the existence of any statistical significance between teachers participating in an instructional coaching cycle and the academic literacy growth of the students of those teachers, the methodology used in the research study was quantitative in nature. In addition to coaching participation, the study also accounted for years of experience of the classroom teachers. The research study analyzed literacy growth scores from the MAP Growth Reading assessment to determine the connection between the two groups of teachers' students' performance during the time period of instructional coaching. Student growth data from the spring MAP Growth Reading assessment was compared against student scores from the fall

MAP Growth Reading assessment to determine a level of academic growth. Students either met or exceeded expected growth, meaning that the anticipated raw score indicated progress of at least one academic year of literacy growth as determined by the computer based adaptive assessment, or students did not meet their expected growth, meaning the raw score was less than the minimum score needed to demonstrate one year of literacy growth as determined by the computer based adaptive assessment. The mean percentage of students that met literacy growth scores for each class of coached teachers was compared to the mean percentage of students that did not meet their literacy growth scores in each class of uncoached teachers in the study when controlling for the years of experience of the classroom teachers. Computer software analysis determined if the differences in the mean percentages were enough to be statistically significant.

Two groups of participants were central to the research study. The intervention group, the coached teachers, participated in a coaching cycle, frequently the Impact Cycle, with an instructional coach for one or more cycle rotations (Knight, 2018). Coaching included opportunities for the instructional coach to visit the teachers' classrooms, meet regularly with teachers to provide feedback and support, and participate in opportunities to reflect upon teaching and learning (Knight, 2018; Knight, 2007; Knight & van Nieuwerburgh, 2012). The control group, the uncoached teachers, did not participate in an instructional coaching cycle with the instructional coach. All classroom teachers experienced professional learning opportunities with the instructional coaches, but only the treatment group participated in a coaching cycle with the instructional coach.

The study was a comparison between the intervention group of coached teachers and the control group of the uncoached teachers when controlling for the variable of years of experience teaching. The data used was from a norm-referenced assessment, MAP Growth reading assessment. Specifically, the research utilized student literacy growth data from the reading portion of the MAP assessment. The percentage of students meeting their projected literacy growth as determined by the adaptive computer based assessment was calculated for both the coached and uncoached teachers. Using IBM Statistical Package for the Social Sciences [SPSS], an ANCOVA was run to compare the mean growth between the students in the classrooms of the coached and uncoached teachers in the study while accounting the variance of years of experience. The software computed the data in order to establish the presence or absence of statistical significance between the experimental and control groups.

A central question guided the research in this study. The research study was designed to determine the effects of implementing the intervention of instructional coaching for elementary teachers on literacy performance of students in an urban Title 1 school as determined by MAP. The purpose was to answer the question, does a teachers' participation in instructional coaching increase their students' literacy growth data according to MAP.

The hypothesis was that there would be a statistically significant difference between the growth data of coached and uncoached teachers and that participating in instructional coaching would have a positive impact upon student academic growth in literacy.

Descriptive Findings

The purpose of the study was to investigate the relationship between classroom teachers participating in instructional coaching and the literacy performance of their students as measured by growth. A relationship between instructional coaching of classroom teachers and the literacy achievement data of students was investigated by comparing the data of students from coached teachers' classrooms to students of uncoached teachers' classrooms when controlling for teachers' years of experience.

In attempts to minimize variability the research included data from three urban schools with similar demographic data and with similar achievement data. Although the populations of the schools, both in student and teacher populations, had notable differences, selecting three schools allowed the study to include an increased number of participants in the experimental group of coached teachers (N=27), in the control group of uncoached teachers, (N=24), and in the number of instructional coaches (N=3) during the 2018-2019 school year. Each of the three schools primarily served underrepresented populations as all of the schools in study served minority populations. In the three schools, the underrepresented populations represented the majority of the student population. In addition, each of the schools had large economically disadvantaged populations. There were, however, key differences in the populations of the underrepresented students.

Less descriptive data was available for the classroom teachers. The average years of experience for coached teachers in School A was 4.3 years, School B 2.3 years, and School C 8.3 years (see Table 2, Table 4, and Table 6). For uncoached teachers, School A had an average of 8.5 years of experience, School B an average of 6.3 years of experience, and School C 12.9 years of experience (see Table 2, Table, and Table 6).

Teachers at School B had the least amount of teaching experience in both the intervention group and in the control group. Information as to why each of the teachers in the intervention group participated in a coaching cycle with the instructional coach was not available in this research study. Teachers may have willingly participated in a coaching cycle, as recommended by the Instructional Coaching Group, teachers may have been strongly encouraged or persuaded to participate in an instructional coaching cycle, or teachers may have been mandated to participate in a coaching cycle (A. Hoffman, personal communication, November 2, 2021). In an effort to maintain the confidentiality of the teachers, additional descriptive information about the classroom teachers such as their education level and evaluation classification according to the Framework for Teaching was not available for the study (Danielson, 2009). Table 1, Table 2, Table 3, Table 4, Table 5, and Table 6 contain the available descriptive data for the classroom teachers in the research study.

Prior to the beginning of the 2017-2018 school year the three schools hired an instructional coach (N=3) to support classroom teachers (Brick, 2016). Each of the instructional coaches held a Bachelor's degree and a Master's degree in various areas in education. The instructional coaches participated in a singular coaching training, developing a similar yet introductory understanding of instructional coaching structures such as the Impact Cycle and a beginning understanding of coaching roles and practices (Knight, 2018). Coaches that had participated in similar learning opportunities were selected in attempts to uphold a coherent understanding of instructional coaching. Selecting coaches with similar education and training was a strategy used in the study to minimize variation among the skills of the three instructional coaches. The primary

trainings regarding the coaching structure for the study of instructional coaching transpired through attending a workshop conference conducted in 2018 by the Instructional Coaching Group, participating in an independently run Impact Cycle (2018) book study, and engaging in ongoing professional reflection to deepen understanding of coaching with teachers in the Title 1 schools (Knight, 2018). The three instructional coaches did not receive any explicit training on instructional coaching nor did the three instructional coaches have a coach mentoring them. There was no information available to compare the caliber of the coaches.

Data Analysis Procedures

The study compared student growth data, as determined by the literacy growth scores from the computer based MAP Growth Reading assessment, between the two groups of teachers' students' performance during the time period while controlling for teachers' years of experience. Student scores from the 2019 spring MAP Growth Reading assessment were measured against student scores from the 2018 fall MAP Growth Reading assessment in order to determine a level of academic growth. NWEA software scores the student assessment, provides a raw score [RIT], and assigns a percentile score. The computer assessment compared the student change in score from the fall assessment to the spring assessment and then compared that change to the normative data to determine the acceptability of growth. As a feature of the assessment tool, the growth report was available to classroom teachers, instructional coaches, and administrators.

Upon receiving approval from the Internal Review Board, IRB, and approval from the school district to have access to the pre-existing data, the pre-existing data was obtained for each of the three schools. The report used was the MAP Reading Assessment Growth Report (Northwest Evaluation Association, 2021). A Growth Report from the MAP Reading Assessment included student RIT scores and percentiles from the fall of 2018 and student RIT scores and percentiles from the spring of 2019. In addition, the report included the expected number of points that the raw score, the RIT, should increase in order to qualify for a minimum of one year's worth of growth. Finally, the report classified the students as "YES," meaning the student successfully met or exceeded the anticipated growth, or "NO," meaning the student did not successfully meet the anticipated growth.

The anticipated level of growth was determined formulaically by the computer based assessment. Based on the change in score from the fall assessment to the spring assessment, students either met their expected growth, meaning the anticipated raw score indicated progress of at least one academic year of literacy growth, or students did not meet their expected growth, meaning the raw score was less than the minimum score needed to demonstrate one year of literacy growth. The mean percentage of students meeting their literacy growth scores for each class of coached teachers was compared to the mean percentage of students not meeting their literacy growth scores in each class of uncoached teachers in the study.

The data were first sorted into categories of the intervention group, or coached teachers, and the control group, uncoached teachers. After classifying the data into the experimental group and the control group, the mean percentage of students in the class

who made adequate growth as determined by the measures established in the computer based adaptive assessment MAP was calculated. To ensure confidentiality, each teacher in both the treatment group and in the control group, were assigned a pseudonym, Teacher A, Teacher B, etc. Along with the pseudonym to name the teacher, a number to classify the number of years of experience of the teacher was assigned to each of the participants. For each teacher in the treatment group, the coached teachers, the teacher's pseudonym and the calculated mean percentage of his or her students that met the predetermined growth goal was recorded in a table. (See Table 1, Table 3, and Table 5). Also in Table 1, Table 3, and Table 5, for each of the teachers in the control group of uncoached teachers, the teachers' pseudonym and the calculated mean percentage of his or her students that met the predetermined growth goal were recorded in a table.

Following the compilation of the mean percentage of students meeting their predetermined growth scores according to the MAP Reading Assessment combined with the years of experience of each of the teachers, an analysis of variance, and ANCOVA, utilized the mean percentages for all of the coached teachers and the mean percentages for all of the uncoached teachers, when controlling for years of experience, was run in the SPSS program. The ANCOVA provided results of the comparison between the experimental group receiving the intervention of instructional coaching and the control group receiving no intervention while controlling for the variable of years of experience.

When entering the data, the dependent variable, the mean percentage of literacy growth, was entered as a numerical value. Coaching classification, coached or uncoached, was then recorded. Finally, the study included years of experience by

dividing the classroom teachers into the groups of less experienced teachers, those who had one - four years of experience, and more experienced teachers, those teachers who had five or more years of experience. Data was entered into the data tab of the SPSS computer program aligning coaching classification, years of experience, and mean percentage of students that met their literacy.

The ANCOVA analyzed the statistical significance between coaching classification, coached or uncoached, and years of experience upon the mean percentage of students meeting their growth goal. The statistical significance was calculated by performing a univariate analysis. The dependent variable for the test was the mean percentage of students meeting their literacy growth goal. The independent variable was the coaching classification and years of experience. Coaching classification, years of experience, and coaching classification plus years of experience were plotted on the horizontal axis. Included in the options of running the ANCOVA were displaying descriptive statistics, estimates of effect size, and tests of homogeneity to provide adequate information in the analysis of covariance.

Results

An ANCOVA was used to determine the interaction effect between participating in instructional coaching and years of teaching experience with the relationship to the dependent variable, mean percentage of students reaching their literacy growth goal. According to the ANCOVA conducted, neither the participation in an instructional coaching cycle nor year of teaching experience significantly impact the percentage of students that met their growth goal as determined by the computer based adaptive

assessment. The ANCOVA compared the mean percentage of students of coached teachers that met their growth goal as determined by the MAP Reading Assessment Growth report and the mean percentage of students of uncoached teachers that met their growth goal as determined by the MAP Reading Assessment Growth report when controlling for classroom teachers' years of experience.

The statistical significance was calculated by performing a univariate analysis. The dependent variable for the test was the mean percentage of students meeting their literacy growth goal. The independent variable was the coaching classification, coached or uncoached teachers, and years of experience. Coaching classification, years of experience, and coaching classification plus years of experience were plotted on the horizontal axis. Descriptive statistics, estimates of effect size, and tests of homogeneity were included in the analysis of covariance.

After running the one-way ANCOVA, three different measures of significance were provided. Levene's test of equality of error variance indicated that the percentage of growth based on the mean was not significant ($p > .05$, $p = .357$) thus leading researchers to consider the tests of between-subject effects. First, the significance of coaching classification, coached or uncoached, was given and was also determined to be insignificant in this study ($p > .05$, $p = .183$). Next, significance of years of experience upon mean percentage of students reaching their growth goals was given, which was also not significant in this study ($p = .05$, $p = .941$). Finally, significance of coaching classification when controlling for years of experience was reported, again not found to be significant in this study ($p = .05$, $p = .600$). None of the measures were statistically significant as none were less than .05 (See Table 7, Table 8, and Table 9).

Summary

The research study found that in these three urban schools for this particular time period of instructional coaching, 2018-2019, participating in an instructional coaching cycle did not have a statistically significant impact upon the literacy growth of the students in the classrooms of coached teachers. A null relationship between instructional coaching and student literacy growth data would indicate that, in this study, there was no statistically significant relationship between instructional coaching and student literacy growth data.

The significance of instructional coaching ($p > .05$, $p = .183$) indicates that in this study participation in a coaching cycle with an instructional coach did not have a statistically significant impact upon student literacy growth. Findings from this study, as described more in-depth in chapter five, indicate a need for additional research into the role of instructional coaching as a vehicle to improve teacher quality that will positively impact student literacy achievement.

Table 7

Descriptive Statistics: Means, Standard Deviation, and number of participants in the mean percentage of students making growth goals for coached and uncoached teachers when controlling for years of experience

Measure	M	SD	N
Coachedteacher			
Less experience			
0-4YOE	59.7421	12.89140	19
More experience			
5+YOE	57.7875	19.55669	8
Total	59.1630	14.79364	27
Uncoachedteacher			
Less experience			
0-4YOE	51.6444	11.91313	9
More experience			
5+YOE	54.2400	14.66745	15
Total	53.2667	13.48937	24
Total			
Less experience			
0-4YOE	57.1393	12.94894	28
More experience			
5+YOE	55.4739	16.17347	23
Total	56.3882	14.36456	51

Table 8

Levene's Test of Equality of Error Variances: Levene Statistic, degrees of freedom, and significance in the mean percentage of students making growth goals for coached and uncoached teachers when controlling for years of experience

Mean percentage of growth	Levene Statistic	df1	df2	Sig.
Based on Mean	1.103	3	47	.357
Based on Median	.882	3	47	.457
Based on Median and with adjusted df	.882	3	39.152	.459
Based on the trimmed Mean	1.052	3	47	.379

Note.

- a. Dependent variable: mean percentage of growth
- b. Design: Intercept + coaching classification + YOE + coaching classification * YOE

Table 9

Tests of Between-Subject Effects: Sum of Squares, degrees of freedom, mean square, F value, and significance in the mean percentage of students making growth goals for coached and uncoached teachers when controlling for years of experience

Mean percentage of growth	Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	1.103	3	167.047	.8	.500
Intercept	140440.415	1	140440.415	672.450	<.001
Coaching classification	381.559	1	381.559	1.827	.183
YOE	1.156	1	1.156	.006	.941
Coaching classification * YOE	58.254	1	58.254	.279	.600
Error	9815.893	47	208.849		
Total	172478.320	51			
Corrected total	10317.033	50			

Note. R Squared = .049 (Adjusted R Squared = -.012)

Summary, Conclusions, and Recommendations

Summary of Study

As a means to increase the quality of classroom teachers in both their knowledge and expertise, instructional coaching was used to provide an intervention for classroom teachers. Both qualitative data and budding quantitative data suggest a relationship between instructional coaching, teacher growth, and student achievement (Ballard & Bates, 2008; Bean et al., 2010; Cornett & Knight, 2008; Matsumura et al., 2010; Sanders & Rivers, 1996; Teemant et al., 2011; Wenglinsky, 2000). With the ever increasing emphasis upon teacher quality and enhancing student achievement for minimal costs, understanding the impact of instructional coaching upon teacher growth and student achievement was paramount (Ballard & Bates, 2008; Bean et al., 2010; Cornett & Knight, 2008; Darling-Hammond et al., 2009; Elish-Piper & L'Allier, 2008; Horoi & Bhai, 2017; Joyce & Showers, 1982; Matsumura et al., 2010; Sanders & Rivers, 1996; Teemant et al., 2011). The purpose of this study was to provide quantitative data to determine the presence or absence of a statistical relationship between a teacher's participation in instructional coaching and improvement in the literacy data of the students in the classroom. Supplying quantitative data could provide evidence that instructional coaching yielded a return on the investment.

The study used a quantitative method to investigate the existence of a statistical significance in the student achievement data between teachers participating in an instructional coaching cycle as compared to student achievement data of teachers not participating in an instructional coaching cycle. Literacy growth scores from the MAP Growth Reading assessment were used to measure students' literacy development to

establish if there was a significant difference between the scores of students of coached teachers and uncoached teachers during the time period of instructional coaching. For both coached and uncoached teachers, student scores from the spring MAP Growth Reading assessment were compared against student scores from the fall MAP Growth Reading assessment to determine a level of literacy growth, a necessary step to enhance student literacy achievement. Students could either meet or exceed their expected growth, meaning that the student's anticipated raw score revealed progress of at least one academic year of literacy growth as determined by the computer based adaptive assessment. The alternative was that students did not meet their expected growth, meaning the raw score was less than the minimum score needed to demonstrate one year of literacy growth as determined by the computer based adaptive assessment. The mean percentage of students meeting literacy growth scores for each class of coached teachers was compared to the mean percentage of students meeting their literacy growth scores in each class of uncoached teachers when controlling for the years of experience of the classroom teachers.

There were two groups of participants in the study. One group, the intervention group or the coached teachers, participated in an instructional coaching cycle, most frequently the Impact Cycle, with an instructional coach for one or more cycle rotations (Knight, 2018). The coaching cycle included opportunities for the instructional coach to visit the teachers' classrooms, meet regularly with teachers to provide feedback, and engage in reflective dialogue with classroom teachers (Knight, 2018; Knight, 2007; Knight & van Nieuwerburgh, 2012). The control group of uncoached teachers did not participate in an instructional coaching cycle with the instructional coach. Because of

the role of the instructional coach, both coached and uncoached classroom teachers had opportunities to engage in professional learning with the instructional coaches through staff professional development opportunities including professional learning communities, team planning, and faculty meetings.

While controlling for years of experience of the classroom teachers, this study compared the intervention group of coached teachers and the control group of the uncoached teachers. The MAP Growth reading assessment, a norm-referenced adaptive computer-based assessment, was used to collect the student growth data. From the assessment reports, student literacy growth data was collected from the reading portion of the assessment for all teachers in School A, School B, and School C. The mean percentage of students meeting their projected literacy growth from the MAP Reading Assessment was calculated for both the coached and uncoached teachers. The data was sorted into groups of teachers, coached teachers and uncoached teachers. Years of experience of each of the teachers was coded (See Table 1, Table 3, and Table 5). Using the IBM Statistical Package for the Social Sciences [SPSS], an ANCOVA was run to compare the mean growth between the scores of students in the classrooms of the coached and the scores of students in the classrooms of uncoached teachers while controlling for the variance in years of experience. The software computed the data in order to establish the presence or absence of statistical significance between the experimental and control groups.

Summary of Findings and Conclusions

The findings of this study indicate that there was not a significant statistical difference between the mean percentages of students who met the anticipated literacy growth of students of teachers that participated in an instructional coaching cycle as compared to the growth data of students of teachers that did not participate in an instructional coaching cycle. The ANCOVA results are presented in Table 7, Table 8, and Table 9.

Regarding coaching classification, there was no statistical difference between teachers participating in a coaching cycle and teachers who did not participate in an instructional coaching cycle ($p > .05$, $p = .187$). School A had a difference in the mean percentage of students meeting the literacy growth goal of coached teachers, 64.3%, as compared to those of uncoached teachers, 47.85%. In School B the converse was true in difference of the mean percentage of students meeting the literacy growth goal of coached teachers, 46.15%, as compared to those of uncoached teachers, 55.8%. For School C there was less variability among the two groups of teachers' mean percentage of students' literacy growth goal acquisition with coached teachers at 61.1% and uncoached teachers at 56.1%. While the mean percentage of student literacy growth of coached teachers ($M=59.1630$) is greater than the mean percentage of student literacy growth of uncoached teachers ($M=53.2667$), the difference between the two mean percentages is not great enough to indicate that instructional coaching has a statistically significant effect in this study.

The covariant in the study, years of experience, did not have a significant effect ($p > .05$, $p = .941$). Coached teachers in School A had a mean of 4.3 years of experience while uncoached teachers had a mean of 8.5 years of experience. For School B, the

mean years of experience for coached teachers was 2.3 years and the mean years of experience for uncoached teachers was 4.3 years. Finally for School C, the mean years of experience for coached teachers was 8.3 years of experience and 12.9 years of experience for uncoached teachers. Among the three schools, the least experienced teachers were first year teachers, totaling seven teachers, and the most experienced teachers had more than twenty five years of experience, totaling two teachers. According to the results of this research study, years of experience is not a significant covariant of student literacy growth data.

When combining coaching classification and accounting for years of experience, there was not a statistically significant effect upon the mean percentage of students achieving growth goals in literacy ($p > .05$, $p = .600$). This indicated that years of experience did not account for enough of the variation when considering the mean percentage of student literacy growth for classroom teachers and the classification of coached or uncoached classroom teachers.

Implications

Theoretical Implications

Learning is a socially constructed experience (Vygotsky, 1978). There continues to be a need for adults to have a learning experience that involves dialogue and reflection rather than providing professional learning opportunities that force teachers to sit idly to receive disseminated information (Knight, 2009; Wenglinisky, 2000; West, 2002). The dialogical experience of the Partnership Principles used during instructional coaching offers a means to provide professional development with

opportunities to socially construct knowledge through dialogic interactions employs the study's theoretical framework, the social constructivist theory (Knight, 2021; Knight, 2018; Knight, 2011; Knight, 2009; Vygotsky, 1978). Throughout the coaching experience the classroom teacher reflects through regular conversations with the instructional coach (Hasbrouck & Denton, 2007; Knight, 2018; Suarez, 2017).

Although the data from this study did not indicate a statistically significant impact of coaching upon students' literacy growth, the theoretical implication of providing reflective and dialogical opportunities for adults to learn is supported by other research studies. It remains an important goal for teachers to continue their knowledge acquisition for the duration of their professional career. Intentional efforts are necessary to continuously improve teacher skill, teacher knowledge, and teacher efficacy in order to positively impact student achievement (Alkan et al., 2017).

Supporting adult learners, as evidenced in adult learning theory, should include individualized support and feedback to allow the classroom teachers to socially construct and internalize new learning (Gergan, 1985; Knight, 2009; Shidler, 2009; Vygotsky, 1978). Instructional coaching, although not a statistically significant factor in this small scale study, did include opportunities to allow for the social construction of learning for classroom teachers. The classroom teachers' social constructing of their learning was particularly evidence in the use of the Partnership Principles, which assume active listening and reflection during professional conversations (Hammond et al., 2017; Knight, 2009; Robertson et al., 2020; Shidler, 2009; Vygotsky, 1978). Even without the evidence of statistical significance in this particular small-scale study, upholding the ideology of the Partnership Principles as a means to create an atmosphere

for lasting professional learning was critical in order to maximize the success of the classroom teacher in the quest for improvement in teaching and learning (Knight, 2009).

Participating in professional learning, including learning that transpires through the professional dialogue present in instructional coaching, provided more intentional and individualized professional growth opportunities to increase teacher effectiveness, thus leading to increased student achievement (Ballard & Bates, 2008; Darling-Hammond et al., 2009; Joyce & Showers, 1982; Sanders & Rivers, 1996; Teemant et al., 2011). An important premise behind instructional coaching was in the motivation of the classroom teacher. One key assumption of instructional coaching is a willingness of the teacher to engage in professional learning with the instructional coach (A. Hoffman, personal communication, November 4, 2021). It was important to note that, in this study, classroom teachers were not necessarily motivated to learn more or improve upon their practice and could have been neither willing nor motivated to participate in professional learning, even individualized learning with an instructional coach.

Therefore another theoretical implication is the need to study willingness and motivation as an important variable that could potentially influence the dependent variable, or the mean percentage of students' literacy growth. Motivation and attitude are closely related traits and are highly interdependent characteristics (Peak, 1955). High motivation, or having a willingness to engage, determines individuals' persistence in their actions. Instructional coaching combined with or as a means of quality professional development could offer an efficient model to help willing teachers acquire new knowledge and implement new learning in order to most effectively educate students (Knight, 2009).

Practical Implications

Results from this study with these teachers during this particular period in time did not find the participation in a coaching cycle with an instructional coach to have a statistically significant impact upon students' literacy growth as indicated by an adaptive computer-based assessment ($p > .05$, $p = .183$). Should the use of dialogue and reflection be important in adult learning, as contended by adult learning theory, then the need to determine how to meet the dialogical needs of teachers needs further investigation (Gergan, 1985; Knight, 2009). Because other preliminary research supports the notion that the instructional coaching of teachers does have a positive effect on student data, additional and more broad-scale research must transpire to determine if instructional coaching yields a return upon the investment (Ballard & Bates, 2008; Bean et al., 2010; Cornett & Knight, 2008; Matsumura et al., 2010; Sanders & Rivers, 1996; Teemant et al., 2011; Wenglinsky, 2000).

In addition, past research pertaining to the years of experience held by a classroom teacher and the connection to teacher quality is contradictory. One group of studies suggest that teachers' effectiveness increases in tandem with years of teaching experience (Alkan et al., 2017; Berger et al. 2018; Muhonen et al., 2021; Pressley et al., 2019). According to these researchers, teachers with less experience are anticipated to have limited knowledge and are more likely to develop cognitive overload than their more experienced counterparts (Berliner, 2001; Stumer et al., 2013; Kim & Klassen, 2018). Other research studies contend that teacher effectiveness is not determined by the years spent in the classroom (King Rice, 2013). Newer classroom teachers can demonstrate significant progress towards mastery in teaching early in their career. This

study of the impact of instructional coaching with these classroom teachers during this period in time did not find years of experience to be a significant covariant for percentage of literacy growth ($p > .05$, $p = .941$). The lack of statistical significance of classroom teachers' years of experience supports the research that quality of the classroom teachers' experiences appears to be more indicative of teacher effectiveness than the number of years of experience (Muhonen et al., 2013).

The ANCOVA test did not yield statistically significant results for the mean percentage of literacy growth for teachers participating in a coaching cycle ($p > .05$, $p = .187$). In addition, the ANCOVA test did not yield statistically significant results for the mean percentage of literacy growth for teachers based on their years of experience ($p > .05$, $p = .941$). When carefully considering the limitations presented by all of the potential variations in the study, more questioned developed. Certainly, the differences in the variations of the schools' populations, the variations in the number of years of classroom teachers' experience became concerning, leading to questions about the roles of each. When this observation was combined with the unavoidable differences due to the use of human participants, be it the differences amongst the teachers or the differences between the instructional coaches, it is evident for the need to conduct additional statistical tests to consider coaching in individual schools. In addition, the variation in teacher quality, the willingness of the teacher's participation in coaching, the differences in the caliber of the instructional coach, and the small sample size support the need for increased research.

Future Implications

The results of the study reflect the need to conduct further quantitative research on the impact of instructional coaching upon student literacy growth and achievement. The study includes a possible type two error evident in the small sample size for both the treatment group and the control group. Enlarging the sample size would provide a greater participant pool and would increase the power of the results. Increasing the sample size, however, would add other potential variables in the addition of more instructional coaches and more classroom teachers as more schools must participate in the study. Another way to enlarge the N would have been to use individual student data rather than the mean data of the class.

Another future implication is to ensure that members of the intervention group, the coached teachers, are willing participants of a coaching cycle. Because of the importance of willingness as an important factor in participating in instructional coaching, future studies should include the stipulation that coached teachers are willing participants in an instructional coaching cycle. In the current study, teachers could have been willing participants, coerced participants, or mandated participants in a coaching cycle. Any participants beyond willing participants affect the attitudes and motivations of the teachers, which in turn potentially affect the actions of the teachers hence impacting the dependent variable, the mean percentage of literacy growth (Peak, 1955). Increasing the sample size of willing participants would possibly allow for the participants to be randomly selected whether they are in the intervention group of teachers willing to be coached or the control group of uncoached teachers rather than, by necessity, having to use all of the available classroom teachers.

Strengths and Weaknesses of Study

While collecting the data, additional strengths and weaknesses of the study became evident. One strength of the study included the theoretical model behind the study. The understanding of the social construction of learning is important to providing learning for all individuals, even adults (Vygotsky, 1978). By recognizing the failures of current professional development as inadequate to sufficiently impact teacher effectiveness, this study highlights important changes that need to transpire for the professional development of educators (Christie, 2009; Cornett & Knight, 2008; Knight, 2009). Individualized learning that offers opportunities for feedback, praxis, and support are critical for the lasting learning of teachers to best impact the lasting learning of students (Aguilar, 2019; Cameron & Ebrahimi, 2014; Knight, 2018; Knight, 2009; Stefaniak, 2017; Vygotsky, 1978; Wenglinsky, 2000). While the data from this particular study with these particular coaches, teachers, and students during this specific period of time did not indicate a statistically significant impact of instructional coaching upon student literacy growth data, additional large-scale research could yield different findings.

A significant weakness in this study was the inability to control for the numerous variables. Any study has challenges in the quest to minimize the variables to ensure greater accuracy of results. Yet when considering human participants the difficulty in minimizing all possible variation is extremely complicated. In this particular study, there was the variation in the quality and distinctive styles of the instructional coaches, the differences in disposition and aptitude in coached and uncoached classroom teachers, and the diverse needs of students across schools and classrooms.

As each of the three instructional coaches in the study have distinct personalities, dispositions, qualifications, and coaching styles, there is no means to account for the differences in the quality of the coaches. Although great lengths were taken to include coaches with similar experiences and training, there was still variance among caliber of the coaches. The coaches had varying degrees of experience prior to beginning their employment in the coaching position including different degrees, varying years of experience in education, and diverse experiences in teaching dissimilar age levels and content.

Second, the study did not account for the quality of the classroom teachers. Due to the need to maintain confidentiality, classroom teachers' evaluations were not accessible. Therefore the research was unable to account for the quality of the teachers, as determined by evaluators using the Framework of Teaching, prior to engaging in coaching (Danielson, 2014). Potentially there could be extreme differences between the qualities of teachers that participated in coaching as compared to the quality of teachers that did not participate in coaching. There could also be wide variation in the quality of teachers between the three schools.

In addition, because data from three different schools was used, there were different philosophies as to which teachers should participate in instructional coaching. Work of the Instructional Coaching Group advocates the need for teachers to willingly engage in coaching to maximize effectiveness (A. Hoffman, personal communication, November 4, 2021; Knight, 2018). It is unclear as to which, if any, teachers were able to willingly participate in an instructional coaching cycle, which teachers were highly encouraged to participate in an instructional coaching cycle, and which teachers were

mandated to participate in an instructional coaching cycle. Neither motivation nor quality of teachers were measured, yet potentially impact results therefore is a weakness of this study.

The variation among students was also a weakness of this study. While the three selected schools were in the same community, were in similar locations of the city, and had high percentages of underrepresented students, the differences among the three schools was startling. According to the school report cards, School A had a population of 84% economically disadvantaged students and 38% English Language Learners with the primary languages spoken being English, Spanish, French, and Swahili. School B had a population of 85% economically disadvantaged students and a population of 68% English Language learners with Spanish being the primary language spoken and English being the secondary language. School C had a population of 87% economically disadvantaged students and an English Language Learner population of 22% with the primary languages being English and Spanish. Such differences represent diverse students' needs that affect classroom cultures and could require the instructional coach to exercise a different skill set. Aside from the diversity of the schools and classrooms, the overall composition of the classrooms were not considered. No behavioral data was collected to determine if a particular class or a particular school had greater behavioral or social emotional needs that potentially impacted student learning and hence the results of the study.

Finally, upon further learning following the completion of the study, additional consideration needed to be given to the distinction between instructional coaching and implementation coaching. Instructional coaching involves the use of the Impact Cycle

(Knight, 2018). Instructional coaching begins with a student goal in mind set by the teacher based on the needs of the classroom with the intent to increase student learning in some measureable capacity. Conversely, implementation coaching occurs when a teacher is learning a new skill or strategy and is in the process of learning to implement the skill, strategy, routine, or procedure (A. Hoffman, personal communication, November 4, 2021). Often, an instructional coaching goal may follow an implementation goal, or after a teacher learns how to implement a new element to the classroom he or she may then set a student centered goal that is possibly impacted by what was newly implemented. Both implementation coaching and instructional coaching can serve important roles in teacher learning and development. The distinction, however, was neither made nor accounted for in this study.

Recommendations for Future Research

Current research suggests that instructional coaching positively affects the professional learning among educators, potentially translating to the learning of students (Cornett & Knight, 2009; Knight, 2018; Knight, 2009; Knight, 2007; Kurz et al., 2017). Because a developing body of literature include studies that suggest that students of teachers coached by instructional coaches demonstrated greater academic achievement than those students of non-coached teachers, further large-scale research is needed to confirm or discount the position (Bean et al., 2010; Cornett & Knight, 2008; Poglinco & Bach, 2009; Teemant et al., 2011; Wenglinsky, 2000). Although this study did not find a statistically significant difference in student literacy growth of coached teachers as compared to uncoached teachers, additional studies are needed to determine if there is a

connection between the participation in a coaching cycle with an instructional coach and increased student literacy growth and achievement.

For future research, additional studies could be conducted with a larger sample size to eliminate the existence of possible type two errors like those potentially present in this study. Future studies could increase the number of classroom teachers in both the intervention group of coached teachers and the controlled group of uncoached teachers. Increasing the sample size of teachers would increase the number of participating schools and instructional coaches as well. Providing this additional data of a greater population of participants increases the validity of the research results.

Future studies need to account for the inherent belief that those participating in an instructional coaching cycle be given a choice to be coached, allowing for willing participation as opposed to mandated participation (A. Hoffman, personal communication, November 4, 2021). The belief behind the structures of instructional coaching is that the instructional coach and the coachee both embrace a continuous growth mindset and are motivated to improve (Dweck, 2006/2008; Peak, 1954). When forced to participate in professional learning, teachers have an altered motivation which will impact his or her disposition (Peak, 1954). Yet when efficacious, a teacher's performance may actually exceed his or her actual capabilities as a teacher (Bandura, 1998). Future studies should have both an increased participant pool and should include only coachees that choose to willingly participate in a coaching cycle with an instructional coach. From the classroom teachers interested in and willing to be coached, the desired number of participants could be randomly selected from the participant pool increasing the validity of the findings.

Existing research that is qualitative in nature discusses the influence of instructional coaching upon the attitudes and confidence of classroom teachers participating in a coaching cycle (Ballard & Bates, 2008; Darling Hammond et al., 2017; Neufeld & Roper, 2002; Siaw Hui, et al., 2020; West, 2002). Because teacher effect, in part influenced by efficacy, is the most salient factor in student achievement, qualitative research determining the impact of offering instructional coaching support to develop teacher quality combined with quantitative research about coached teachers' students' achievement data could work in tandem to give a more complete picture (Bandura, 1998; Ross, 1992; Vanburg & Stephens, 2009). Rather than purely qualitative data or purely quantitative data, a mixed methods approach to determine the role of instructional coaching influencing teachers' affect could provide the most complete picture for future research to maximize opportunities for student success (Cornett & Knight, 2008; Hattie, 2010; Sanders & Rivers, 1996).

A growing body of literature suggests that students of teachers coached by instructional coaches demonstrate greater academic achievement than those students of non-coached teachers (Bean et al., 2010; Cornett & Knight, 2008; Poglinco & Bach, 2009; Teemant et al., 2011; Wenglinsky, 2000). While the results of this limited study did not add to this body of research, enough evidence from the other studies warrant continued research on the impact of instructional coaching upon student achievement. Since other, more elaborate research does find instructional coaching to be effective for both teachers and students, researchers have the obligation to continue to study classroom teachers and the data of the students that they serve to obtain more valid

results supporting or discounting both the professional significance upon classroom teachers and the cost effectiveness of instructional coaching.

Recommendations for Future Practice

Since teacher quality is a critical factor for student achievement, educators will continue to need ongoing professional learning for continuous professional growth in order to enhance teacher quality and effectiveness. Because past efforts to increase teacher quality have neither universally created the desired level of teacher caliber nor the level of student performance, additional efforts are needed to better equip teachers for the challenges of educating today's students (Christie, 2009; Cornett & Knight, 2008; Knight, 2009). Numerous research studies contend that instructional coaching is an important practice in developing teacher efficacy and improving instructional practice, which in turn impacts student learning, efforts should be made to continue the use of instructional coaching as a means to provide professional learning (Christie, 2009; Cordingly, 2005; Darling-Hammond et al., 2017; Desimone & Pak, 2017; Eisenberg et al., 2017; Hashim, 2020; Joyce & Showers, 1982; Knight, 2021; Knight, 2018; Knight, 201; Kraft & Blazar, 2018; Kraft et al., 2018; Neufeld & Roper, 2002; Showers, 1985a; Siaw Hui et al., 2020).

In future practice, instructional coaching should be reserved for willing participants with any level of experience. Future practice could include instructional coaching as a means to offer continued reflection opportunities paired with feedback and support working in tandem with a high quality professional development program. Motivation research indicates that, when individuals are unwilling to participate in an

activity such as instructional coaching, the attitudes of the individual may negatively impact his or her performance (Peak, 1954). In order to maximize performance in future practice both the instructional coach and the classroom teacher participating in the coaching cycle should be willing to engage in reflective practice to evoke changes to instructional practice.

When developing future practices, rather than adhering to a traditional workshop model, professional development must be designed to uphold social constructivist theory, allowing for professional learning to occur in a continuous, job-embedded manner and offer more intentional support to teachers (Christie, 2009; Fowler, 2014; Knight, 2018; Knight, 2009). Additional research is needed to determine if instructional coaching is the most effective way to offer support for professional learning and maximize student achievement.

Another implication for future practice is the need to distinguish between implementation coaching and instructional coaching when using the Impact Cycle (A. Hoffman, personal communication, November 2, 2021). The intent of the Impact Cycle is to allow for teacher choice while the instructional coach supports the teacher in his or her quest to make changes to classroom practice. As part of the Impact Cycle, the teacher needs to select a measurable student centered goal (Knight, 2018). Upon selecting the goal for student learning, the teacher learns and grows with the intent of improving student learning and student achievement. This is the heart of instructional coaching. When coaches, even when using the structure of the Impact Cycle, move into more implementation coaching, or supporting teachers as they implement new structures or programs, the purpose of the coaching changes from improving instruction

to improving implementation (A. Hoffman, personal communication, Nov. 4, 2021). In future practice, instructional coaches need to ensure that the goals of classroom teachers are student centered and that the purpose of the coaching interactions are to enhance student learning instead of teacher practice.

Gawande contends that “coaching may prove essential to the success of modern society” (Gawande, 2011, p. 21). So great is the belief in coaching, as evidenced by the response of willingly coached teachers, that coaching for classroom teachers is a resource across the country. Both Gawande and Knight agree that not all coaches are effective and there is a difference between good coaching and bad coaching (Gawande, 2011). But coaching done well by a high caliber coach with a teacher willing to participate in an instructional coaching cycle in a culture of continuous improvement shows great promise from both qualitative and quantitative studies (Christie, 2009; Cordingly, 2005; Darling-Hammond et al., 2017; Desimone & Pak, 2017; Eisenberg et al., 2017; Hashim, 2020; Joyce & Showers, 1982; Knight, 2021; Knight, 2018; Knight, 201; Kraft & Blazar, 2018; Kraft et al., 2018; Neufeld & Roper, 2002; Showers, 1985a; Siaw Hui et al., 2020). Large-scale additional research that supports the impact of coaching on teacher efficacy and research that supports the impact of coaching upon student achievement reducing as many variables as possible is still needed. It is still possible to hypothesize that a larger scale study of high caliber coaches could potentially find statistical significance in the practice of true instructional coaching in order to ensure that the benefits exceed the investment will support the use of coaching as a means to improve teaching and learning. After all, “coaching done well may be the most effective intervention designed for human performance” (Gawande, 2011, p.23).

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Appendices

Appendix 1: Internal Review Board Approval

Eastern Kentucky University Institutional Review Board Limited Review Application for Exemption Determination

This application is to be used to request an exemption determination under a limited review process. Only the IRB may issue an exemption determination, and the investigator must receive this determination prior to engaging in research activities involving human subjects.

In order for human subjects research to be reviewed under limited review for an exemption determination, the study must represent not greater than minimal risk to its participants and include only activities that fall within the categories listed in this application (see Section 2).

Minimal risk means that the probability and magnitude of harm or discomfort anticipated in the research are not greater in and of themselves than those ordinarily encountered in daily life or during the performance of routine physical or psychological examinations or tests.

Instructions for Applying for Limited Review

1. All applications for IRB review must be submitted online by the principal investigator.
 2. After completing this application form and all required attachments, access the online submission system at eku.infoready4.com. Choose Limited Review Application for Exemption Determination from the list of available opportunities and click the Apply button on the right. If needed, you can filter the category column by Institutional Review Board (Human Subjects Research).
 3. If you are a current EKU employee or student, click the option to log in as an EKU user. Your user name and password are the same as what you use to log in to EKU's network. Your user name is not your email address.
 4. Complete the basic information in the online application and upload this application form and all required attachments in their original file formats (i.e., Microsoft Word documents). **Please do not convert files to PDFs.** PDFs are allowable for signed documents, CITI training documentation, and other files that were provided to you in PDF format. **If you copy and paste text into the application's form fields, please format your text to Tahoma font in size 10 prior to copying.**
 5. Upon receipt of a new online application, the IRB administrator will review the submission for completeness and return incomplete applications for updates prior to processing.
 6. Once an application is accepted by the IRB administrator, it will be assigned to the faculty advisor (if the principal investigator is a student) and the department chair for approvals prior to being reviewed by the IRB.
 7. If the IRB reviewers have questions or request updates to the application materials, the principal investigator will be notified by email and asked to resubmit application materials by email.
-
8. Once the IRB has approved the application, the principal investigator will be notified by email.

Application Checklist

In order for the IRB to consider an exemption determination through a limited review process, the following items are required:

- Limited Review Application for Exemption Determination (this application)
 - CITI Training Completion Reports for all investigators, key personnel, and faculty research advisors
Note that the Basic Course for Social Behavioral or Biomedical Researchers is required. The Refresher Course cannot be accepted unless the investigator has previously completed the Basic Course and is using the Refresher Course to renew training credentials.
- As applicable (check all that apply):
- Recruitment materials (i.e., advertisements, verbal scripts, cover letters, etc.)
 - Consent Materials (i.e., introductory cover letter, consent script, etc.)
 - Instrument(s) to be used for data collection (i.e., surveys, questionnaires, interview questions, assessments, etc.)
 - Letter(s) granting permission to use off-campus facility for research

*All documents that will be provided to subjects must include the title of the study.
This includes recruitment, consent, and data collection documents.*

Limited Review Application for Exemption Determination

Section 1: General Information

1. **Title of Study:** INSTRUCTIONAL COACHING AND STUDENT ACHIEVEMENT
2. **Principal Investigator:**
Principal Investigator Name: LeeAnn Lewellen
Department: Educational Leadership and Policy Studies
Position: Doctoral Student
3. **Degree Program, Faculty Advisor, and Committee Members:**
(Skip to Item 4 if principal investigator is not an ECU student)
Degree Program: Educational Leadership and Policy Studies
Faculty Research Advisor: Ann Burns
Committee Members (required for theses, dissertations, scholarly projects, field experience, or other studies guided by an academic committee):
Raymond Lauk, William Place
4. **Other Investigators:** Identify all other investigators assisting in the study. If additional lines are needed, please attach a Continuation Page for Other Investigators.

Name: Click and type.	Authorized to obtain consent? <input type="checkbox"/> Yes <input type="checkbox"/> No
Responsibility in Project: Click and type.	
Name: Click and type.	Authorized to obtain consent? <input type="checkbox"/> Yes <input type="checkbox"/> No
Responsibility in Project: Click and type.	
Name: Click and type.	Authorized to obtain consent? <input type="checkbox"/> Yes <input type="checkbox"/> No
Responsibility in Project: Click and type.	
Name: Click and type.	Authorized to obtain consent? <input type="checkbox"/> Yes <input type="checkbox"/> No
Responsibility in Project: Click and type.	

Please check if a Continuation Page for Other Investigators is attached.
5. **Estimated Duration of Research Project:** upon IRB approval through 12/1/2021
Note that research may not begin until IRB approval has been granted. Projects may be approved for a period of up to three years, after which time, a new application is required.
6. **Funding Support:** Is the research study funded by an internal grant or an external grant or contract? Yes No
Funding Agency: [Click and type.](#)
7. **Is the proposed study a clinical trial?** Yes No
Please respond to the following questions to determine whether a study meets the clinical trial definition:
 - Does the study involve human participants? Yes No
 - Are the participants prospectively assigned to an intervention? Yes No
 - Is the study designed to evaluate the effect of the intervention on the participants? Yes No
 - Is the effect being evaluated a health-related biomedical or behavioral outcome? Yes NoIf the answers are all "yes," the study is a clinical trial. If any answers are "no," the study is not a clinical trial
8. **Risk Category:**
 - Not greater than minimal risk
 - Greater than minimal risk, but of direct benefit to individual participants – *Please complete full review application instead of this form.*
 - Greater than minimal risk and no direct benefit to individual participants, but likely to yield generalizable knowledge about the subject's disorder or condition - *Please complete full review application instead of this form.*

Limited Review Application for Exemption Determination

Section 2: Exemption Categories

Research activities may be classified as exempt when the only involvement of human subjects falls within one or more of the categories below and the study represents not greater than minimal risk to its participants. If any activities do not fit in the categories below, the project is not eligible for exemption, and the investigator is required to instead apply for expedited or full review.

1. Select one or more of the categories below that apply to the research project:

- Category 1:** Research conducted in established or commonly accepted educational settings that specifically involves normal educational practices that are not likely to adversely impact students' opportunity to learn required educational content or the assessment of educators who provide instruction. This includes most research on regular and special education instructional strategies, and research on the effectiveness of or the comparison among instructional techniques, curricula, or classroom management methods.

- Category 2:** Research that only includes interactions involving educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures, or observation of public behavior (including visual or auditory recording) if at least one of the following criteria is met:
 - (i) The information obtained is recorded by the investigator in such a manner that the identity of the human subjects cannot readily be ascertained, directly or through identifiers linked to the subjects;
 - (ii) Any disclosure of the human subjects' responses outside the research would not reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, educational advancement, or reputation; or
 - (iii) The information obtained is recorded by the investigator in such a manner that the identity of the human subjects can readily be ascertained, directly or through identifiers linked to the subjects, and an IRB conducts a limited IRB review to make the determination that there are adequate safeguards to protect the privacy and confidentiality of the subjects.

IMPORTANT: Subpart D: Additional Protections for Children Involved as Subjects in Research restricts Exemption 2 in the following ways:

- For research involving children, exemption 2 (i) and 2 (ii) above may be applied only to research involving educational tests or the observation of public behavior when the investigator(s) do not participate in the activities being observed.

- Exemption 2 may not be applied to survey procedures or interview procedures involving children as subjects.
- Exemption 2 (iii) above may not be applied to research involving children.

- Category 3:** Research involving benign behavioral interventions* in conjunction with the collection of information from an **adult** subject through verbal or written responses (including data entry) or audiovisual recording if the subject prospectively agrees to the intervention and information collection and at least one of the following criteria is met:
 - (i) The information obtained is recorded by the investigator in such a manner that the identity of the human subjects cannot readily be ascertained, directly or through identifiers linked to the subjects;
 - (ii) Any disclosure of the human subjects' responses outside the research would not reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, educational advancement, or reputation; or
 - (iii) The information obtained is recorded by the investigator in such a manner that the identity of the human subjects can readily be ascertained, directly or through identifiers linked to the subjects, and an IRB conducts a limited IRB review to make the determination that there are adequate safeguards to protect the privacy and confidentiality of the subjects.

*Benign behavioral interventions are brief in duration, harmless, painless, not physically invasive, not likely to have a significant adverse lasting impact on the subjects, and the investigator has no reason to think the subjects will find the interventions offensive or embarrassing. Provided all such criteria are met, examples of such benign behavioral interventions would include having the subjects play an online game, having them solve puzzles under various noise conditions, or having them decide how to allocate a nominal amount of received cash between themselves and someone else.

Does the project involve deception? Yes No

If the research involves deceiving the subjects regarding the nature or purposes of the research, this exemption is not applicable unless the subject authorizes the deception through a prospective agreement to participate in research in

circumstances in which the subject is informed that he or she will be unaware of or misled regarding the nature or purposes of the research.

IMPORTANT: Note that this exemption applies only to adult subjects and cannot be applied to research involving children.

- Category 4:** Secondary research for which consent is not required: Secondary research uses of identifiable private information or identifiable biospecimens, if at least one of the following criteria is met:
- (i) The identifiable private information or identifiable biospecimens are publicly available;
 - (ii) Information, which may include information about biospecimens, is recorded by the investigator in such a manner that the identity of the human subjects cannot readily be ascertained directly or through identifiers linked to the subjects, the investigator does not contact the subjects, and the investigator will not re-identify subjects;
 - (iii) The research involves only information collection and analysis involving the investigator's use of identifiable health information when that use is regulated under 45 CFR parts 160 and 164, subparts A and E, for the purposes of "health care operations" or "research" as those terms are defined at 45 CFR 164.501 or for "public health activities and purposes" as described under 45 CFR 164.512(b); or
 - (iv) The research is conducted by, or on behalf of, a Federal department or agency using government-generated or government-collected information obtained for non-research activities, if the research generates identifiable private information that is or will be maintained on information technology that is subject to and in compliance with section 208(b) of the E-Government Act of 2002, 44 U.S.C. 3501 note, if all of the identifiable private information collected, used, or generated as part of the activity will be maintained in systems of records subject to the Privacy Act of 1974, 5 U.S.C. 552a, and, if applicable, the information used in the research was collected subject to the Paperwork Reduction Act of 1995, 44 U.S.C. 3501 et seq.
- Category 5:** Research and demonstration projects that are conducted or supported by a Federal department or agency, or otherwise subject to the approval of department or agency heads (or the approval of the heads of bureaus or other subordinate agencies that have been delegated authority to conduct the research and demonstration projects), and that are designed to study, evaluate, improve, or otherwise examine public benefit or service programs, including procedures for obtaining benefits or services under those programs, possible changes in or alternatives to those programs or procedures, or possible changes in methods or levels of payment for benefits or services under those programs. Such projects include, but are not limited to, internal studies by Federal employees, and studies under contracts or consulting arrangements, cooperative agreements, or grants. Exempt projects also include waivers of otherwise mandatory requirements using authorities such as sections 1115 and 1115A of the Social Security Act, as amended. Each Federal department or agency conducting or supporting the research and demonstration projects must establish, on a publicly accessible Federal Web site or in such other manner as the department or agency head may determine, a list of the research and demonstration projects that the Federal department or agency conducts or supports under this provision. The research or demonstration project must be published on this list prior to

commencing the research involving human subjects.

- Category 6:** Taste and food quality evaluation and consumer acceptance studies:
- (i) If wholesome foods without additives are consumed, or
 - (ii) If a food is consumed that contains a food ingredient at or below the level and for a use found to be safe, or agricultural chemical or environmental contaminant at or below the level found to be safe, by the Food and Drug Administration or approved by the Environmental Protection Agency or the Food Safety and Inspection Service of the U.S. Department of Agriculture.

2. Will the study involve any procedures that fall outside the categories selected in Item 1 of this section?

- No Yes – apply for full or expedited review instead of exemption

3. Will the project involve prisoners? No Possibly Incidentally Yes – apply for full review

Subpart C: Additional Protections Pertaining to Biomedical and Behavioral Research Involving Prisoners as Subjects restricts the exemption categories below from being applied to research involving prisoners except for research aimed at involving a broader subject population that only incidentally includes prisoners (i.e., a web-based survey that an inmate may be able to access from a prison computer without the researcher being aware of the prisoner status).

Limited Review Application for Exemption Determination Section 3: Research Description

1. Research Objectives:

a. List the research objectives/hypotheses.

The objective of the study is to determine if instructional coaching of teachers impacts the student achievement of the students in the classes of coached teachers when controlling for teacher experience.

2. Project Location:

a. Where will the study take place?

In 3 urban elementary schools in a local school district.

Fayette County Public Schools
450 Park Place
Lexington, KY 40511

Northern Elementary School
340 Rookwood Parkway
Lexington, KY 40505

Russell Cave Elementary
3375 Russell Cave Road
Lexington, KY 40511

Yates Elementary School
695 East New Circle Road
Lexington, KY 40505

b. If the study will take place at a location other than EKU, attach a letter from an authorized representative of the organization granting permission to use facility for research purposes.

EKU only Letter(s) attached

c. Will any data be collected through organizations other than Eastern Kentucky University?

No Yes, complete the following:

- Will personnel of the organization be involved in the data collection process or have access to data after collection? No Yes - If yes, list personnel in Section 1, include copies of CITI training completion reports, and define role(s) here: [Click here to enter text.](#)

3. Subject Population:

a. What criteria will be used to determine the *inclusion* of participants in the study?

All classroom teachers in the building will be used in the study. The study will consider data from all of the students that participated in the literacy assessment.

b. What criteria will be used to determine the *exclusion* of participants in the study?

In order to maximize the power of the data, no participants will be excluded from the study.

c. Anticipated Number of Participants (*maximum*): 55 teachers and 1100 students

d. Age Range of Participants: teachers ranging from 1- 30 years of experience and students ages 5 through 11.

e. Gender of Participants: Male Female or Gender not considered in subject selection

f. Ethnicity of Participants: [Click and type.](#) or Ethnicity not considered in subject selection

g. Health Status of Participants: [Click and type.](#) or Health status not considered in subject selection

- h. **Will the study involve prisoners?** No Possibly Incidentally without the investigator's knowledge
 Yes (not eligible for exemption)
- i. **Will the study involve subjects who do not speak and/or read English?** No
 Yes (see Translation Certification form and guidance)

4. Recruitment of Participants:

a. How will prospective participants be identified for recruitment into the study?

All students and teachers in the three schools are prospective participants as whole school data will be used.

b. Describe the recruitment procedures to be used with potential participants.

Teachers were chosen for the treatment of instructional coaching using convenience sampling.

c. Recruitment materials to be used: Check all that will be used and attach copies. The study's title must be included on all documents.

- None Advertisement Flyer Verbal Recruitment Script Cover Letter
 Text to be posted in electronic participant management software
 Other: [Click here to enter text.](#)

5. Ensuring Voluntary Participation: While studies that are appropriate for exemption are not required to formally document the informed consent process, investigators are expected to provide information to potential participants and ensure their voluntary agreement to participate.

a. What procedures will be followed to ensure that potential participants are informed about the study and made aware that their decision to participate is voluntary?

Not applicable as the data belongs to the district and will be considered as school data.

b. Consent materials to be used: Formal consent forms are not required for exempt research; the following are examples of items typically used in exempt research to ensure voluntary participation. Check all that will be used and attach copies: None, Cover Letter, Introductory paragraph on data collection instrument,
 Other: [Click and type.](#)

6. Research Procedures

a. Describe in detail the research procedures to be followed that pertain to human participants. Be specific about what you will do and how you will do it.

The data is from the 2018-2019 academic school year. Upon receiving the data from the district, I will use the MAP growth report for reading to calculate the percentage of students that met their growth goal as determined by the assessment. I will sort the data into 2 groups – teachers that received the treatment of an intervention coach and teachers that did not receive the treatment. Controlling for number of years of teaching, I will use SPSS to determine if there is a statistically significant difference in the support of an instructional coach as determined by the number of students that meet their expected growth in literacy.

7. Potential Risks

a. Describe any potential risks—physical, psychological, social, legal, or other.

No identifiable data will be used. The data is pre-existing data and will not use the names of teachers or students. When controlling for years of experience, teachers will be placed into ranges of experience as to not make experience an identifiable piece of data.

b. What procedures will be followed to protect against or minimize any potential risks?

No names, addresses, student numbers, grade levels, or any other identifying data will be used for teachers or students.

8. Potential Benefits and Subject Compensation

a. Describe any potential benefits subjects will receive

Determining if instructional coaching impacts will help researchers to understand potential ways to offer support to teachers in order to maximize student achievement. The study potentially benefits the teachers if it is discovered the instructional coaching is an appropriate and effective support to positively impact teaching. The study potentially benefits students if it is discovered that instructional coaching is an appropriate and effective support to positively impact student achievement.

b. Will subjects receive compensation for their participation? No Yes (describe in detail below)

Click and type.

9. Research Materials, Records, and Confidentiality

a. What materials will be used for the research process? Include a description of both data collected through the study as well as other data accessed for the study. Copies of all data collection instruments must be attached and must include the title of the study.

Pre-existing data from the MAP assessment will be needed to obtain the data for the study. The request has been approved and the report has been requested from the district offices. Upon receiving the data, SPSS will be used to statistically analyze the data.

b. Describe procedures for maintaining the confidentiality of data.

The data for each subject will not be linked to the human subject thus making maintaining confidentiality more manageable.

c. Who will have access to the data? If anyone outside the research team will have access to the data, provide a justification and include a disclaimer in consent documents.

The researcher, the doctoral committee chair, and the doctoral committee will have access. The district already has access to the pre-existing data.

d. Describe how and where research records will be stored. Note that all research-related records must be maintained for a period of three years from the study's completion and are subject to audit. Student research records must be maintained by the faculty advisor who identified in Section 1, Item 3 of this application or provided to the IRB for records maintenance.

Records will be stored electronically. The district will provide the data in an electronic format to the researcher.

e. How will data be destroyed at the end of the records retention period (i.e., shredding paper documents, deleting electronic files, physically destroying audio/video recordings)?

Any electronic files will be deleted. Any physical evidence will be shredded.
