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Middle School Teachers' Perceptions of Instructional Coaching

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This is to certify that the doctoral study by

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has been found to be complete and satisfactory in all respects,
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Walden University
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Abstract

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BS, South Carolina State University, 1995

Project Study Submitted in Partial Fulfillment

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Abstract

Instructional coaching, a multifaceted form of job-embedded professional development in education, is widely spreading across the United States as a means of improving staff performance and student learning. The problem was that there was a decrease in 8th grade student achievement in mathematics in this school district. The purpose of the intrinsic qualitative case study was to examine the perceptions and experiences of middle school math teachers about the role of instructional coaches in supporting math instruction. Maslow's hierarchy of needs and Knowles' andragogy adult learning theories formed the conceptual framework that guided this study. The research questions focused on mathematics teachers' perceptions of the role of instructional coaches and their experiences working with coaches. A case study design was used to capture the insights of 5 mathematics teachers through semistructured interviews. Emergent themes were identified through open coding, and the findings were developed and checked for trustworthiness through member checking and a peer audit. The findings revealed 5 themes: collaboration, observations with feedback sessions, data analysis sessions, professional development, and student achievement. A professional development project was created to provide and improve collaborative skills between teachers and instructional coaches. This study has implications for positive social change through the creation of a plan to build stronger teacher-coach connections to improve student learning opportunities.

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Dedication

This research and doctoral journey are dedicated in memory of my loving mother, Wallace B. Laws who passed away prior to my completion. You taught me always to put God first and the value of hard work and determination. Mom, thank you for being my greatest cheerleader, always encouraging me to endure to the end. To my children, Dalvin and Zaniyah, thank you for your patience, unconditional love, and being mommy's inspiration to succeed. I also dedicate this to my God-mother, Prophetess Mary Elizabeth Ham. A woman of great faith. Thank you for the numerous prayers, encouraging words, and the conversation when I wanted to give up.

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Special acknowledgement to a special confidant, my family, and friends that have supported me along the way. Thank you, and I love each of you dearly!

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Section 1: The Problem

Over the past 2 decades, increased accountability was mandated by the United States Department of Education (ED) which required teachers to educate and prepare all students to become college and career ready (Sharp, 2016). Teachers were mandated to provide instruction that is appropriate for all students to increase student achievement regardless of their ability levels and personal learning needs (Pritchard, 2013; Robinson & Maldonado, 2014). This demand has created a need for high-quality teachers and leaders who could influence mathematics teaching and learning through visionary leadership, ambitious standards, and a commitment to equity across the United States. Moreover, the quality of schools and their graduates is dependent upon the quality of teachers and the effectiveness of their instruction (Gordon, 2013). Hernandez (2013) suggested teacher effectiveness was dependent upon the system in place to support educators in providing meaningful and engaging standards-based direct instruction to support the United States' need for increasing student achievement. According to Marzano and Simms (2013), teachers provided with rich opportunities to become equipped with subject matter expertise as well as research-based instructional strategies would be empowered to meet the personal and individual needs of all students regardless of their gender, ethnicity, or economic status. These teacher opportunities would increase occasions for student achievement.

The Obama Administration's Race to the Top initiative amplified the challenges of diverse school environments which required necessary leadership skills as well as intensified teacher accountability and effectiveness as it related to student achievement

(McGuinn, 2014). Effective leaders are cognizant of the various alternatives applied to significantly enhance academic success for all learners (Hargreaves & Fullan, 2012). Marzano and Simms (2013) indicated research-based practices were known to contribute to school improvement at the local, state, and national levels. Such contributions helped aid teachers in identifying students with learning problems which could hinder student academic success. Furthermore, all states have developed standardized tests to assess the academic achievement of students as well as their strengths and weaknesses (Sharp, 2016).

In South Carolina, each public school receives a report card indicating the school's performance, as well as students' mastery levels on its state adopted standardized test (South Carolina Department of Education, 2003). Schools must dedicate their resources and efforts to improving student achievement. Moreover, the No Child Left Behind Act (NCLB) of 2009 initially required teachers to update their skills and knowledge while transforming their instructional preparation as educators to become not only certified but also highly qualified (DeMonte, 2013).

The Elementary and Secondary Education Act, renamed in 2015 as Every Student Succeeds Act (ESSA), required responsibility of individual states in setting goals (Robins, 2014). Additionally, the ESSA required state educational systems to figure out the accountability system for schools and districts and how to intervene in low-performing schools (Hess & Eden, 2017). This further required states to submit accountability plans that identified four indicators to the ED starting in the 2017–2018 school year (ESSA, 2015). However, the principle focus remained on improving student

achievement through professional development (PD). The National Staff Development Council (NSDC) identified professional development as “a comprehensive, substantiated, and intensive approach to improving teachers' and principals' effectiveness in raising student achievement” (Wei, Darling-Hammond, & Adamson, 2010, p. 14).

Bayar (2014) suggested supporting collegial teacher collaboration and professional development which afford opportunities to learn and the implementation of best practices to enhance student achievement. Historically, teacher professional development was broad and did not focus on a particular area of interest, instructional strategy, or best practice (Stewart, 2014). Teachers attended unrelated workshops, general conferences, and trainings that did not offer sustainable professional learning (Bayar, 2014). Because of the gap between teacher expectations and the actual professional development received by teachers, Lotter, Yow, and Peters (2013) argued that teachers needed additional support and adequate time for implementation of these instructional strategies. Likewise, Kunz, Nugent, Pedersen, DeChenne, and Houston (2013) determined that even when teachers were provided quality training, they still needed ongoing professional development to support their effective implementation of best practices.

Stewart (2014) said that professional development sessions were professional opportunities initiated by administrators with the assumption teachers were the ones needing to be fixed. Moreover, professional development sessions were not tailor-made for the individual teacher or specific teacher needs (Jaquith, 2013; Zepeda, 2012). Similarly, Lotter et al. (2013) argued that one-time workshops, seminars, and conferences

were designed to address needs and smart goals listed in the school's or district's improvement plans. ESSA mandated professional development funding to be allocated for sustained and coherent training focused on increasing student achievement. More specifically, Bayar (2014) advocated that site-based and content focused professional development experiences provide opportunities for teacher satisfaction and school success.

Teachers perceived professional development as involving 10-minute breaks, consultants, and student-free in-service days before or after the school year (Bayar, 2014; Lotter et al., 2013). Childress (2014) claimed that only 20% of teachers participated in professional development opportunities they perceive as noteworthy or meaningful. According to andragogy theory, professional development activities need to focus more on the implementation of strategies and less on the content taught in order to provide a stimulating environment for adult learners (Cochran & Brown, 2016). Planning for professional development, according to Louis (2016), should be a collective effort focusing on authentic problems and specified teacher needs. Additionally, Zepeda (2012) recommended providing mutually planned professional training activities which inspired teachers to become more apt to participate and actively engaged in their own learning.

The Local Problem

The problem being studied was the constant decrease in eighth grade mathematical student achievement at the middle school where the research occurred. Members of the school leadership team (SLT) at the school where the study occurred expressed concerns about student achievement in mathematics. The SLT, which consisted

of administrators, teachers, and instructional support staff, believed the problem was the current implementation of instructional coaching practices at the local middle school where the research occurred. Additionally, the SLT believed instructional coaching appears to be unsupportive of mathematics teaching and learning as it relates to the increase of test scores in mathematics needed for middle school students to meet state-required proficiency levels. Moreover, district leaders needed to gain a deeper understanding of teachers' perceptions and experiences with mathematics instructional coaches.

Mathematics achievement has fluctuated for the past 3 years, as indicated by the results of the district's adopted benchmark assessments Training and Education in the 21st Century (TE21's) Case Benchmark Results. TE21's case benchmarks and state mandated assessment data from all middle-level students in the district showed a steady decline in mathematics achievement. Aligned to College- and Career-Ready standards/Common Core State Standards (CCSS), these benchmark assessments were designed to gauge the academic progress of all students and provide timely feedback for educators to guide and modify instruction. Moreover, these premade or custom-made benchmarks were tailored to the district's or school's needs. Sixty percent of the questions measure higher order thinking or cognitive depth of thinking. Student responses to this level of questioning categorized their level of thinking as depicted on Webb's depth of knowledge (Webb, 2009).

Webb's depth of knowledge, an organized tool of levels and descriptors for cognitive demands, was used to construct higher level test items on state standardized

assessments as opposed to Bloom's revised taxonomy. Furthermore, Webb's DOK categorizes the according to the complexity of thinking required to complete tasks from beginning to end (Aungst, 2014). DOK is also described as an effective and useful framework designed to support teaching and learning of the cognitive rigor of common core and state adopted standards. Hess' Cognitive Rigor Matrix (Hess, Carlock, Jones, & Walkup, 2009a) assisted educators in aligning the complexity of college- and career-ready standards, implementation of rigorous instruction, and standardized assessment. Moreover, the Cognitive Rigor Matrix merged rigorous teaching and learning which challenged 21st century learners. It further challenged learners to think critically as they answer and formulate questions analytically as they perform and accomplish tasks as well as reflectively as they articulate how and why knowledge is used and transferred in different disciplines and the real world (Hess, Carlock, Jones, & Walkup, 2009b; Hess, 2013).

At a 2012 school meeting, the administration at the local middle school where the research occurred stated that elementary and secondary content-specific instructional coaches were employed in the district beginning during the 2011-2012 school year. Data were not available documenting the effectiveness of the instructional coaching program. The district leadership team was not sure whether the program should continue implementation or expand the employment of instructional coaches at each school level. The mathematics benchmark achievement data could confirm whether the current instructional coaching method is working.

One of four schools in the district, the school where the research occurred served students in Grades 5-8 at two of the three school building sites. The total student enrollment in the district is 808. In the two middle schools, 10 core area teachers taught mathematics. District administration believed there was little academic experience among teachers who were responsible for mathematical instruction of students whose learning was assessed by high-stakes assessments.

Only one of these 10 teachers was certified in middle school mathematics. The remaining nine teachers were either elementary certified or had secondary certification. Seven of these 10 teachers were foreign teachers who were new to the educational field, while the remaining three teachers were returning veteran teachers with 6 or more years of experience (Yonezawa, Jones, & Singer, 2011). The term *veteran* referred to someone who has spent 6 or more years in the profession. Likewise, according to the National Education Association [NEA] (1997), veteran teachers are master instructors who support novice teachers in developing ways of managing time, organizing instruction, and evaluating student materials that are the most efficient and beneficial for them. The rest of these teachers have been in the teaching profession 5 years or fewer.

Located in a rural setting of the county, the research site was a Title I school with a school-wide project. Title I, Part A is the Elementary and Secondary Education, is the largest federally funded educational program (Nelson, 2016). The middle school being studied used a school-wide approach which provided comprehensive reform strategies in an effort to increase academic achievement for low achieving students within the school (DeMonte, 2013). A well-designed and implemented school-wide plan touched all

instructional aspects of the school's operation and served all students including students who were not low-income (Nelson, 2016). Furthermore, it offered a suitable choice for high-poverty schools searching for opportunities to improve achievement for all students including low achievers.

The local middle school where the research occurred had a total student enrollment of 265 students in Grades 5-8. According to the NCES (2015), 91% of the students qualified for the free and reduced lunch program. The local middle school where the research occurred had a low annual mobility rate of approximately 20 students. These 20 students moved consistently between this middle school and another district's middle school located less than 10 miles away. This movement occurred from two to five times per school term. At a fall SLT meeting, the administration proposed that shifts in population contribute to increased absences, guidance referrals, and discipline problems at the local middle school where the research occurred, factors that could influence student achievement. According to Grigg (2012), fluctuations in student enrollment were connected with a lower growth rate in reading during the year the school change occurred, and students' mathematics achievement was greater in a year of continuous enrollment than in a year the student was new to a school.

Test scores of students scoring proficient and advanced fluctuated, reflecting instability among the mathematics achievement of middle grade students as measured by high stakes testing (South Carolina Department of Education, 2012). In 2012, there was an 8.5% decrease of students scoring proficient/advanced while the following year showed an increase of 3%. Presently, the percentage of students scoring in the 'exceeds'

category was still small. In 2017, 7.5 % of eighth grade students scored ‘exceeds’ on the mathematics portion of the SC Ready assessment. South Carolina has undergone a strategic process in the past 5 years, adopting new academic curriculum standards and selecting a rigorous state assessment intentionally developed to ensure all students were college and career ready. During the process, the state has changed its assessment three times.

For the past 4 years, an instructional coach has worked with teachers of fifth through eighth graders at the local middle school where the research occurred. The district-based instructional coach, a member of the district’s leadership team, conducted numerous classroom observations, cognitive coaching sessions, and planning sessions with teachers as well as collaborations with administrators at both the local and district levels. During these sessions, district administration collected data to determine professional development needs as well as the impact ongoing professional development had on teaching and student learning. Moreover, the results were used to enhance the school’s professional learning communities (PLCs) as well as improve instructional practices, which supported the improvement of student achievement in core content areas. If student achievement did not increase to meet Adequate Yearly Progress (AYP), the school could lose the flexibility of determining how supplemental funding could and would be used for school improvement.

Title I funding supported the implementation of instructional coaching and other similar local school improvement initiatives normally supported by general district funds in other school districts. Because of statewide budget cuts, supplemental funds were used

to support the implementation of several research-based strategies that were not being funded by district funds. Unless proven productive, instructional coaching was an initiative that would be in jeopardy of losing its funding. Evidence was needed concerning the influence instructional coaching has on student achievement. Specifically, the confirmation of the relationship between instructional coaching and mathematical teaching practices had to be documented for Title I school-wide project school.

Furthermore, when teachers reviewed the 2013–2015 standardized test scores in mathematics, declining test scores were found in the classes of specific teachers. While doing an item analysis, this data indicated that several students within the same class missed similar test items. Moreover, during administrative and instructional conferences with teachers individually and in small groups, it was determined that teachers felt the students were having considerable difficulty understanding many of the concepts being taught. After several formal observations, administrative and peer conferences, and reflective discussions, middle grade mathematics teachers decided several instructional strategies they were currently using were not appropriate for their learners. Further investigations suggested a disconnection between learner needs, instruction, and assessments.

Additionally, district benchmarks indicated a 37.7% decrease in eighth grade mathematics scores from 2012 to 2017. The specific purpose of this study was finding out whether the implementation of current instructional coaching practices at this local middle school supported the increase of high stakes test scores in mathematics needed for middle school students to meet AYP. Providing collaborative mathematics teaching and

learning environments where all students learn at rigorous and high levels was necessary to improve the school's rating and ensure sustainability and expansion of the instructional coaching initiative (Devine, Houssemand, & Meyers, 2013).

Rationale

Evidence of the Problem at the Local Level

While students lacking proficient achievement in mathematics continue to be a rising problem across the country, three factors emerged from analyzing test scores. Students scored the lowest on TE21's case benchmark in DOK 3 (strategic thinking) as opposed to DOKs 1 (recall), 2 (skill/concept) and 4 (extended thinking). This meant that the DOK 3 assessment items required students to think more critically when responding to these questions.The subgroup scoring the lowest in this area were eighth grade males with 66.7% showing a weakness. In addition, 42.9% of eigth graders showed a deficiency on the Algebra I End-Of-Course test and the Palmetto Assessment of State Standards test. Taken together, these three factors provided evidence for the need to address the problem of low student achievement regarding eighth grade students. These results, coupled with classroom administrative observations, suggested a need for a better understanding of the learning needs of these students. One strategy that the school and district have used to address this is instructional coaching, the funding for which had been under pressure, in part because there was little evidence that it is working, as indicated by declining mathematics test scores. Table I shows a fluctuation in TE21's Case Benchmarks scores over a 5-year period. There was a steady decrease in eighth grade while a drastic decrease of 59.1% occurred in seventh grade between 2014 and 2015. Although there was an

overall increase of 6.35% between 2015 and 2016, the scores began to decline once again in 2017.

Table 1

TE21's CASE Comprehensive Math Benchmark Assessments Results

Grade Level	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017
7th	60.40	62.30	3.20	21.20	17.70
8th	53.60	52.00	26.00	20.70	15.90
Total	57.00	57.15	14.60	20.95	16.80

More specifically, archival data accessed via the Internet from the SC Department of Education indicated a specific decrease in test scores occurring between the 2012-2013 and 2016-2017 school years. This data, as shown in Table 2, revealed that nearly half of all students taking the test did not meet the required standard on the mathematics portion of the Palmetto Assessment of State Standards (PASS) test. While the percentage of students scoring met showed a 15.2% difference, the percentage of students scoring exemplary was a difference of 7.2% between 2012 and 2014.

Table 2

Eighth Grade Mathematics 2011-2014 PASS Results

Number of Students Tested	PASS Administration	Met & Exemplary	Exemplary	Met	Not Met
52	Spring 2014	51.90	21.20	30.90	48.10
57	Spring 2013	59.60	14.00	45.60	40.40
57	Spring 2012	61.40	08.80	52.60	38.60
52	Spring 2011	51.90	21.20	30.80	48.10

(South Carolina District / School Report Cards. http://ed.sc.gov/data/report-cards)

Due to inconsistencies in the state adopted assessment between 2015 and 2017, there was no clear comparison or connections noted between the data collected during this time period as indicated in Tables 2-4. Because of this, the district relied heavily on TE21's case benchmark assessments to monitor student growth. The state changes in their assessments resulted in an even greater gap in student achievement.

Table 3

Eighth Grade Mathematics 2015 ACT Aspire Results

Number of Students Tested	ACT®Aspire Administration	% Exceeds & Ready	% Exceeds	% Ready	% Close	% In Need of Support
52	Spring 2015	25.50	09.10	16.40	20.00	54.50

(South Carolina District /Test Scores.https://ed.sc.gov/data/test-scores/state-assessments/act-aspire-test-scores/2015/)

Table 4

Eighth Grade Mathematics 2016-2017 SC Ready Results

Number of Students Tested	SC Ready Administration	% Exceeds & Meets	% Exceeds	% Meets	% Approaches	% Does Not Meet Expectations
53	Spring 2017	24.50	07.50	17.00	24.50	50.90
60	Spring 2016	16.70	06.70	10.00	45.00	38.30

(South Carolina District /Test Scores. https://ed.sc.gov/data/test-scores/state-assessments/sc-ready/2017/)

Notwithstanding budgetary restraints and a decline in funding to support the employment of instructional coaches of eighth-grade teachers were charged with teaching all students utilizing suitable research-based strategies to address the specific learning needs of all students. Eighth grade mathematics scores count twice in this school's rating since eighth grade students take the end-of-course test for Algebra I as well as SC Ready. These results and observations showed the need to conduct a study to determine if the implementation of the current instructional coaching initiative has a significant impact on student achievement of eighth grade middle school mathematics students at that school. More specifically, this local problem raised the question of whether the implementation of the current instructional coaching practice is adequate to support the increase of middle school math scores needed to meet state required standards.

Evidence of the Problem from the Professional Literature

Mazur and Doran (2010) indicated with the increasing demands of CCSS Initiative and its key mathematical instructional shifts accordingly, it was vital teachers

and other educational professionals have access to phased-in learning and ongoing training opportunities. Faced with a broad spectrum of ability levels, cultural differences, and linguistic issues, educating diverse learners became an obstacle for many educators over the past decade within classrooms where the research occurred (De Florio, 2016). By using solely conventional teaching methods such as lecture and textbook-driven lessons, the needs of all learners were not being adequately addressed (Ferguson, & Hirsch, 2014). Moreover, educators created student-centered classroom environments to accommodate all learners by providing adequate support and assistance needed to improve mathematics teaching and learning (Darling-Hammond, Friedlaender, & Snyder, 2014). Allocating a significant amount of classroom time to direct instruction, actively engaging students in a variety of activities, and fostering positive social interaction, educators encouraged students to become self-directed learners (Armstrong, Brown, & Thompson, 2014). As a result, students were more willing to participate; hence, problematic behaviors decreased and student learning increased (Hasbrouck, 2016).

The ESSA suggested that an alignment of curriculum, instruction, and assessment enhances school performance. More specifically, the implementation of high-quality instructional practices had an enormous effect on student achievement (Nelson, 2016). With this in mind, school districts and schools were commissioned with the responsibility of providing faculty and staff with continuous improvement opportunities that have the greatest potential for enhancing the implementation of mathematics teaching and learning. Bandeira de Mello, Bohrnstedt, Blankenship, and Sherman, (2015) indicated there was is a strong relationship between mathematics teaching and learning. Coaching,

a multifaceted form of professional development, is widely spreading across the United States in both the business and educational fields (Kennedy, 2016). This form of high quality professional development suggested the implementation of job-embedded training to assist in improving the quality of staff performance, and in turn, student learning (Kazemi, Hintz, Gibbons, Lewis, & Lomax, 2014).

The purpose of this study was to explore the perceptions and experiences of middle school math teachers about the role of the instructional coach in supporting math instruction. Results of the proposed study would assist district level administrators in determining whether using instructional coaches was a contributing factor in increasing mathematics achievement throughout the school district. More specifically, this study included an investigation of the implementation fidelity of instructional coaching from teacher perspectives.

Definition of Terms

For this study, clarification of terms assisted in understanding the influence of instructional coaching and the implementation best practices had on teacher performance as coaching assistance related to student achievement.

Adequately Yearly Progress (AYP): AYP is a federal mandate which requires public schools and school districts to monitor academic growth via standardized assessments (Ma, Shen, & Krenn, 2014).

Andragogy: Andragogy is the method, techniques, or practice used to approach the teaching of adult learners (Knowles, 1984a).

Benchmark Tests: Benchmark tests are assessments designed and administered to evaluate student mastery of specific skills over a given period of time. They are normally administered quarterly or as deemed necessary by the school and district (Herman, Osmundson, & Dietel, 2010).

Coaching: Coaching is a question-based improvement process between educators about their teaching practice (Harwell-Kee, 1999). "Effective coaching requires opportunities to build trusting relationships and adequate time to provide relevant, individualized professional learning experience" (Knight, Hock, & Knight, 2016, p. 269).

Every Student Succeeds Act (ESSA): ESSA is the United States' Public educational law which holds all school accountable for equal learning opportunities for all students. (Nelson, 2016)

High-Impact Professional Learning: Reeves (2012) suggested "high-impact professional learning has three distinct characteristics: (1) a direct connection to student achievement, (2) a balance of a rigorous observation of teacher practices and student results, and (3) a focus on professional practices and people instead of programs" (p. 21).

Instructional Coach: An instructional coach is a person who provides teachers with support regarding the implementation of research-based instructional strategies to improve teaching and learning (Knight et al., 2016).

Middle Grade School: A middle grade school may consist of grades between fifth and eighth grade (Hoy, & Hannum, 1997) and may also include fourth grade (Coladarci, & Hancock, 2002).

Palmetto Assessment of State Standards (PASS): PASS is a state-mandated test that measures student performance on South Carolina academic standards. Test results are used for school, district, and federal accountability purposes.

Professional Development: Professional development are opportunities provided to the adult learner to improve their practices. These activities provide tools that positively allow for individual growth via personalized learning, collaborative efforts, lifelong learning, book studies, and instructional coaching or mentoring (Stringer, 2013).

*Training and Education in the 21st Century's (TE21) CASE Benchmark Assessments: "*Assessments designed to gauge the academic progress of students and to provide timely feedback that can be used by teachers to guide instruction. The benchmark assessments, which are aligned to College- and Career-Ready Standards/Common Core State Standards (CCSS), provide valuable data regarding all students' knowledge of the standards." (TE21, Inc., 1999, "CASE Benchmark Assessments -Collaborative Assessment Solutions for Educators," para 1)

Significance of the Study

The District's Board of Education has as its goal increasing academic success and closing the achievement gap for all students. The causes of the achievement gap include teacher quality, teacher training, instructional strategies, and tracking (Hanushek, 2016). It may also be caused by psychological constructs where students may not be successful in school if they did not believe they can succeed academically (Williams, 2011).

The local middle school where the research occurred is in jeopardy of not making AYP because little growth was found on eighth grade math assessments. Analysis of data

from 2012 to 2017 of eighth grade math assessments and teacher observations suggested that not all student learning styles were being addressed. However, using an array of content-specific assessment tools provided teachers with additional information indicating all students have the academic ability to reach and surpass high standards. Because of budgetary restraints and a decrease in funds to support the employment of instructional coaches, there was a need for the local school to consider the use of coaching as professional development carefully. The issue became whether the use of instructional coaches had a significant influence on teacher effectiveness, student achievement, and general school improvement.

According to Learning Forward (2011, 2014), professional development could assist educators in assuming different roles as they implement new teaching strategies that would improve student achievement. Aguilar (2013) proposed providing sustainable professional experiences via instructional coaching integrating teachers' learning with their practices, providing teachers continuous feedback, and creating a community of learners. Primarily, instructional coaching was to provide quality professional development and on-the-job training tailored to the unique needs of specific teachers (Knight et al., 2016). These tools and best practices helped teachers improve instructional delivery and direct instruction, which resulted in improved student achievement (Aguilar, 2013).

Moreover, instructional coaching was proven to help schools respond to the pressures of accountability and reform (West, 2012). Effective coaching provided opportunities to build significant relationships before and during the actual coaching

process (Aguilar, 2013; Knight et al., 2016). Because adult learners may obtain their metacognitive skills from peers, teachers, and the local culture, most coaching initiatives strongly encouraged coaches to cultivate mutual bonds with teachers prior to collaborative efforts (Kenner & Weinerman, 2011; Neumerski, 2013). Similarly, adult learning theories proposed that teachers tend to be task-oriented and self-directed (Merriam & Bierema, 2013; Reece & Walker, 2016). Coaches provided collegiate learning in ways which directly related to teachers' academic careers and offered numerous opportunities for repeated and guided practice (Gulamhussein, 2013). Instructional coaching was part of a support system for professional learning which provided these ongoing opportunities for the development of teachers (Kazemi et al., 2014).

Evans (2014) and Krohn (2013) supported the effectiveness of instructional coaching initiatives for improving teachers' personalized assistance for the implementation of newly learned instructional strategies. While content-specific instructional coaching roles expanded rapidly across the United States (Saphier & West, 2010), there was limited research addressing the influence instructional coaching had on student achievement in rural middle schools in South Carolina. This study could provide pertinent information about the effective implementation of coaching, its use, and its benefits to student achievement. Additionally, this information could add to knowledge about how instructional coaching could be incorporated into South Carolina schools identified as needing improvement.

Research Questions

The purpose of the study was to explore the perceptions and experiences of middle school math teachers about the role of instructional coaches in supporting math instruction at the middle school where research occurred. The guiding research questions for this study are:

RQ1: How do middle grade mathematics teachers at the local middle school perceive the role of instructional coaches when preparing to increase mathematical student achievement?

RQ2: How do middle grade mathematics teachers describe their experiences with instructional coaches?

Review of the Literature

The purpose of the study was to explore the perceptions and experiences of middle school math teachers about the role of instructional coaches in supporting math instruction at a local middle school. The researcher sought to determine if the current implementation of the instructional coaching initiative guides teaching and learning. The literature review presented the foundation of instructional coaching as well as its influence on mathematics student achievement.

Databases searched in this literature review included ERIC, Google Scholar, and ProQuest. The key words used to locate literature were as follows*: instructional coaching*, *peer coaching*, *student achievement*, *professional instructional strategies*, *professional development*, *cognitive coaching*, *content-focused coaching*, and

professional learning communities. Over 100 articles, dissertations, and journals were reviewed, vetted, and organized based on their relevance to this study.

Conceptual Framework

The conceptual framework that guided the proposed study was derived from Knowles' andragogical assumptions as they related to adult learners' implementation of research-based practices to improve student achievement. According to Knowles (1984a, 1989), understanding the needs, motivations, and barriers to adult learning were keys to the educational field. Moreover, Knowles suggested the following four principles apply to adult learning, which allows for real life applications and problem-centered experiences. Involved adult learners allow the learner to be involved in designing and developing their learning experiences. Adult learners' experiences are connected to all learning tasks. Relevance and impact to learners' lives refer to providing real-life applications to learning.

Problem-centered refers to the opportunity to absorb information, rather than memorizing it through cooperatively solving an open-ended problem. The theory of andragogy demonstrated a need for professional development to be a personal transformation of learning where leaders are facilitators of adult learning, as opposed to evaluators and transmitters of knowledge (Cochran & Brown, 2016; Gilstrap, 2013). According to Knowles (1984a), while andragogy means the method, techniques, or practice used to approach the teaching of adult learners, pedagogy means the theory and practice of instructionally preparing children according to their needs.

Andragogy is the practice of providing professional experiences directed to the needs of adult learners (Kenner & Weinerman, 2011). Learning Forward 2015) proposed professional development for teachers is a vital determinant of effective teaching practices, supportive leadership, and improved student learning. The effective implementation of these standards further implies as the quality of professional learning increases for teachers, student achievement would improve as well (Act, 2015). Lotter et al. (2013) believed a close alignment with professional development, the curriculum, and teachers' actual work experiences extends opportunities to improve student learning.

Andragogy was initially defined as “the art and science of helping adults learn" (Knowles, 1978, p 43). The term took on a broader meaning. Currently, andragogy is an alternative to the child-focused practice of teaching and refers to educating self-directed learners of all ages (Cochran & Brown, 2016). Carruth and Field (2016) further declared person-centered approaches increase adult learning and relate to curriculum development and instructional practices, along with formative and summative student assessments.

This adult learning theory was supported in three ways, starting with the delineation of differences between andragogy and traditional learning. Known as the andragogical model, the premise was that adults engaged in professional learning for personal reasons and thrived on experiences that offer significant gain to their lives (Knowles, 1984). Instructional coaching provided professional opportunities which foster the development of self-awareness, self-motivation, and self-reflection (Eisenberg, Eisenberg, Medrich, & Charner, 2017).

This urban southern middle school, as in other states throughout the United States, adopted new standards aligned to CCSS and developed rigorous curriculum which enhanced technology integration and implementing research-based instructional practices to produce college and career-ready individuals (Heflebower & Warrick, 2013). Knowles' adult learning theory supported both personal and professional interactions between teachers and coaches in a natural setting to enhance understanding (Heineke, 2013). More specifically, because improving mathematical instruction was a national priority, schools strategically placed coaches in schools in various ways to improve instruction, influence student learning, and provide substantial support to teachers (Faulkner, 2013). The initiative of using mathematics coaches had the potential to influence student achievement, professional learning, and school culture (Desimone & Pak, 2017).

Educators striving to meet the needs of all children realized that not all children learn in the same way. Maslow's (1943) theory of the hierarchy of needs implied all people were motivated differently. Maslow (1970a, 1970b) proposed children learned best when basic human needs are fulfilled, achieving more when they were recognized and respected in a supportive climate (Maslow, 1970a, 1970b). Furthermore, Knowles (1978) proposed that adult learning environments are built upon mutual respect and trust. Although adults are intrinsically motivated, Maslow's (1968) theory similarly apply to adult learning since adult basic needs must be satisfied prior to them fulfilling their learning needs. Cochran and Brown (2016) indicated Malcolm Knowles (1984) believed

adult learners should evaluate their learning needs, plan and implement learning activities, and evaluate those experiences.

One of the greatest challenges for teachers became how to unravel a student's environment and apply the knowledge gained to provide a stimulating learning culture (Hightower et al., 2011). In his hierarchy of needs, Maslow (1943) confirmed the gradual escalation of workers' drives and motivations is affected by the situation and general culture. A major point of Maslow's theory was that not all people were motivated by the same things, and the same individual was not always motivated by the same thing since their needs changed over time (Huitt, 2007). Maslow (1968) suggested children were ready to learn and achievement increased when children were recognized, felt safe, felt respected, and their physical needs were met. A positive atmosphere or climate was an effective attribute that could increase student learning (Dean, Stone, Hubbell, & Pitler, 2012). There was a sense of belonging and a commitment to effect social interaction among students. Such an environment promoted a nurturing culture, which included instructional goals, priorities, assessment procedures, and accountability (Ferguson & Hirsch, 2014). An unintended outcome for staff would be the sharing and developing of new ideas while reflecting on their practices (Stewart, 2014).

Knight et al. (2016) found that instructional coaching created an environment where teachers can feel safe, respected, and successful. As teachers worked in small groups or one-on-one with an instructional coach, they had opportunities to apply and practice new learning and new strategies while receiving support and feedback (Hughes, 2015). Likewise, the interactions with the instructional coach created a positive

atmosphere with the teacher that increased teachers' learning and lesson delivery, which led to increased student learning (Bayar, 2014; Stewart, 2014).

Student Achievement and Professional Development

When students leave elementary school for middle school, they face numerous challenges, which could affect their academic success at the middle school level (Im, Hughes, Kwok, Puckett, & Cerda, 2013). The 2011 International Mathematics and Science Study (TIMSS) indicated that students lacking proficient achievement in mathematics appeared to be a rising problem for middle school students across the country (Mullis, Martin, Foy, & Arora, 2012; Provasnik et al., 2012). The ESSA Act(2015) addressed issues government-funded schools encounter in the area of student achievement, and the roles teachers played in closing the achievement gap (Nelson, 2016). This legislation required that schools shift focus from guaranteeing that all instructional environments had highly qualified teachers to ensuring all teachers understood and practiced mathematics teaching and learning for the 21st century learner (Hope, 2017).

Hernandez (2013) reflected the notion of implementing content-specific information through the use of literacy-based instruction coupled with providing students with numerous opportunities to experience success that would lead to achievement gains on state tests. Therefore, today's educators are obligated to teach content via literacy-based instruction as well as motivate students to concentrate on learning in an environment dominated by external influences (Daggett, 2014). Recent reports proposed that the improvement of mathematics teaching and learning could be improved by the use

of school-based instructional coaches in content-specific areas (National Center for Education Evaluation, 2013).

Schools must offer all students a variety of pathways and alternative learning opportunities for all students to receive rich, integrated learning experiences (Sheldon, Epstein, & Galindo, 2010). Differentiated instruction, activities, and assessments address diverse skill levels and learning styles of all children (Robinson & Maldonado, 2014). Hunter (2004) further indicated that learning is built on quality instruction and active engagement. To be an effective school, activities must be implemented that cultivate self-motivated, self-directed learners (Collet, 2012). Rigorous instruction should encourage students to explore their world and develop multiple solutions for solving complex problems (Common Core State Standards Initiative, 2010; Schneider, 2015). Likewise, inquiry-based lessons should support student discovery of learning which increases their involvement in their own learning (Darling-Hammond et al., 2014). Although success and excellence inevitably lie in the hands of the student, being committed to making sure equal opportunities are provided to every child to succeed, and the implementation of best practices are the responsibilities of all stakeholders (Tomlinson, 2014).

Instructional coaching was an initiative utilized to support the implementation of best practices at state and local levels in numerous states such as Georgia, Florida, California, North Carolina, and South Carolina (Westmoreland, 2015; Wheeler, 2014). Innumerable studies shared similar results that connected positive implications of instructional coaching and student achievement levels. Teachers who were coached believed they could implement new instructional strategies and mandated district

initiatives with fidelity (Collet, 2012). It is believed instructional coaching had a positive correlation with student achievement. Aguilar (2013) examined the connection between time spent on training educators in their working environments for effectiveness in the implementation of content instruction and student achievement. This study of 360 early elementary school students and twelve teachers in Central Florida found specific outcomes in favor of instructional coaching and its effect on student achievement. Likewise, Wheeler (2014) determined the implementation of instructional coaching resulted in significant gains in language arts achievement utilizing a quasi-experimental interrupted time series research. In a qualitative, transcendental phenomenology study, Westmoreland's (2015) study established that 13 middle school teachers in Northwest Georgia believed that utilizing instructional coaching as an ongoing, on-site professional development assisted them in providing the most effective instruction possible. These studies collectively proposed that instructional coaching can be a valuable method in supporting teaching and learning.

Instructional Coaching as a Form of Professional Development

Emphasizing the need to constantly stay aware of school-related issues, Desimone, Smith, and Phillips (2013) urged educators to focus on finding appropriate teaching techniques. Educators must remain effective and relevant in the classroom by continuing to educate themselves on current best practices via content-specific information, courses, and collaborating with associates (Kunter et al., 2013). The knowledge gained from these interactions will offer increased professional training while enhancing skills and techniques, which ultimately benefit students (Partee, 2014).

Simultaneously, these same educators could be a vessel from which peers and colleagues can consult concerning the implementation of instructional strategies (Kretlow, Cooke, & Wood, 2012). Moreover, this ongoing individualized professional development provided opportunities for teachers to acquire additional research-based strategies to reach, motivate, and deliver appropriate instruction to students at a critical point of learning and accountability (Posamentier, Germain-Williams, & Jaye, 2013; Sheldon et al., 2010).

Although it does not provide overnight changes, professional development is a vital component to school reform. Professional development should not be implemented without having the follow-through to ensure effective implementation (Teemant, 2014). When implemented correctly, professional development could help improve student achievement (Aguilar, 2013). Moreover, because classrooms are the center of learning, professional development should focus on the implementation of best practices in the classroom (Tomlinson, 2014). Tomlinson (2014) suggested activities support best practices in the classroom. However, some professional development activities fail because they are not relevant to current school and classroom situations and have little or no impact on changing teaching practices (Lee, Nugent, Kunz, Houston, & DeChenne, 2014).

Collaborative efforts between instructional coaches and teachers supported the effective implementation of research-based instructional practices into their teaching that helped students obtain mastery of concepts taught (Lee et al., 2014). Instructional coaches supported teachers as they build their teaching skills and assisted teachers as they applied new knowledge (Kretlow et al., 2012). Instructional coaches were used to help

reinforce the use of research-based strategies, increase teacher effectiveness, solidify the concept of professional learning communities, and facilitate professional development (Desimone & Pak, 2017).

Aguilar (2013) suggested instructional coaching, a form of specialized teacher training, integrates teacher learning with practices that provide ongoing feedback and collegial support. The fundamental premise of instructional coaching was to provide quality on-the-job professional development training geared to equip teachers with the necessary best practices to support and improve instructional delivery and student achievement (Knight et al., 2016).

Effective instructional coaching provided opportunities to build significant relationships before and during the actual coaching process (Knight et al., 2016). According to Marzano and Simms (2013), instructional coaching directs teachers toward best practices, shows what good teaching looks like, and helps teachers maintain their best performance. Coaching involves teacher training, classroom observations, modeling, and collaboration with teachers (Allen, Manning, Francis, & Gentry, 2011). Furthermore, proven as a school initiative to respond to accountability and reform, instructional coaching was being employed throughout many districts (Lomos, Roelande, & Bosker, 2011).

Knight (2012) further suggested the critical components of instructional coaching include (a) focus on professional practice, (b) job-embedded professional learning experiences, (c) intensive and ongoing support, (d) dialogical interaction, (e) non-evaluative support, (f) confidentiality, and (g) respectful communication. Moreover,

Garbacz, Lannie, Jeffrey-Pearsall, and Truckenmiller (2015) proposed instructional coaches provide teachers support of these key components: development of lesson plans, students' assessments, and benchmark testing. This collaboration was done through pre- and post- instructional conferences held by the coach with the teacher (Sheldon et al., 2010).

Benefits of Instructional Coaching as Professional Development

With the growing demand for accountability by different state and federal government initiatives, several researchers suggested instructional coaching proves to be a beneficial form of teacher professional development (Knight et al., 2016). Instructional coaches provided instructional feedback and opportunities for teachers to be reflective on their practice (Rosenshine, 2012; Stewart, 2014). Additionally, instructional coaching was an appropriate and effective approach for promoting reform-oriented teaching. Teachers were afforded opportunities to partner with instructional coaches in efforts to help incorporate research-based instructional strategies, techniques, and practices that positively impact student learning (Knight et al., 2016). Consequently, Knight and Cornett (2008) examined in an experimental study the likelihood teachers will implement new ideas based on whether they receive instructional coaching.

Aguilar (2013) indicated instructional coaching provide opportunities for collaborative conversations. Desimone and Pak (2017) further proposed pedagogical content coaches assisted teachers in improving instruction through intensive individualized professional development. Teachers also benefited from content coaches who provide support through pre-classroom observation conferences, post-classroom

observations conferences, lesson planning sessions, examinations of student work, content trainings and formative assessment evaluations (Homan, 2014; Stewart, 2012).

Moreover, instructional coaching supported schools in responding to accountability and reform requirements via collaborative efforts. Effective coaching provided opportunities to build significant relationships prior to and during the actual coaching process (Killion, 2013; Knight et al., 2016). Knowles' adult learning theory (1984a) and Fullan's change theory (2006, 2010) strongly encouraged coaches to develop relationships with teachers prior to collaboration.

Effective collaborative conversations between teachers and instructional coaches suggested knowing how adult learners think and acquire knowledge were vital components in providing professional learning experiences for teachers (Rosser-Mims, Dawson, & Saltiel, 2017). Knowles, Holton, and Swanson (2011, 2015) proposed six assumptions that helped improve the performance of adults and promote their experiential learning while enhancing an organization's ability to adapt to change. The six assumptions are self-concept, experience, readiness to learn, orientation to learning, motivation to learn, and relevance. Collaborative sessions provided by instructional coaches afforded teachers opportunities to share experiences with each other. These sessions could be done through interactive discussions, group projects, reflective activities, and case studies. (Blazer & Kraft, 2015; Brookfield, 2017). These collaborative sessions afforded various opportunities to improve student achievement.

Wang, Lin, and Spalding (2008) proposed adequate questioning regarding the effectiveness of a fully implemented instructional coaching initiative will not only

enhance teacher efficacy but also assist in increasing student achievement. Most importantly, Taylor (2008) advocated providing teachers with instructional support via observation and feedback, reflection, and discussion, and viable opportunity for practice. Instructional coaching could be a catalyst for positive instructional reform by partnering instructional coaches and teachers in a united effort to increase student achievement (Kennedy, 2016).

Quality reform cannot be facilitated nor sustained without the sharing of collective wisdom and dedication (Neumerski, 2013). Killion (2013) suggested coaches need to spend time facilitating the analysis of student data to guide instruction. Teachers refine and analyze their skills to meet the academic needs of their students (Jacob, Hill, & Corey, 2017). They gain knowledge of what students know as compare to what they need to know to meet academic challenges and standards. Data-informed decisions are made to promote student academic needs. (Huffman, Hipp, Pankake, & Moller, 2014).

Knight et al. (2016) proposed teachers who are supported by instructional coaches were more likely to implement effective instructional strategies as well as become reflective thinkers who contribute to high performing schools. The cognitive coaching strategy encouraged reflective thinking and self-directed learning (Marzano & Simms, 2013; Sirmaci & Ceylan, 2014). More specifically, instructional coaches provided planned and ongoing individualized professional support and training, guiding and assisting teachers to improve in their professional learning to build their own capacity and facilitate and promote the use of research-based practices (Spelman, Bell, Thomas, & Briody, 2016; Webb et al., 2014).

Instructional coaching provided various ways of affording professional development opportunities for teachers (Oakley, & Reagan, 2014). These methods include workshops, collaboration, feedback, reflection, and modeling (Knight et al., 2016). In addition, instructional coaches enhance teacher competencies by modeling research-based best practices, fostering teacher collaboration, conducting classroom observations, and analyzing student data (Knight, 2011a). Professional development initiatives, such as coaching, help teachers learn new roles and teach strategies that will improve student achievement (Bayar, 2014). This evidence correlates with research conducted by Spelman et al. (2016) which found that the professional development provided by instructional coaches enabled teachers to incorporate new strategies into the classroom to meet student needs.

Best Practices for Teaching Middle School Mathematics

Researchers in an unwavering effort to close this research-to-practice gap have been trying to identify effective strategies supporting the transformation of practices which promote mathematics reform (Luebeck, & Burroughs, 2017). Mathematics is sometimes identified as the scariest subjects for middle school students. Getting rid of this fear and teaching diverse students tend to be a somewhat challenging task for the teachers (Ottmar, Rimm-Kaufman, Larsen, & Berry, 2015). Apart from teaching concepts, which are applicable in real life, teachers must ensure all students are afforded equal opportunities to experience success (Burstein, 2014).

Hasbrouck (2016) advocated employing content-specific coaches to focus on the mathematical skills and mathematical knowledge used in teaching because it helps

facilitate learning and improves student achievement. Furthermore, mathematics coaches collaboratively work with teachers as they embrace their content and pedagogical knowledge to nurture student thinking for the improvement of student achievement (Yopp et al., 2011). In a case study, Dobbins, Gagnon, and Ulrich (2014) scrutinized instructional coaching as a form of professional development for teachers. Campbell and Griffin (2017) further suggested mathematics coaches work collaboratively with teachers to increase practice and content knowledge.

The Importance of Teachers' Perceptions

According to Lochmiller *perceptions* refer to the "views or opinions held by an individual resulting from experience and external factors acting on the individual" (2016, p.11). Hagger, Mcintyre, and Wilkin (2013) defined *perceptions* as the interconnection between attitudes and beliefs derived based on individual experiences and interpretations. Researchers unanimously agree that teachers' perceptions of professional development have a remarkable effect on student achievement. Neumerski (2013) suggested teachers perceive professional development as opportunities which influence their knowledge of content, pedagogy, and curriculum. According to Polly, Algozzine, Martin, and Mraz (2015), teachers believed if the professional development was purposeful and focused it helped them grow professionally. Likewise, Doby-Holmes (2011) indicated principals, instructional coaches, and teachers perceived instructional coaching had a positive but indirect effect on student achievement. And more specifically, instructional coaching is a means to helped teachers grow professionally (Contreras, 2011; Knight, 2011).

Implications

This study had social change implications for the local school and school districts. Implication for social change occurs when positive, cohesive relationships are fostered in the school environment. Likewise, the review of the literature showed that instructional coaching fosters teacher collaboration and support in increasing emotional resiliency (Fullan, 2010). The results of this study suggested how instructional coaching is related to student achievement. These results implied that schools and school districts need to provide effective instructional coaching as support for teaching. Moreover, the implementation of best practice strategies reinforced by instructional coaches may contribute to school improvement at the local, state, and national levels. Teachers' perspectives suggested effective instructional coaching is one way to potentially improve student achievement in mathematics. This may lead to a better understanding of how to improve a school's AYP. Finally, the data from the study ultimately led to my developing a project in the form of a professional development program.

Summary

According to the ESSA (Act, 2015) highly effective teachers in every subject and discipline are required to implement instructional strategies, which promote ongoing student achievement and growth as measured by standardized test objectives for all subgroups of students. Maslow's hierarchy of needs theory (1943) posited providing adult learners with the appropriate environment would assist in improving student achievement. Moreover, Knowles (1984a) indicates adults are self-directed learners who consistently evaluate their own learning. Adult learners are individuals have a desire and

inner motivation to accomplish their goals. Section 1 included a detailed discussion of the recent literature about the relationship between student achievement and professional development; professional development; benefits of instructional coaching as professional development; and instructional coaching and mathematics achievement. Section 2 will include the research design, as well as a description and justification for the design. The setting and sample will be presented, as well as the data collection tools, and research questions. Also, a discussion of the protections for human subject participants will be addressed. I will also be presenting the data from the study and given an analysis of it.

Section 2: The Methodology

Introduction

In this intrinsic case study, I explored the perceptions and experiences of middle school math teachers about the role of the instructional coach in supporting math instruction at the local setting. Specifically, the researcher proposed in this intrinsic qualitative study to determine how middle grade mathematics teachers perceived the nature of the relationship between instructional coaching and mathematical teaching practices. The guiding research questions for this study were:

RQ1: How do middle grade mathematics teachers at the local middle school perceive the role of instructional coaches when preparing to increase mathematical student achievement?

RQ2: How do middle grade mathematics teachers at the local middle school describe their experiences with instructional coaches?

In this section, the research design and approach, participants, data collection, data analysis, and limitations will be presented.

Research Design and Approach

Qualitative research designs have a unique set of criteria which allow the researcher to explore and describe an issue or phenomenon in the participants' natural environment using a variety of data (Creswell, 2014). Furthermore, according to Creswell (2012), qualitative research is employed when a specific educational problem needs to be improved or solved. Creswell (2010) stated, "Educators aim to improve the practice of education by studying issues or problems they face. Educators reflected on these

problems, collect and analyze data, and implement changes based on their findings" (p. 577). Qualitative research provides a means for educators to improve their practices as they participate in the research (Marshall & Rossman, 2014). Data were gathered to address improvements in the educational setting, teaching practices, or student learning. In this qualitative research study, the researcher addressed middle school mathematics teachers' perspectives and experiences with instructional coaches in their math classes (Creswell, 2014).

Creswell (2014) indicated the five most frequently used approaches to presenting a qualitative study are narrative inquiry, ethnography, grounded theory, phenomenology, and case study. Specifically for this study, a narrative inquiry was not appropriate because it is an investigation of a story. Ethnography focuses on understanding a cultural group and making an interpretation of the values, behaviors, and beliefs of that culture (Creswell, 2009). Ethnography was not used because it does not address the how and why of the implementation of instructional coaching. Additionally, a grounded theory was not employed because the purpose of this study is to explore teachers' perspectives of instructional coaching instead of collecting data to discover a theory. A phenomenology study seeks to understand the perspectives, attitudes, and beliefs of a general group of people (Creswell, 2012). A phenomenological approach was not used because it does not provide the in-depth, detailed information needed concerning the implementation of instructional coaching in this district.

The researcher chose a qualitative case study design. Yin (2013) indicated three types of case study designs: explanatory, exploratory, and descriptive. The premise of an

explanatory case study is to take a close examination of data and explain real life phenomena, unlike a descriptive case study which seeks to answer the questions who, what, where, when, how and how many (Yin, 2013). Fraenkel, Wallen, and Hyun (2015) specified that case studies might be either single case (intrinsic and instrumental) or multiple cases, which combine multiple events in one study. More specifically, Yin (2013) suggested an intrinsic case study explores a particular case for its own sake. There is no expectation that the results have implications for other case studies. In contrast, instrumental case studies provide a general understanding of a phenomenon. The intrinsic case study approach was valuable because allowed the researcher to get a better understanding of the instructional coaching program as well as to develop interventions utilizing its flexibility and rigor.

This researcher employed a qualitative intrinsic case study design. Stake (2005) suggested the intrinsic case study is a process and a product of inquiry. Intrinsic case studies occur when the researchers are more interested in the individual case rather than the type of case. The purpose of this study was not theory building, but because of an intrinsic interest of the case being studied (Stake, 2005). Fraenkel et al. (2015) indicated this design allows the acquisition for inclusive considerations to gain a deeper understanding of a particular case or for a primary interest. This intrinsic case study was selected because it allows the participants to give in-depth discussions providing answers to open-ended questions generating specific themes. Additionally, Yin (2013) proposed utilizing an intrinsic design allows opportunities for the researcher and participants to generate questions while gathering specific data. Moreover, this intrinsic case design was

used to determine to what extent the teachers perceive instructional coaching as a means to improve their professional performance while simultaneously improving student learning at this local setting.

Participants

The setting of this intrinsic qualitative case study was a public school district with approximately 808 students. This district has three campuses where the middle grade students are housed in two locations: Unified Elementary School (pseudonym) and the local middle school where the research occurred. Both schools are located on the same urban campus. In Unified Elementary School, Grades 5 and 6 students were housed, while the middle school housed Grades 7 and 8 on a campus that includes seventh through twelfth graders. Fewer than 60 teachers were employed in the district with 17 employed in the middle grades. Ten of these middles grade teachers taught mathematics and had instructional coaches. When conducting this intrinsic case study, five participants were interviewed to identify themes and make an analysis of the themes. Moreover, Malterud, Siersma, and Guassora (2016) suggested using a very limited number of participants when conducting interviews, which provides opportunities to collect extensive amounts of relevant information. The middle grade math teachers who were coached define the population of this study. Because a specifically defined population was used in this research, the sample is considered purposeful.

The criteria used to purposefully select participants in this study were that they had to be a certified math teacher and teaching middle grades students and participate in instructional coaching sessions.

Justification for Number of Participants

The participants for this research consisted of five middle grade mathematics teachers. Maxwell (2015) implied qualitative researchers in their analyses sometimes depend on a small number of participants to make sure they preserve the individuality of each. Because instructional coaches are not in an administrative or supervisory position, Neumerski (2013) stated instructional coaches could provide and support professional development which fosters collaboration among teachers and contributes to student learning. Each of the teachers received extensive support from an instructional coach.

Gaining Access to Participants

Approval to conduct the research was obtained from the district's superintendent and the school's principal prior to the submission of the proposal to Walden University's Institutional Review Board (IRB). To gain access to the site and participants, a letter was submitted to the district superintendent and school principal to request permission to conduct the research project and interview teachers on site. This letter includes the purpose of the research project, time needed to conduct the research project, time required of participants, and ways data results will be reported and used. When requested, I met with them to discuss the proposed research project.

Method for Establishing Researcher-Participant Relationship

After permission was received from the superintendent and the principal, I submitted all required forms to Walden's IRB for approval. Upon approval from Walden's IRB (04-03-18-0286993), I implemented the research requirements with participants in the research project. To establish a researcher-participant relationship, a letter of

invitation, which was emailed to participants via district listserve, included the purpose of the research project, the time needed to conduct the research project, the time required of participants, and the way the data results will be used. This letter was accompanied by a copy of the Informed Consent Agreement. Participation was voluntary, and those who volunteer to participate were asked to confirm consent to participate via email. Each participant was informed of the complete research process. At the completion of the information process, participants were asked to sign an informed consent form signifying his or her understanding of the process. Every effort was taken to protect all participants, and member checking was employed to enhance trustworthiness. Interviews and informed consent were appropriately documented.

Protection of Participants' Rights

I attempted to maintain participants' rights to privacy and confidentiality. I obtained the proper administrative approval prior to beginning the process with participants. Informed consent was obtained from participants along with their consent to audiotape their personal interviews. Participants were reminded they were at liberty to refuse participation at any time. Teacher participation was voluntary. Participants were provided with a copy of their informed consent forms, which they signed and returned to me in person. These forms included a brief description of the research procedures. Participants were informed that I would use pseudonyms to protect their identities when reporting the finding within the project. I acknowledged the sensitivity and ethical issues of interviews. Information collected was kept confidential by storing this information in a secure central location.

Data Collection

When conducting this case study, teacher interviews were utilized as the data source (Creswell, 2014). Moreover, Merriam and Tisdell (2015) proposed interviewing is a common data collection method in the educational arena. Although this data collection method was considered time-consuming, the data were required to respond to the research questions fully. A predesigned qualitative interview protocol (Doby-Holmes, 2011) consisted of open-ended questions specific to the perceptions and experiences of teachers about coaching (Appendix C). These questions were fully explored in the context of the proposed study, providing insight of participants' points of views, feelings, and knowledge (Seidman, 2013; Turner, 2010). A predesigned interview protocol was used because it addressed the purpose of the overall study (Doby-Holmes, 2011).

Data for this research study was collected with individual face-to-face interviews with the participants. Each interview lasted approximately 30-45 minutes (See Appendix B). According to Silverman (2015), the interviewer can encourage particular concerns via interviews that may lead to focused and constructive recommendations. Furthermore, Creswell (2014) indicated interviews would provide opportunities for the researcher to gather detailed information from the participants. According to Jacob et al. (2017) data collected via interviews assist in making connections between teachers' perceptions of professional development opportunities and the implementation of best practices. Because interviews were the only form of data collection, I did not have the opportunity to triangulate data.

In this study, I sought detailed information concerning the current implementation of instructional coaching. Permission has been granted to use a research-based protocol with interview questions that will include the participant's number, a header with the purpose of the research project, the research questions, and a closing comment section (See Appendix B). The researcher asked interview questions to obtain the information from teachers needed to respond to the study research questions. The teacher interviews took place after school hours in the conference room. The interviews were recorded using a digital voice recorder, and a second voice recorder used as a backup in case of a malfunction. Interviews were transcribed verbatim, and content analyzed to obtain answers to each of the research questions. I maintained field notes during the study to assist in gathering a better understanding of the educator's viewpoints. A journal was used throughout the study to monitor and identify any biases. In an effort to reduce bias or coercion, all participants were asked to review their interview transcripts to ensure their perceptions were accuracy conveyed and a peer auditor was used.

The Researcher's Role

Merriam and Tisdell (2015) acknowledged qualitative researchers as instrumental agents in collecting data. Furthermore, researchers are accountable for ensuring ethical issues are addressed appropriately. My role as the researcher in this study was to gain unbiased evidence via semistructured interviews as to whether or not teachers perceive their experiences with instructional coaching as a means to improve mathematics instruction. Although information on this topic was gained from the literature review, I did not impose my opinion on those who participate in this study. Moreover, during the

interviews, I utilized probing questions and minimum facial expressions and gestures. Costa and Garmston (2002) suggested maintaining direct eye contact, a relaxed tone and using very few nonverbal cues helps keep the conversation focused.

Although there was a pre-established working relationship, I do not have direct supervision over any participants involved in this study, thus avoiding any conflict of interest concerns. I am the Director for Gifted and Talented and District Testing Coordinator. During the collection phase of this qualitative study, I collected data via face-to-face interviews about the educators' perspectives of instructional coaching.

Data Analysis

Creswell (2014) described data analysis in qualitative research as a system of organizing, transcribing, examining, describing, coding and tabulating evidence, which is then presented in a meaningful format. This method included interviews where the researcher documents participants' experiences along with the use of direct quotes which contribute to the descriptive details that are aligned to each research question (Bernard, Wutich, & Ryan, 2016). The data were reviewed and organized into categories or themes that cut across all of the data sources (Hancock & Algozzine, 2016). After pattern matching, content analysis, and finding complementary cases, this information was written in a narrative form providing a deeper understanding of the research problem (Yin, 2013). Manual content analysis of the data was done by utilizing the constant comparison data analysis method (Miles, Huberman, & Saldana, 2014). This method was used to make comparisons within a single interview as well as comparisons between the participants' interviews.

A thematic coding process was implemented. The transcribed data was explored and coded. I read the data sentence-by-sentence and code keywords or phrases, ideas, and emerging themes (Creswell, 2014). I looked for overlapping among codes and decide if some of the code words/phrases can be combined so that the number of different codes is reduced to five to seven codes. The codes derived from reading the transcribed data was used to develop themes.

Themes are the patterns found within the collected data. The themes were important to the description of each response to each interview question and were, therefore, associated with specific research questions (Maxwell, 2015). After coding transcribed data based on participant's responses to each RQ, the researcher created and established patterns throughout the transcript which yielded five themes. These five evolving themes were about supportive instructional observations, collaboration with colleagues and the instructional coach, and analysis of instructional data to support student achievement. Findings were reported in narrative form. A narrative discussion was given a detailed summary of the findings from a manual content analysis by themes. The narrative included quotes from the interview data (Miles et al., 2014).

Creswell (2014) indicated reliability is an examination of the stability or consistency of responses while validity is whether or not you get an accurate depiction of the process or behavior being examined. Qualitative researchers check for accuracy, credibility, and transferability by employing a combination of multiple validity strategies, i.e., triangulation, member checking, and use a peer auditor (Creswell, 2014). The validity and accuracy of the research project will be checked by using member checking

and a peer auditor. Member checking was employed by providing each participant an opportunity to review and discuss the findings with the researcher (Yin, 2013). I provided each participant with a transcript of their interview to check the content of his or her own transcripts for accuracy, and I followed up with them to verify their concurrence with the corrected transcript. During an interview, the researcher restated or summarized information. This information provided to the participants via e-mail. Member checking permitted contributors to significantly analyze the findings and touch upon them (Smith, M, 2017). The members both verified that the summaries reflect their perspectives, feelings, and stories, or that they no longer replicate those stories. Then participants were e-mailed the needed clarification to the researcher.

Additionally, a peer audit was conducted by an educator, not affiliated with the local school or school district, who looked over the coded data and identify any themes that I did not note (Anney, 2014). The peer auditor checked the interview data with the researcher's findings to answer questions such as:

Are the inferences logical?

Are the themes appropriate?

Are the findings grounded in research?

What is the degree of researcher bias?

What strategies were used for increasing credibility?

Finally, the results were compiled and described. Then, the necessary revisions to the themes and patterns were made in order to develop a final conceptualization that addresses each research question (Saldaña, 2015).

Dealing with Discrepant Cases

According to Merriam and Tisdell (2015), the following procedures will be employed to deal with discrepancies. In addressing credibility, researchers attempted to demonstrate an accurate account of the teachers' perspectives concerning instructional coaching by audio taping the interviews, using a peer audit, and follow up member checking (Creswell, 2012). To allow transferability, the researcher presented data in a matrix to assist in identifying discrepancy issues (Miles et al., 2014). Additionally, Creswell (2014) recommended the researcher reevaluated data to validate patterns and themes. The researcher carefully examined all data collected and identified themes and patterns by coding and categorizing the interviews.

Data Analysis Results

Data were collected via face-to-face interviews to address the research questions and in accordance with the intrinsic qualitative research design. The interviews were used to gather detailed information on the insights of each individual participant that were relevant to the purpose of this study. This section was arranged by research questions intertwining themes. For this intrinsic qualitative case study, I conducted five one-on-one interviews. Member checking was utilized to clarify and validate the perceptions of each participant. This intrinsic qualitative case study occurred in a small public-school district with approximately 808 students. This case focused on middle grades teachers (grades 5-8) who are housed in two locations: Unified Elementary School (pseudonym) and the local middle school where the research occurred. The data obtained from the interviews yielded the following themes and their relationships to the research questions: a)

Collaboration, b) Observations with Feedback Sessions, and c) Data Analysis addressed RQ1 while d) Professional Development and e) Student Achievement addressed RQ2 (see Table 5). The findings were then organized according to the research questions utilizing direct quotes from the interviews in subsequent sections.

Table 5

Perceptions of Math Teachers about Instructional Coaching - Relationships

Research Questions	Themes
RQ1. How do middle grades mathematics teachers perceive the role of instructional coaches when preparing to increase mathematical student achievement?	a) Collaboration b) Observations with Feedback Sessions c) Data Analysis
RQ2. How do middle grades mathematics teachers describe their experiences with instructional coaches when?	d) Professional Development e) Student Achievement

The guided research question focused on how teachers of middle grades mathematics perceived instructional coaching pertaining to its influence on teaching and learning. An analysis of the data indicated that all participants believed they should be afforded more opportunities to work one-on-one with the math instructional coach. Furthermore, all participants agreed that having observations without constructive feedback sessions as they relate to the implementation of best practices, mathematics standards, concepts, and pedagogy were not beneficial. Participants correspondingly shared similar perceptions that the math instructional coach assisted them with the data analysis focused on improving student achievement. All participants also agreed that having collaborative sessions helped them in having a clearer understanding in fully developing lessons to address all Depth of Knowledge levels which are critical to preparing math students to become both career and college ready individuals. Likewise, all participants agreed that although the instructional coach's roles and responsibilities were not clearly identified, they appreciated the personal and professional influence coaching had on them.

RQ1

RQ1: How do middle grade mathematics teachers at the local middle school perceive the role of instructional coaches when preparing to increase mathematical student achievement?

Theme 1: Collaboration. Theme 1 showed that middle grades math teachers appreciated the opportunities to collaborate although a minimal amount of time was allotted. According to the majority of the participants, instructional coaching is a

collaborative effort in providing support for teaching and learning in the math classroom. Participant 1 asserted:

> The math instructional coach works with teachers to improve mathematics achievement, manage and control curriculum and instructional materials, manage and regulate professional development, maintain and share best-practice research, and analyze and interpret data such as TE21 Case Benchmark assessments to inform instruction.

As a result of the collaborative efforts between the instructional coach and the teachers, Participants 1 and 5 expressed how valuable the instructional coach was in assisting them in their adjustments to a new school and culture. Furthermore, Participant 1 stated, "Because of the help and guidance of the instructional coach, I was able to learn school policies and procedures that were new to me, apply basic classroom management and facilitate differentiated learning for a variety of students' learning styles." Forte and Flores (2014) suggested collaborative learning and professional learning communities are critical components of the continuous improvement of teaching and learning.

Battersby and Verdi (2015) suggested substantial professional growth can also be maintained through collaboration with peers. Participants 2, 3, and 5 shared feelings that the after-school professional learning sessions assisted in expanding their knowledge of the standards, content, and pedagogy. Moreover, Participant 2 emphasized how beneficial the math instructional coach was in providing guidance in selecting the appropriate lessons and strategies to utilize in moving students from a DOK 1 level to a DOK 3 level. Participant 4, during the latter portion of the interview, added

> The instructional coach facilitates collaborative sessions focused on student learning and identified areas of need. Although these sessions are limited, they allowed me to share experiences with implementing and exploring research-based strategies with the instructional coach and other math teachers. I also expanded on areas of concerns and needs as a result of these sessions.

Sales, Moliner, and Francisco Amat (2017) asserted implementing instructional initiatives can positively affect the school environment when administrators, instructional coaches and teachers worked together to improve teaching and learning. Participant 4 indicated the following:

> Instructional coaches are supposed to serve as the bridge between administration and the teacher as well as a bridge between content research and classroom practice. They collaborate with teachers and assist them in the implementation process of best practices. It is important for administrators to work collaboratively with the instructional coach in scheduling time for professional development and feedback sessions.

Selvaggi (2016) indicated principals who actively support the coaching process in providing a specified time for collaboration and ensuring all stakeholders are aware of the roles and responsibilities of the coach. Participant 3 added, "Because there is not a full-time coach assigned to my school, there is limited time for collaboration and observations." However, Participant 2 declared "The instructional coach, through collaboration, helped in developing a positive and supportive relationship with administrators, teachers, and staff.

Theme 2: Observations. Another theme that emerged during the analysis of the interview data was instructional observations without feedback sessions. All participants referenced the need for effective, constructive feedback sessions following observations. Four out of five (80%) participants believed they were not afforded an adequate amount of opportunities to engage in reflective feedback sessions after their observations. Participant 3 specified, "Observations were conducted by the instructional coach, but no feedback was provided." Additionally, during Participant 4's interview, this statement was shared "The instructional coach comes in once and awhile to conduct observations. However, there is no immediate feedback or follow conversation concerning the observation". Tanner, Quintis, and Gamboa (2017) maintained providing extensive opportunities for reflective feedback sessions is one of the most significant factors for creating changes in teachers' practices.

Despite the lack of reflective feedback sessions, Participants 2, 3, and 5 believed if the math instructional coach and the teachers work together more frequently planning, co-teaching, and observing lessons with reflective feedback sessions, an increase would be seen in math test scores. Participant 1 expressed "As a teacher, implementing new strategies would be much easier if an extra set of eyes and ears were available to bounce ideas around with. It helps me to be an effective math teacher and support the individual needs of my students". Participant 4 conveyed similar thoughts, "Observations without feedback doesn't really support me as a teacher. Being able to collaborate with my peers provides me with opportunities to rethink and confirm the use of different strategies." Desimone and Pak (2017) supported the implementation of reflective practice and its

potentially positive influence on improving teacher efficacy and student performance. The interpretation of statements from the interviews indicates that Participants 1, 2, and 5 valued the observations with feedback sessions in supporting them as teachers of mathematics.

Theme 3: Data analysis. Data analysis sessions assist educators in utilizing data to identify trends and create data-driven goals in order to reflect and revise teaching practices for the purpose of improved student learning (DiPaola & Wagner, 2018; Snodgrass Rangel, Bell, & Monroy, 2017). Participants 1, 3, and 5 indicated the instructional coach supported them in their analysis of the TE21's Case Benchmarks and SC Ready results. More specifically, Participant 5 stated, "The instructional coach showed me how to use assessment results to differentiate my instruction and incorporate rigor into my every lesson". Participant 2 declared "In the analysis sessions, the instructional coach assisted in the development of lessons which address the different DOK levels." All participants agreed the instructional coach served as a source of support and a valuable resource in formulating recommendations to improve instruction. According to Bengo (2016), instructional coaches assist in guiding teachers through the analysis of data which transforms teaching and learning into a more reflective practice.

Participants 2 and 4 also expressed that analyzing data was a challenge. Moreover, Participant 4 stated:

> Although it was a challenge, with the guidance of the instructional coach, I was able to incorporate strategies and improve the quality of my classroom instruction.

> Furthermore, these focused coaching sessions increased the articulation and collaboration between my colleagues and me.

Participant 3 agreed that the instructional coach supported them in the discussion of the data. Then later added, "The instructional coach also supported me as a math teacher in developing rigorous lessons that were data driven." Snodgrass Rangel et al. (2017) declared implementing data-driven instruction and having data discussion improves the instructional capacity and increase student performance. Although the majority of the participants were not clear about the role the instructional coach played in the data analysis process, they all valued the support provided. Participant 2 shared, "The instructional coach is not just an overseer of teaching but actually works closely with teachers in analyzing data, developing rigorous lesson plans, and assisting in the implementation of best practices." Participate 1 also added, "The instructional coach facilitated sessions on using data from formative and summative sources to formulate recommendations to improve instructions." Snodgrass Rangel et al. (2017) proposed instructional coaches work collaboratively with administration using data to inform and support the professional needs of teachers.

RQ2

RQ2: How do middle grade mathematics teachers at the local middle school describe their experiences with instructional coaches?

Theme 4: Professional development. Professional development is a vital part of the adult learning process in implementing best practices, new techniques, and instructional strategies in the classroom (Stewart, 2014). This tailored, customized

training promotes the optimal implementation of essential components of best practice to increase student achievement (Knight, 2018). The participants' collective perspective that the math instructional coach provided opportunities for collaboration focused directly on understanding and developing standards-based lessons using Norman's DOK to differentiate teaching and learning. Participant 1 declared:

> The math instructional coach provided and supported job-embedded professional development for teachers via collaboration, observations, and co-teaching. This individual helped the administrator identify the areas or issues that should be addressed by professional development. I feel the collaborative conversations and afternoon sessions with the math instructional coach changed my thought process and the way I implemented mandated district initiatives.

However, Participant 2 indicated that there was not enough time being spent in the professional development sessions to effectively address all the standards and best practices needed to move students. Participant 3 professed the following:

> Currently, I'm not sure how involved the instructional coach is in monitoring the school's professional development initiatives or improvement process. However, the instructional coach needs to be readily available for teachers, have time to plan and conference with teachers, as well as provide constructive feedback.

Participant 4 emphasized "The instructional coach provides professional assistance through one-on-one sessions and collaborative groups in an effort to solidify instruction. I feel comfortable participating in this session". Participant 5 added:

> Although an adequate amount of time is not spent participating in professional development opportunities, the instructional coach has fostered my appreciation and delivery of math instructional strategies. For me being from another country, it was a pleasure working with a colleague who assists me in implementing research-based instructional strategies.

Woulfin and Rigby (2017) urged that teachers should be provided meaningful, ongoing professional development opportunities which assist them in improving instruction as an essential means of increasing student achievement. Participant 1 shared "The instructional coach assists the administration in identifying my individual professional development needs based on data gathered from various sources." Participants 2 and 4 expressed an appreciation of the variety and content focused professional training offered. However, they were equally concerned about the limited amount of time they were afforded to experience the coaching sessions. Consequently, Participants 3 felt that if a full-time instructional coach was housed at the school level, professional opportunities would be more frequent, on-going, and designed to support the implementation of current instructional initiatives and best practices. Participant 5 added:

> Given the rough nature of the content standards and the rigor needed to teach them, the instructional coach could serve as an on-site source used to facilitate professional development. That way teachers can benefit from one-on-one assistance in the effective implementation of the state standards.

All participants agreed that consistent and frequent professional collaboration would be beneficial in building and sustaining the school's student-centered culture.

Participant 1 acknowledged:

> The instructional coach provides professional development relating to the appropriate use of curriculum, data to enhance student achievement and student growth, and opportunities to expand my professional growth. This individual provides these training both during and after school. Although the instructional coach is not a full-time position, this person visits the schools, attend professional development, and instructional activities and events.

According to Crawford, Zucker, Van Horne, and Landry (2017), aligning the instructional coaching cycle with andragogical principles can have an effective influence on teacher efficacy and student learning outcomes. Participant 2 shared, "The instructional coach made me feel comfortable as a teacher of mathematics. I felt empowered when implementing the strategies obtained from the professional learning experiences". Participant 3 concurred the same sentiments:

> The math instructional coach provided professional support that made me feel appreciated as a teacher and a learner. Implementing more professional development opportunities of this caliber would enhance the academic culture of my classroom, school, and district.

The overall analysis of these statements indicates all participants generally believed ongoing, individualized job-bedded professional development is needed to support, enhance, and expand rigorous teaching and learning. The instructional coach may be an asset in fostering the development of current instructional initiatives.

Theme 5: Student achievement. All participants maintained that having a full-time math instructional coach would expand avenues to share best practices, build collaborative teams, foster the analysis and interpretation of data, and create a standards-based school environment. Participants 1, 3, and 4 shared how vital improving math student achievement had become in the school district. More specifically, Participants 2 and 5 felt that the instructional coach provided them with ongoing professional development which promotes sustainable student growth. Although the participants' responses revealed the need for more frequent collaboration sessions and constructive feedback sessions, these sessions were necessary agents in order to increase math student achievement.

Participant 3 felt having a math instructional coach was an "excellent way to assist low performing schools with streamlining their instruction to foster an increase in student achievement." A majority of the participants agreed the instructional coach provide academic support with strategies, instruction, data, and resources to improve student learning. Likewise, Participants 2 and 5 believed the instructional coach was a viable resource in assisting them in organizing and gathering best practices proven to improve student learning. Participants 1 added:

> The math instructional coach even goes the above and beyond. For example, this individual keeps me informed of math contests and programs students can enter or participate in. The instructional coach facilitates monthly on-site professional development opportunities focused on student achievement.

Cognizant that instructional coaches are knowledgeable pedagogical experts, these individuals serve as agents of instructional change (Knight, 2018). The participants collectively agreed the math instructional coach played a vital role in facilitating and supporting teachers in improving teaching and learning. However, the inconsistency of providing constructive feedback and the amount of time spent with the coach has hindered their professional growth. All participants felt a full-time math instructional coach would be very beneficial in supporting their collective professional efforts which can lead to student learning and achievement. Additionally, the majority of the participants indicated that the instructional coach needs to be readily available for teachers, have time to plan and conference with teachers, observe lessons, co-teach as needed and provide constructive feedback. Desimone and Pak, 2017 maintained implementation of effective professional development engages teachers in active learning, changes attitudes and beliefs, and increases student achievement.

Dealing with Discrepant Cases

I carefully reviewed the transcripts, and the audio taped interviews to identify discrepant cases from data. Discrepant cases are responses from participants that don't match what the majority of the other participants say (Merriam & Tisdell, 2015). Additionally, I utilized member checking to ensure what was documented expressed the accurate perspective of all participants. During the collection and transcription of data, no discrepant cases were identified.

Evidence of Quality

This intrinsic qualitative study consisted of five semistructured one-to-one participant interviews. Participants had the opportunity to explain in-depth how they perceived the instructional coach assisted them with enhancing teaching and learning. To maintain accuracy and credibility, all Walden University IRB measures where implemented through the entire case study process. Member checking was employed by allowing each participant to review the findings with the researcher and make changes or clarifications as necessary. According to Creswell (2014), member checking is an important element in establishing and maintaining trustworthiness and credibility. It was during the member checking process that participants expressed the need for professional development on clarifying the roles the instructional coach.

As an added precaution to member checking, peer auditing was also used to minimize research bias during the transcription of the data. A retired educator who served as a mathematics teacher and administrator during her 36-year tenure was used as a peer auditor. The peer auditor met with me to review my transcript notes and my interpretations. During this meeting, the peer auditor read through the transcripts several times while making comparison notes in the margins. Finally, corrections and adjustments were made as needed. As a result, themes were fine-tuned, and some interpretation was reworded to provide an accurate depiction of the teachers' perceptions.

Summary

An intrinsic qualitative case design was used to conduct this research. Designed to gather middle grades math teachers' perceptive on instructional coaching, I conducted

semistructured interviews in a public-school setting to address two research questions. With an increased accountability to increase math student achievement within the school district, these research questions related to math teachers' perceptions of the current use of instructional coaching as it relates to teaching and learning. More specifically, participants reported the instructional coach was an important entity for instructional change but the lack of time for collaboration and feedback stunt their professional growth. Darling-Hammond, Hyler, and Gardner, (2017) maintained providing meaningful ongoing professional learning activities engage teachers in active learning, collaboration, and reflective conversations which enhances teaching and learning.

The literature reviewed in this research accentuated the importance of implementing instructional coaching with fidelity and how it can support school improving and teacher growth. Andragogy theory and research developed by Knowles, Knight and others played a significant role in designing and structuring professional learning experiences focused on pedagogy and specified needs. Although this study was based on a small sample of five participants, it has the implications of improving and sustaining growth in teaching and learning.

Having authentic conversations with the participants, five themes ascended from the overall interpretation of the data. Participants' responses indicated a lack of receiving constructive feedback from observations, inadequate amounts of time allocated for collaboration and reflections, and insufficient knowledge of roles of the instructional coach. The findings along with the literature and emergent themes reflected a need for clarifying professional development (the project described in Section 3 and in Appendix

A) in the area of instructional coaching which lead to the development of ongoing professional development.

Conclusion

In Section 2, the researcher outlined the research methodology. More specifically, I discussed the research design; the criteria, selection, and protection of participants; the data collection process; the method of analyzing the data; and a discussion of the analysis of the data. Section 3 will consist of specific details of the proposed project including rational, literature review, evaluation plan, and implication. Section 4 will discuss my reflections and conclusions including project strengths, limitations, recommendations, applications, future research, and conclusion.

Section 3: The Project

Introduction

This qualitative intrinsic case study focused on teachers' perspectives regarding the implementation of instructional coaching and its influence on mathematics teaching and learning. The findings coupled with the review of the relevant literature indicated the need for additional professional development that focuses on the design and implementation fidelity of instructional coaching as it relates to high quality research-based mathematics strategies and assessments. The data analysis from this study identified key areas of focus regarding the implementation of instructional coaching. The need for developing collaborative learning environments and data driven professional development activities fostered genuine feedback and reflective sessions on current instructional initiatives and students' academic growth.

The project (see Appendix A) addresses data from the qualitative intrinsic case study and literature review to offer district and campus administrators along with teachers of middle grade students selected strategies to strengthen implementation of instructional coaching and best practices. The information could provide opportunities for educators to adjust or modify current practices to support the professional needs of all staff members. Section 3 succinctly conveys descriptive data and goals of the project. The literature review addresses current research that supports the reason for selecting professional development as the project and its objectives. This section will conclude with an analysis of the project along with the project implications and its influence on social change.

Description and Goals

An examination of the perceptions of five middle grade mathematics teachers afforded opportunities to gather detailed information via one-on-one face to face interview sessions. Using an inductive approach, the data were categorized to determine themes and patterns which led to an overall understanding of participants' perceptions. A thorough review of the findings indicated a need for professional development and ongoing follow-up such as PLCs which focus on the fidelity implementation of research-based instructional strategies via instructional coaching sessions. Stewart (2014) indicated collaborative sessions afford greater opportunities for increased learning and teaching.

The project for this doctoral study is a professional development training which focuses on identifying and employing teaching and learning strategies using fidelity implementation of instructional coaching sessions. The goals of the professional development project are directly related to the middle school being studied as a research problem. The concern was to determine whether the current instructional coach initiative is leading to the greatest positive influence on teaching and learning. According to Aguilar (2013), effective instructional coaching practices have a positive direct correlation not only with student outcomes but also teacher outcomes. Moreover, instructional coaching is intended to reinforce teachers' and administrators' practices in ways that support schools so instruction is rigorous, delivery is effective, and assessment is appropriate for student learning to improve (Moore, 2014).

Robins (2014) proposed both full-time graduate students and working professionals should write explicit, quantifiable, attainable, relevant, and time-bounded goals (SMART) to establish a successful plan. This project will consist of a blended 3-day face-to-face session to include monthly virtual follow-up PLCs designed to support instructional coaches as well as instructional leaders. The overarching goal of this blended professional development was to provide ongoing support for instructional coaches as they assist teachers in strengthening teaching and learning. There are three goals for the 3-day face-to-face portion of the professional development:

- **Goal 1:** Participants will begin to build an instructional coach learning community for providing research-based strategies and assistance to teachers and administrators.
- **Goal 2:** Participants will clearly define the roles and responsibilities of instructional coaches as they relate to their work environments.
- **Goal 3:** Participants will develop a proposed schedule and log to effectively manage and document coaching sessions and observations.

Day 1. During Day 1, participants will be provided an overview of 3-day sessions and a suggested outline for the follow-up PLCs. They will begin developing these adult learning communities by establishing the norms and structure of these PLC sessions. Additionally, using a PowerPoint presentation, I will provide participants with research-based components of a coaching cycle. Moreover, clearly defined roles and responsibilities will be discussed as they relate to their instructional environments and relationships with teachers. Day 1 will conclude with a guided reflective session.

Day 2. Day 2 will begin by revisiting the components of an effective coaching cycle. Participants in collaborative groups will create an instructional coach cycle tailored to their respective sites. Also, they will discuss and plan a coaching kickoff meeting where the instructional coaches and the teachers have the opportunity to begin establishing a respectful and trusting rapport. This session will also end with time for reflection.

Day 3. A key component of this professional development is to strategically allow participants opportunities to collaborate and reflect on their practice. This will be accomplished on Day 3. This session consisted solely of modeling and practicing a complete coaching cycle, and a schedule for the virtual PLCs will be generated. The purpose of these virtual PLCs is to provide participants with a supportive and collaborative learning environment where shared exploration and experiences can be generated and communicated. Instructional coaches and instructional leaders alike will spent time researching, studying, analyzing, and perfecting their craft.

Rationale

The members of the SLT of this southeastern middle school were concerned about whether the current implementation of the instructional coaching initiative supported teaching and learning. Using an intrinsic qualitative research design, the research findings revealed a need for ongoing professional development to support the implementation fidelity of instructional coaching. Moreover, the participants in this study indicated they did not feel enough time was allocated for collaborative efforts with the instructional coach. King et al. (2009) argued a major component of instructional coaching is the

individualized coaching sessions. The participants all agreed these coaching sessions provided a supportive environment which encouraged collaborative dialogue and implementation of new instructional strategies and best practices.

According to Marsick and Watkins (2015), educators are known for influencing each other intentionally or unintentionally in both personal and professional practices. As an instructional coach, these educators have an increased opportunity to intentionally engage in professional practice dialogue with teachers. These collaborative and instruction infused dialogues have proven to be an effective practice which influences teaching and learning. Moreover, Garbacz et al. (2015) suggested strategically scheduling a sufficient amount of time for these sessions to occur throughout the school year improves implementation fidelity of instructional coaching. Scheduling of common planning time affords opportunities for professional collaboration via PLCs and instructional coaching sessions (Tanner et al., 2017).

According to Hallam, Smith, Hite, Hite, and Wilcox (2015), a PLC is vital to pursue increasing collaboration among educators. Instructional coaches could use PLCs to collaborate and plan how to effectively provide teachers assistance via multiple opportunities. These opportunities may consist of one-on-one planning or co-teaching, instructional observations with constructive feedback, reflective conversations which lead to personal reflections, or embedded PLCs. Therefore, designing a blended professional development which includes ongoing job-embedded PLCs is a logical method for the sustaining the instructional coaching initiative.

Review of Literature

The literature review was derived from articles and publications retrieved from Walden University Library's electronic databases, and academic texts. Databases searched in this literature review included ERIC, Google Scholar, and ProQuest Central, Education Research Complete, SAGE Premier, and Education Resources Information Center. Key search terms included *instructional coaches, andragogy, professional learning communities (PLC), collaborative teams, and professional development.* Relevant literature was compiled and explored with the intention of enhancing the fidelity implementation of instructional coaches to support teachers in implementing effective instructional practices.

Adult Learners

Knowledge and understanding of the theories of adult learning can be powerful tools when examining the most effective ways to support teaching and learning (Brockett & Hiemstra, 2018). Andragogy is a method of learning that predominantly focuses on adult learning and heightens the learners' ability to acquire and retain information in a way that makes sense to the learner and their unique learning strategy (Knowles et al., 2011, 2015). Professional development conducted at schools or districts often requires experts of the educational field to provide guidance and support on new standards, practices, and techniques (Mangin & Dunsmore, 2015). Districts and campuses seek assistance from the learning education agencies that have experts that can be brought in or through social networks to assist with professional development or to train the trainers (Kelly & Antonio, 2016). In other cases, more extended interaction (contracted coaches)

with a particular type of expertise (science, math, or writing) was needed (Peterson & Ray, 2013; Gibbons & Cobb, 2016).

The principles of andragogy were first introduced by Knowles in 1968 who stated that a person's life experiences and self-identity are essential components when learning new concepts (Knowles, 1984). Knowles maintained that adult learners become more independent and responsible as they mature and through hands-on exploration they demonstrate clarity of the concept or skill. According to Knowles et al. (2015), teachers' experiences and learning style determine the emphasis or the level of fidelity the concept or skills implemented.

Moreover, Zepeda, Parylo, and Bengtson (2014) suggested on-going focused professional development supports administrators, teacher, staff, and student learning. This type of adult-centered professional learning has the potential to provide integrated experiences as educators gain content knowledge and acquire instructional strategies (Jacob et al., 2017). According to Stewart (2014), high-quality professional development is critical to guarantee teachers obtain and sustain the knowledge, strategies, and skills necessary to positively influence student learning. Cochran and Brown (2016) proposed job-embedded professional development is a way for adult learners to personally transform their learning into practice.

Cox, Bachkirova, and Clutterbuck (2014) acknowledged that adults, self-conceptual learners, need to collaborative design their own professional learning experiences. Coaching, a learning approach to professional development, affords adult learners the opportunities to collaboratively determine what skills and knowledge will be

acquired based on their identified needs (Wlodkowski & Ginsberg, 2017). Furthermore, Cox (2015) emphasizes the connection between the andragogy and coaching practice and how they impact the development and implementation of professional development.

Professional Development

Professional development has the potential to either propel teacher learning or have minimal to no impact depending upon the manner in which it is delivered (Jacob et al., 2017). Gaumer Erickson, Noonan, Brussow, and Supon Carter (2017) indicated high-quality, evidence-based professional development is essential to ensure that teachers obtain the knowledge, strategies, and skills necessary to positively impact student learning. Professional development has been the medium by which the void in understandings about best practices or curricular adoptions and adaptations is filled amongst educators, and it is a conduit to improving instructional practice (Loyalka, Popova, Li, Liu, & Shi, 2017).

Schools and districts have used professional development in a multitude of ways, both within and outside of the context of actual school sites, to provide teachers with opportunities for knowledge and pedagogical growth (Daehler, Heller, & Wong, 2015). It is clear in the literature that stands alone off-site professional development is often ineffective in changing teacher practice (Gibbons, Kazemi, & Lewis, 2017); as a result, educational entities are approximating ways to incorporate infrastructures that support teachers' professional learning which bear little resemblance to the one-size fits all workshops and conferences of the past. The final characteristic of visionary professional development signifies a very important and essential aspect of professional development:

adult-centered instruction, specifically, andragogy (Martin, Kragler, Quatroche, & Bauserman, 2014). Professional development possesses the potential to facilitate substantial improvements in teachers' abilities and skills to support student learning; however, that potential will not be realized if educators are not intentional about changing the practices used to facilitate teachers' learning experiences (Fullan, 2006; Tam, 2015).

Empirical research indicates that providing collaborative inquiry experiences through on-going professional development can potentially increase teacher efficacy (Dixon, Yssel, McConnell, & Hardin, 2014). Kennedy (2016) proposed providing teachers with professional learning activities which allow them to have a reflective dialogue about their instructional practices while enhancing their pedagogical expertise. Additionally, teachers who participate in authentically designed professional development tends to appreciate and implement the instructional practices with confidence and fidelity (Pacchiano, Klein, & Hawley, 2016). Tannehill (2016) thrived on providing teachers with effective professional development opportunities which inspire teachers to think critically, actively engage in collaborative conversations, and focus on individual learning outcomes.

Effective job-embedded professional development can leave a lasting imprint on administrators, teachers, and students (Zepeda, 2018). Administrators must strategically design professional development activities involving teachers in the planning process. According to Darling-Hammond et al. (2017), teachers are self-directed, conceptualized learners who thrive on participating in professional experiences which affords them opportunities to make connections between content learning and pedagogies. Desimone

and Stuckey (2014) indicated that professional development is sustainable support provided to teachers to enhance teaching practices and increase student learning. These professional opportunities may be provided by instructional leaders, teacher leaders, instructional coaches or consults (Glover et al., 2016). Administrators are committed to designing and facilitating professional development which actively engaged teachers in collaborative session to promote continuity and experiential outcomes (Hopkins & Woulfin, 2015).

PLCs

PLCs, a commonly used educational initiative, are collaborative groups working towards a common goal to expand content knowledge and improve their craft (Mattos, DuFour, DuFour, Eaker, & Many, 2016). According to Reitz and Hall (2017), instructional coaches who participate in a PLC feel empowered and more confident in coaching teachers and facilitating the change processes. In addition, instructional coaches' PLCs are developed based on the Learning Forward Design Standards which incorporate theory, demonstration, practice, and reflection (Horn, & Kane, 2015). These collaborative adult learning sessions afforded instructional coaches the opportunity to think about coaching and solidify their practice (Reitz & Hall, 2017).

Additionally, McConnell, Parker, Eberhardt, Koehler, and Lundeberg (2013) proposed utilizing virtual PLCs proves to be a power and convenient tool. These sessions can be conducted using Skype, Zoom, FaceTime or any other tools that allow both audio and visual communication. PLCs, whether face-to-face or virtual, are proven on-going collaborative sessions used to improve teaching and learning (Kurstedt & Pizzi, 2018).

Moreover, the flexible nature of the virtual PLCs affords the instructional coaches the opportunities to have an in-depth, focused conversation in an informal manner while supporting each other's professional growth (DuFour & Reason, 2016; Gamboa, 2014).

Conclusion

Instructional coaching can be a vehicle used to sustain and actively build capacity as well as support teachers in improving teaching and learning (Knowles, Holton III, & Swanson, o2012). The research review in this section yield that adult learning, professional development, professional learning communities, and collaborative learning groups are vital tools needed to implement instructional coaching with fidelity. DuFour (2013) argued that effective professional development must consist of five components: choice, flexibility, small steps, accountability, and support. As the professional development facilitator, it is important for me to understand that adult learners need ongoing support, alternatives, and chunking of new learning as well as accountability initiatives.

Project Description

Potential Resources and Existing Support

Collaborating with district and campus instructional leaders, instructional coaches and other selected staff, an appropriate time to conduct this professional development will be scheduled preferably during the month of June. A flyer and an agenda will be provided to the Director of Curriculum and Instruction for posting in the district's professional development calendar as well as emailing to the appropriate staff members (administrators, instructional coaches, and teacher leaders). The Director of Curriculum

and Instruction will also be encouraged to extend the invitation to teachers as well. Participants will be asked to sign up for this professional development session via Google Docs, and supporting materials will be distributed through Yammer, a virtual platform used to facilitate online collaboration and communication (McConnell et al., 2013).

To successfully conduct this training session, I will need access to a Smartboard or a Promethean board and an attached laptop to project my PowerPoint presentation. This PowerPoint presentation will consist of the roles and responsibilities of instructional coaches, vital instructional coaching components, and sample instructional coaching cycles. Additionally, chart paper, multi-colored permanent markers, tape, white cardstock, index cards, copies of handouts and 1" binders will be obtained through a district funding source for use during the sessions. Participants will be asked to bring writing utensils and a personal laptop. Since most district funding sources do not allow for food purchases, I will provide continental breakfast items and snacks for the participants during the 3-day face-to-face session. The PD will be held in the media center or the multi-purpose room in of one of the schools.

Potential Barriers

Allocating time to conduct this professional development would be the only potential barrier for the project. Conducting professional development during the regular school day can be very difficult. Many provisions would have to be made, such as hiring substitute teachers, establishing an adequate location that does not interfere with the normal school day, and the loss of instructional time or collaborative teaching efforts. Having a 3-day professional development during the regular school year may not be cost-

efficient. An ideal time to entice educators to commit to professional development would be at the end or beginning of the school term during non-instructional already designated days for professional development. The project has a blended design which includes a virtual component to ensure on-going support which also may possibly eliminate the potential barrier of time allocation.

Proposal for Implementation and Timetable

According to Stewart (2014), when planning effective professional development collaboration is a vital attribute. Collaboration efforts will include district-level instructional leaders, principals, instructional coaches, and teacher leaders. Planning initiatives will begin with my presentation during a spring District Team Leadership Meeting. As the professional development facilitator, I devised a proposed implementation timeline to include dates, tasks, delivery methods, and location where appropriate (see Table 6).

Table 6

Proposed Implementation and Timeline

Date	Task	Delivery Method	Location	Persons Involved
January	Approval to attend District Leadership Team Meeting	Email		Superintendent, Researcher
February	Present PD proposal	PowerPoint presentation	District Leadership Meeting	District Instructional Leaders, Principals, Researcher
March	Plan PD	Email, Flyers, Announcements		Director of Curriculum & Instruction, Researcher
April	Disseminate information	District PD Calendar, District/School Listserve		Director of Curriculum & Instruction
May	Coordinate Time & Location	District PD Calendar/Schedule		Director of Curriculum & Instruction, Principal, Researcher
May	PD Sharing	PowerPoint Presentation and Agendas	District Office	District Instructional Leaders and Researcher
June – May	Conduct PD Sessions	PowerPoint Presentation, Handouts	Specified Location	Researcher and Participants

Roles and Responsibilities of Administrators, Teachers, and Others

Serving as the professional development facilitator, it is my responsibility to plan, organize, engage, and motivate all participants. Instructional leaders and principals assisted in the planning process to tailor the presentation to the specific needs of the district. A professional development calendar was generated and disseminated by the Office of Curriculum and Instruction designating the dates, times, and locations of these professional opportunities. Since these professional opportunities will be held in June, the participants will have an entire school to improve the consistent implementation of the

instructional coaching strategies. Participants will be encouraged to attend this professional training with a growth mindset, actively and collaborative engage in each sessions' activities and be willing to share their practices and experiences with the other participants. Moreover, all stakeholders must be committed to the fidelity implementation of the instructional coaching initiative in an effort to increase teaching and learning. Additionally, it is important for the participants to implement and actively participate in the virtual PLCs to continue the collaborative and reflective conversations which they established in the face-to-face training. This presentation may serve as a catalyst for change in sustaining this district's instructional coaching initiative.

Project Evaluation

The qualitative aspects of the project will be measured in terms of participants' perceptions and levels of satisfaction with the presentation of the training. Participants will be encouraged to provide anonymous feedback on the progress they are making towards the learning outcomes. A parking lot, a technique used to house questions and ideas during meetings, will be posted throughout the training sessions for questions, comments, and concerns. Participants will be asked to complete both formative and summative evaluations. Formative assessment (assessment for learning) is feedback focused on performance and acceleration of learning while summative assessments (assessment of learning) concentrates on information obtained or learning outcomes (Dixson & Worrell, 2016).

Formative Evaluation

Formative assessments can be designed to promote self-regulated learning (Fisher & Frey, 2015). This form of evaluation is used to make changes or modifications to what has occurred. Professional development facilitators can use formative assessments as a tool to effectively adjust and make the improvement to the professional learning experiences. To formatively assess participants during this professional training, I will provide 3 x 5 index cards on Day 1 and Day 2 and encourage them to provide feedback of their stage in processing the new learning.

Additionally, participants will provide responses (three pluses and a wish) to assist me with addressing learner needs. Moreover, Fisher and Frey (2015) recommended checking for understanding every 5 to 10 minutes to maintain rigor and effectively support student learning. I strategically embedded turn-and-talks, think-pair-shares, and reciprocal teaching throughout the presentation to allow adequate process time, reflection, and clarification moments. According to Woulfin and Rigby (2017), adult learners should be provided with opportunities for discussion, problem solving and practicing new learning.

Summative Evaluation

Summative assessments are traditionally used for cumulative purposes. This feedback can determine how well participants have mastered the professional development learning goals. Moreover, summative assessments are used as a means of evaluating the effectiveness of a program, learning outcomes, goals or standards. Dixson and Worrell (2016) suggested that it is extremely important to design summative

assessments with clear, effective questions and provide opportunities to make broad connections and synthesized thinking. Summative assessments are normally given at the end of programs, courses, and training. At the end of Day 3, participants will be asked to complete a summative evaluation. This evaluation will provide me with a clear, in-depth depiction of where the participants are as in relates to the implementation of the instructional coaching initiative. By combining both formative and summative evaluations, this method will provide feedback in developing and implementing future professional development opportunities to support teaching and learning.

Project Implications

Social Change

Instructional coaching has the potential to effective influence teaching and learning (Mangin & Dunsmore, 2015). In fact, instructional coaches help in developing positive and supportive relationships among administrators, teachers, and staff (Mangin, 2014). These instructional leaders serve as mentors, critical friends, facilitators of PLCs, and catalysts for change. Designed to increase the understanding of benefits of instructional coaching, this project has a social change for instructional leaders, instructional coaches, teacher leaders, principals, and teachers and ultimately the students they serve. Hence, the implementation of instructional coaching is a proven personalized professional development known to increase teacher retention and improve their instructional practices (Clark, Schoepf, & Hatch, 2017).

Local Stakeholders

This project could prove to be beneficial to local stakeholders to include instructional coaches, administrators, teachers, and students. Instructional coaches will be better equipped through both face-to-face and virtual collaborative efforts to support teachers in improving instruction and instructional delivery. These training sessions will provide administrators with opportunities and research-based strategies needed to create a more collaborative, data-driven, and student-centered learning environment. Through a growth mindset, teachers will capitalize on individualized professional support received by perfecting their crafts and increasing instructional rigor as well as boosting student achievement (Dweck, 2014). Teachers who embrace a growth mindset feel empowered and operates on the premise that talents are developed through hard work, determination, and collaboration (Dweck, 2015). Students will gain access to collaborative teaching and learning opportunities that may support reflective thinking and critical analysis techniques which proves to increase content mastery and retention. Moreover, local stakeholders could experience vital benefits from this project through the implementation fidelity of instructional coaching within this local district.

Large Context

In a larger context, this project has great potential of supporting teaching and learning beyond the perimeters of the local school setting and district. Effective implementation of instructional coaching strategies contributes to teacher professional and personal growth, supports pedagogical understanding, and increases social and academic development. This project was designed so that any district could tailor it to fit

the needs of their district. It was developed based on the need to provide effect on-going professional development with built-in PLCs in an effort to improve student achievement. Through collaboration, research-based practices, and implementation fidelity, district across the nation may expose their instructional staff to personalized professional training focused growth of the current educational organization.

Summary

Section 3 consisted of a comprehensive outline of the project I designed for the fidelity implementation of instructional coaching. Derived from the intrinsic qualitative data in Section 2, this project consists of a 3-day professional development training (Appendix A) and virtual PLCs as follow-up support. This section is compiled of the description and goals, a rationale, and a literature review. It also includes a description, evaluation, and identified the potential for the project. In Section 4, I will discuss my reflections and conclusions regarding the completed intrinsic qualitative project study.

Section 4: Reflections and Conclusions

Introduction

The purpose of the study was to explore the perceptions and experiences of middle school math teachers about the role of instructional coaches in supporting math instruction in grades 5-8. The comprehensive data analysis indicated a need for further professional development to support the implementation fidelity of the current instructional coaching initiative. As a result, I designed a blended professional development project which incorporated identifying and employing teaching and learning strategies used to implement instructional coaching with fidelity. This section focuses on the strengths and limitations of the deliverable project, as well as possible recommendations for alternative approaches. I will also present reflective thoughts on the research processes and my personal growth as a scholar, practitioner, and project developer. This section will conclude with recommendations for practice and future research.

Project Strengths and Limitations

Strengths

The strengths of this project are clearly connected to the data generated from the semistructured teacher interviews. The overall goal of the professional development is to equip all participants with research-based strategies necessary for implementing instructional coaching with consistency and fidelity. Instructional coach participants will be afforded the opportunity to enhance or improve their craft through collaborative efforts and sharing of knowledge that may influence teaching and improve students' learning. Administrators who participate in the training may gain a better insight into how

to become viable collaborative partners with the instructional coaches in creating positive standards-based learning environments (Hall & Simeral, 2017). This project will support teacher participants and indirectly students receiving instruction.

During the professional training, all participants will be provided with adequate opportunities to collaborate, explore the role each plays in the implementation of the instructional coaching initiative, and actively contribute to each other's professional growth. The participants will be strongly encouraged to create and maintain their PLCs for ongoing support through the school year as they sustain their reflective practices. One ultimate goal of this project is rechanneling the mindsets of the participants so that school improvement becomes a collaborative effort of all stakeholders.

Limitations

A limitation of this project is time restraints that may possibly hinder success. Although the professional training provides participants engaging opportunities to explore and process research regarding the implementation of instructional coaching, it is the district's responsibility for allocating a significant amount of time for transitioning through the coaching cycle with fidelity. It is important for district administrators, instructional coaches, principals, and teachers to approach the implementation of instructional coaching with a growth mindset. Effective implementation of this process takes time and effort to significantly influence teaching and learning (Hawley, 2015).

Recommendations for Alternative Approaches

The problem discussed in Section 1 was the lack of consistency in eighth grade mathematical student achievement. The constant decrease in the state mandated math test

scores indicated a need to reassess the implementation of instructional coaching. An alternative approach to addressing the problem could have been to change or modify the study's design. Instead of selecting an intrinsic qualitative study design, an alternative approach could have been a mixed method design to incorporate a survey or questionnaire to determine the effectiveness of instructional coaching on teacher efficacy and student achievement. Another alternative could have been to conduct the sessions virtually or present the training as prerecorded videos that participants could watch at their own pace through intensive collaborative sessions over an extended period of time.

Scholarship, Project Development, and Leadership Change

Scholarship

The development of this culminating project study has afforded the researcher a viable opportunity to enhance my knowledge of scholarly research to a level beyond my expectations. I have learned to overcome temporary setbacks and major life-altering events while completing the coursework and navigating through scholarly research to complete my project. Moreover, I gained an appreciation for the doctoral process, grew more confident in my ability to decipher peer-reviewed educational articles focused on teacher perceptions and instructional coaching, and maintain mental and emotional discipline through my 6-year research journey at Walden University. Additionally, I have come to the realization as a lifelong learner and scholar that I can have a positive impact on my immediate environment as well the overall educational field and society.

As an educator, I have grown tremendously as teacher, instructional leader, and person. This process has influenced my instructional beliefs and practices and increased

my commitment to understanding the different educational frameworks and the impact they have on my work. As a result, I better understand the meaning of being patient and persevering through the doctoral experience.

Project Development

During the development of this professional development project, qualitative data from the semistructured interviews revealed teachers' perceptions of instructional coaching and its influence on teaching and learning. These interviews provided me with a wealth of knowledge regarding the support needed to implement research-based practices and strategies to improve student achievement. The review of findings led to designing a 3-day face-to-face training coupled with follow-up virtual PLCs to addressed implementing instructional coaching with fidelity. The training focused on supporting teachers, instructional coaches, and administrators in gaining a more thorough understanding of the roles of instructional coaches, the coaching cycle, and the fidelity implementation of this instructional initiative.

This training provided numerous opportunities for collaboration, reflection, and sharing of experiences and knowledge. Participants were encouraged to provide constructive feedback though formative and summative evaluation methods. This feedback assisted in daily modifications of training content and delivery as well as determining whether the training goals were achieved. Finally, the knowledge gained through developing and implementing this project offered me guidance in designing and facilitating future professional learning experiences.

Leadership Change

Day, Gu, and Sammons (2016) suggested effective instructional leaders are visionaries who facilitate educational improvement and sustainability. These leaders have the ability to foresee problems, analyze situations, and predict outcomes. Although no one leadership style fits all situations, leaders' effectiveness defines the success of the organization. Participating in the doctoral study process and developing this professional development project has enhanced my leadership capabilities. I believe that I am better equipped with a renewed zeal and passion for engaging in lifelong learning, conducting scholarly research, and thinking critically to solve educational issues.

Analysis of self as scholar. A scholar is a lifelong learner who possesses numerous qualities. As I traveled along this doctoral journey, I noticed a shift in my organizational and communicational skills. To complete this project study, I strategically created an academic as well as a personal schedule to keep track of deadlines, appointments, and family engagements in an effort to maintain a balance between my academic studies and my responsibilities as a mother. I have increased patience with the process and my perseverance to move forward despite obstacles, setbacks, and life-altering events. This process has taught me how to conduct scholarly research, analyze data, conduct in-depth interviews, and feel confident in developing and implementing research-based professional development.

Analysis of self as practitioner. A practitioner is a person actively engaged in their profession. As a reflective practitioner, I have assisted my principal in various capacities. My diverse experiences as a teacher, teacher leader, and educational

practitioner assisted me in the development of an interpersonal toolkit of people skills. These skills include the ability to effectively listen, communicate and relate to others on personal and professional levels with the goal of building and establishing mutual relationships of respect and trust. Additionally, during my studies here at Walden University, my written and verbal communication skills along with my ability to analyze and problem solve have been extremely helpful in supporting my school, administrators, and the district with research-based strategies to support the implementation of the instructional coaching.

Analysis of self as project developer. A project developer is tasked with the role and responsibility of creating and completing a project in a timely manner. As the project developer, I was responsible for the implementation of activities and strategies focused on and designed to support the fidelity implementation of instructional coaching. In designing this professional development, it was vital that I consider the audience, their roles, and their needs. As a result of creating this professional learning experience, I feel that I am capable of designing future data-driven trainings tailored to the needs of the specific organization or educational system.

Reflection on the Importance of the Work

The knowledge gained from this project will offer increased professional training while enhancing skills and techniques, which ultimately benefit students (Partee, 2014). Simultaneously, these same educators can become vessels from which peers and colleagues could draw (DuFour, DuFour, & Eaker, 2008). This project aimed to address the specified needs as indicated in the analysis of the teachers' perspectives. The structure

and the design of this project provided participants with a collaborative network focused on the effective implementation of instructional coaching. Implementing this project taught me to the importance of providing adult learners opportunities for collaboration, reflection, and on-going support.

Implications, Applications, and Directions for Future Research

This project can assist instructional coaches, administrators, and teachers by providing research-based strategies for the effective implementation of instructional coaching. These individuals may also gain viable insight necessary to sustain and implement this initiative with fidelity. Future application of this professional development could involve expanding the training sessions beyond the district lines and throughout the state as well as other regions. Additionally, this training could evolve into virtual ongoing professional learning communities in an effort to support collaboration, teacher efficacy, and student learning (Kuh, 2016).

Future research for this project would include input from the project evaluation of this professional development. Additional qualitative data such as classroom observations, focus groups, and surveys may provide a more in-depth appreciation of instructional coaches.

Potential Impact for Social Change

This project has the potential to enhance knowledge and transference of skills through reflections, self-awareness, and self-evaluation. Participants of this professional training will be empowered to implement instructional coaching with confidence and fidelity. The virtual PLCs will afford participants opportunities for on-going

collaboration that can influence social change. Instructional coaches will work closely with instructional leaders and teachers to ensure that all students receive relevant and rigorous instruction. As a result, this district may be an example of social change for surrounding districts.

Conclusion

In this section, I reflected upon the shift in my mindset during my doctoral journey as a scholar, practitioner, and project developer. A discussion of my project's strengths and limitations were followed by alternative recommendations for professional training that support the implementation of instructional coaching, implications, applications, and directions for future research. By conducting this research and designing the professional development project, I expanded my knowledge and contributed to improving the school's culture and instructional environment. As a result, I believe I am better prepared as an instructional leader and change agent in the educational field.

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Appendix A: The Project

Instructional Coaching Training Session	
Purpose	This project for my doctoral study is a professional development training which focuses on identifying and employing teaching and learning strategies using fidelity implementation of instructional coaching sessions. This PD was designed to address the needs of a southeastern middle school regarding the implementation of the instructional coaching initiative.
Target Audience	The target audience for this project consists of instructional coaches, teacher leaders, and administrators. Teachers will also be invited to attend.
Goals	❑ **Goal 1:** Participants will begin to build an instructional coach learning community for providing researched-based strategies and assistance to teachers and administrators. ❑ **Goal 2:** Participants will clearly define the roles and responsibilities of instructional coaches as it relates to their work environments. ❑ **Goal 3:** Participants will develop a proposed schedule and log to effective managing and documenting coaching sessions and observations.
Learning Outcomes	❑ Improve overall knowledge and understanding of Instructional Coaching ❑ Support administrators, instructional coaches, and teachers in understanding the components of the coaching cycle. ❑ Equip administrators and instructional coaches with effective strategies to implement instructional coaching with fidelity.
Evaluation	Participants will complete anonymous formative and summative evaluations. ❑ Formative – 3 x 5 index cards ❑ Summative – Professional Development Evaluation Sheet
Resources/Materials	❑ PowerPoint Presentation ❑ Promethean Board/Smart Board ❑ Internet Connection ❑ Laptop ❑ Copies of Handouts ❑ Colorful Index cards ❑ Markers

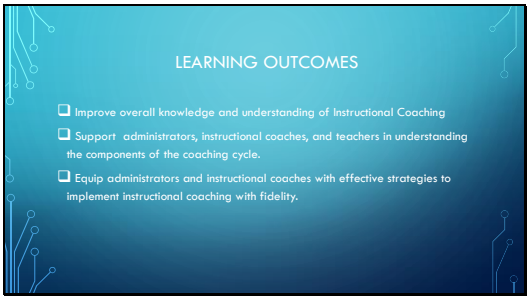
	❑ Bins for each table ❑ Sticky notes ❑ Pens/pencils/pens ❑ Post-it Chart Paper ❑ Tape ❑ Cardstock for name tents ❑ Summative evaluation sheet ❑ Continental Breakfast Food items

Slide 1

Slide 2

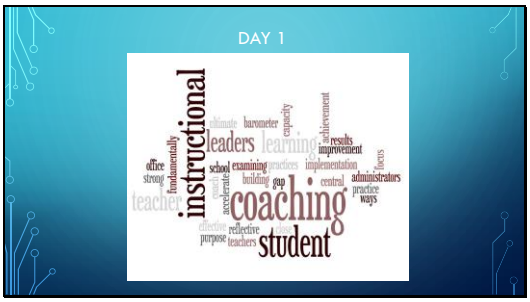
Note To Trainer: Welcome Instructional Coaches, Administrators and Teachers. Explain the general housekeeping items and encourage participants to creatively create name tents. Invite participants to partake in the continental breakfast provided. Distribute copies of the PowerPoint Presentation.

Slide 3



Note To Trainer: Explain the learning goals and purpose of the training.

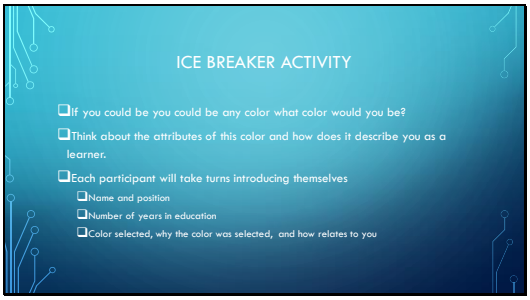
Slide 4



Slide 5

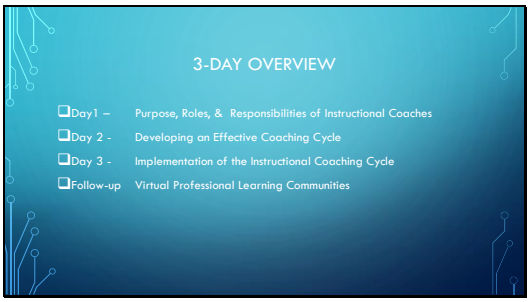
Note To Trainer: Provide an overview of Day 1.

Slide 6



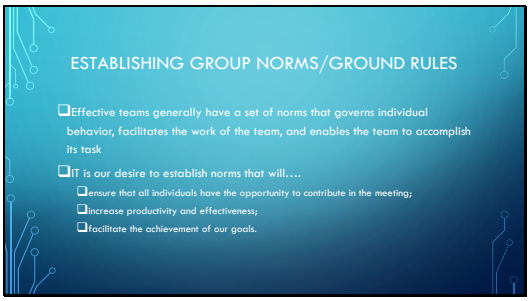
Note To Trainer: Lead the icebreaker activity by explaining/modeling the expectations.

Slide 7



Note To Trainer: Provide the overall purpose of the 3-Day Training and how it can influence teaching and learning.

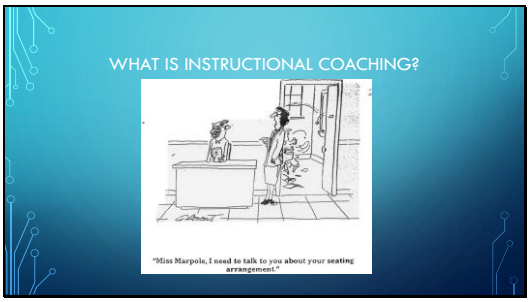
Slide 8



Note To Trainer: Explain to participants to retrieve three index cards from the bin in the center of their tables. Allow participants 3 – 5 minutes to write ideal behavior to be considered for group members. Participants will be instructed to place them faced down in the center of their tables. After all cards have been collected, I will shuffle the cards, read each card and allow for discussion about the ideas shared. The participants will come to a consensus on (3-5) norms for the group. A volunteer will be asked to compile the

list on a large Posit chart paper to be displayed throughout the training.

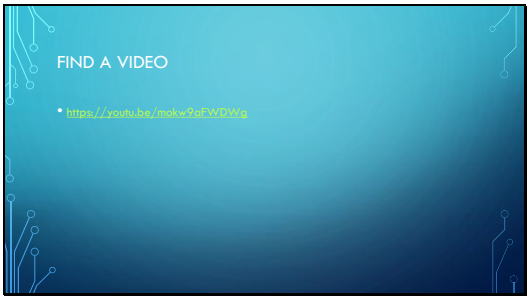
Slide 9



Slide 10

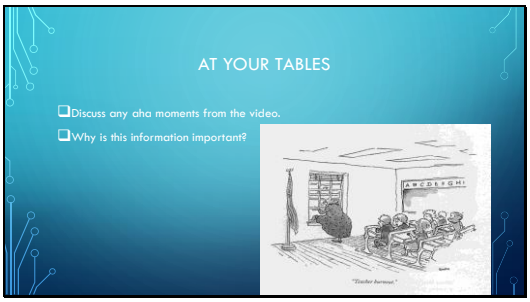
Instruct participants on the definition and benefits of Instructional Coaching.

Slide 11



Participants will watch a video of a pre-observation meeting and discuss aha moments and why this was important.

Slide 12



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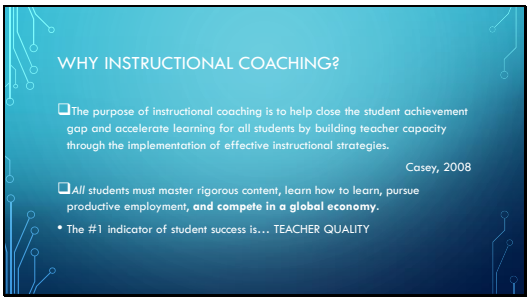
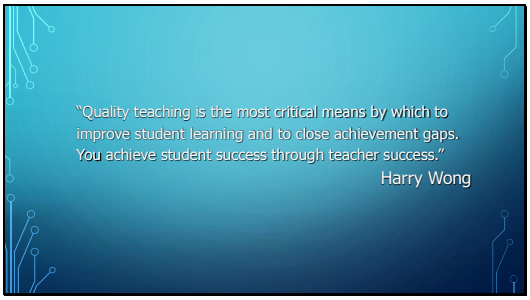


Engage participants in discussing reasons for Instructional Coaching.

Slide 14



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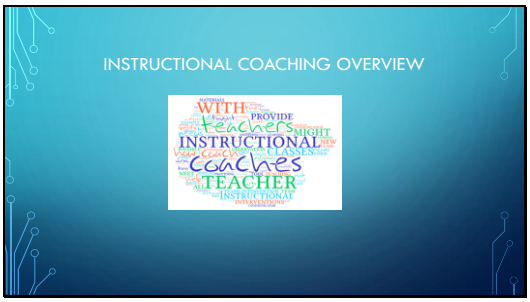

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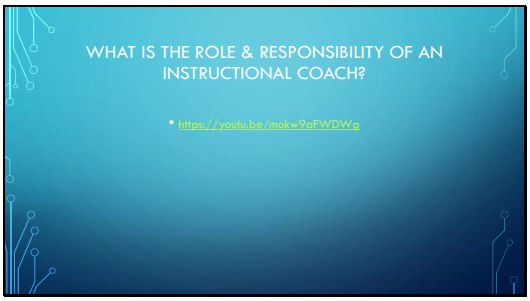


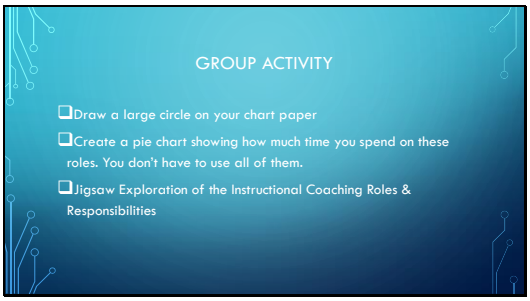
Participants will watch a video. They will be asked to jot down the different roles and/or responsibilities displayed.

Slide 17

Roles & Responsibilities will be shared with the group.

Slide 18

Slide 19

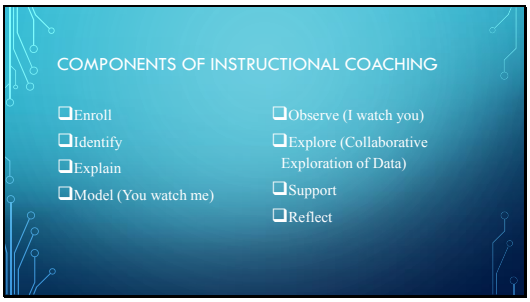


Using the jigsaw method, participants will explore the roles and responsibilities of instructional coaches and present their finding to the group.

Slide 20

Provide a 15 minute thinking/processing break for participants.

Slide 21



Using the Popcorn reading strategies, participants will read a brief synopsis about the components of Instruction Coaching and have discussion.

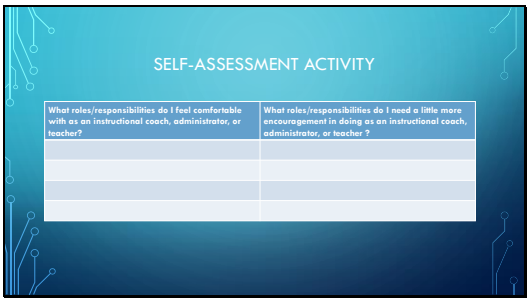
Slide 22

Dismissal for Lunch. Explain that lunch will be own your own and we will resume at 12:45 p.m.

Slide 23

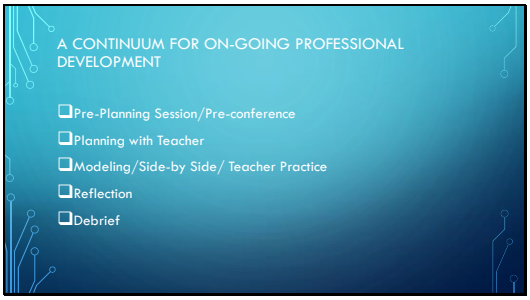
Note to Trainer: This activity should take no more than 3 – 5 minutes. Instruct participants to return to their seats and complete the self-assessment.

Slide 24



Explain the purpose of the self-assessment activity. Have participants complete the activity individually. Then have them discuss their findings with the group. This will allow participants to reflect on their strengths and opportunities for growth.

Slide 25

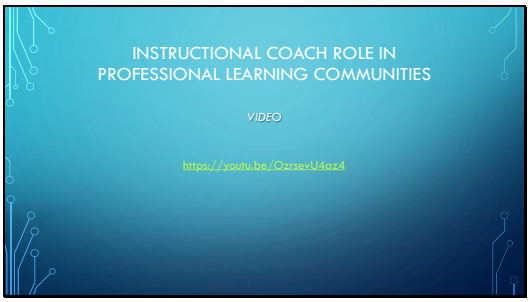


Instruct participants on each component and allow for shared experiences.

Slide 26

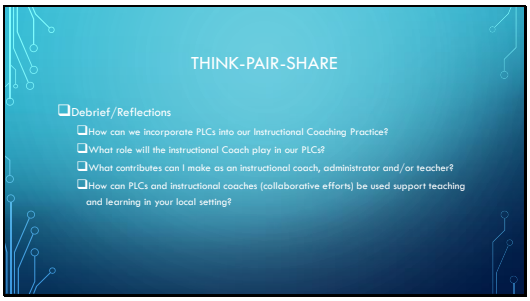
15 minute break.

Slide 27



Participants will watch a 3 minute video. This video describes the Instructional Coach's responsibility in the area of Professional Learning Communities. With

Slide 28



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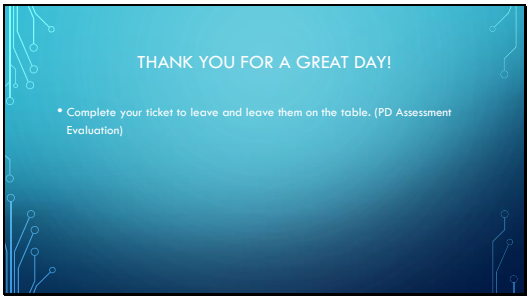

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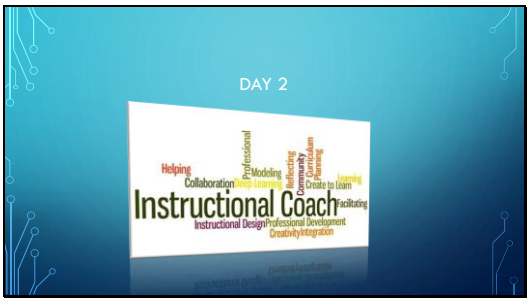
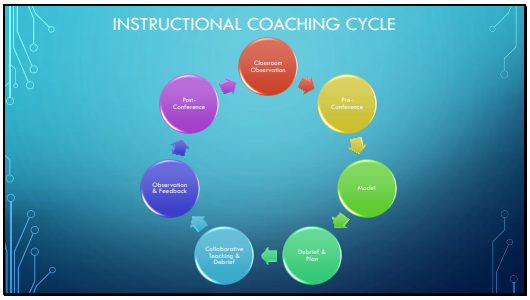


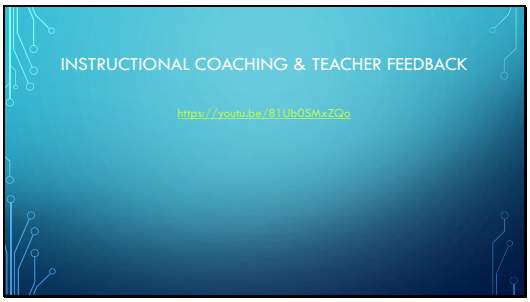
Slide 31

Slide 32



Groups will be assigned a number between 1 and 5. They will be instructed to that will be their starting point. Explain that there are actually 7 components to this cycle but today we will learn about them in 5 rotations.

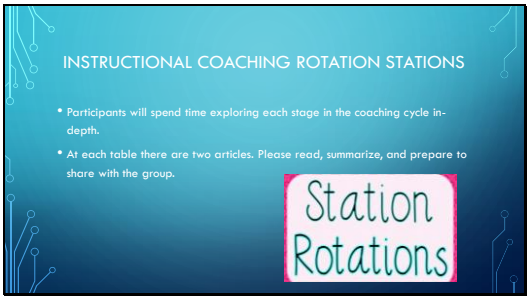
Slide 33



Slide 34

15 minute break.

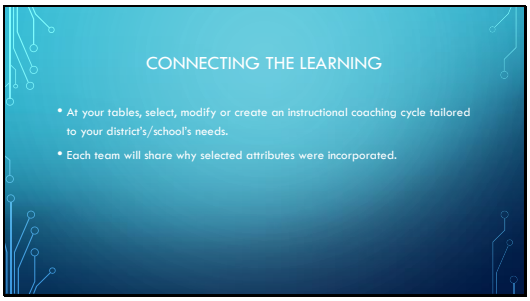
Slide 35



Slide 36

Dismissal for Lunch. Explain that lunch will be own your own and we will resume at 12:45 p.m.

Slide 37



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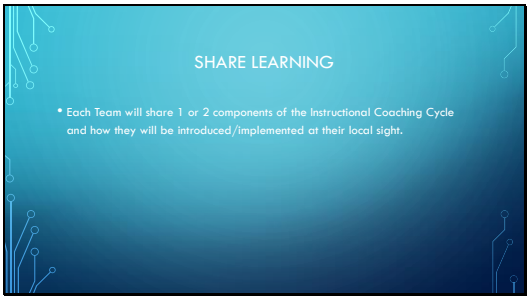

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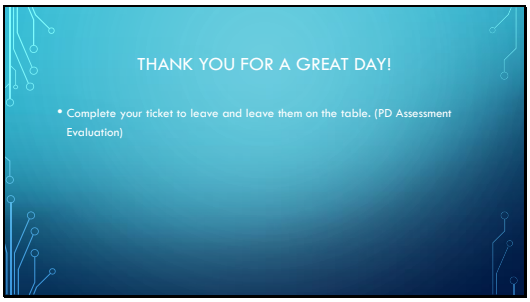

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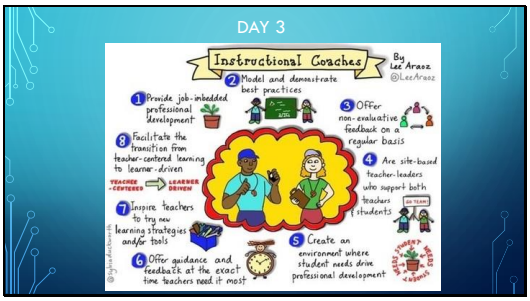

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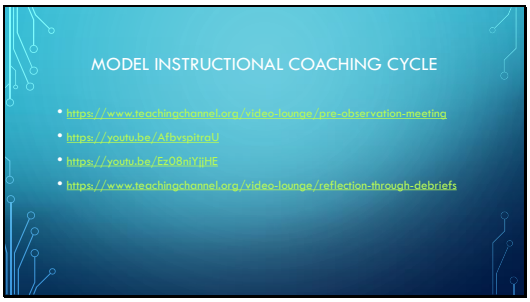
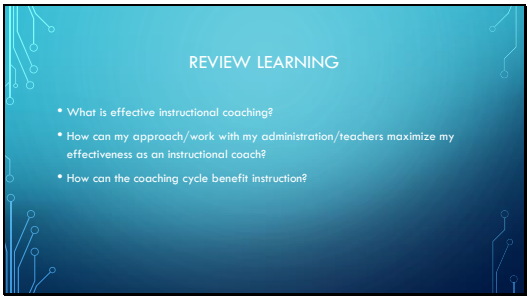
Slide 42



Slide 43

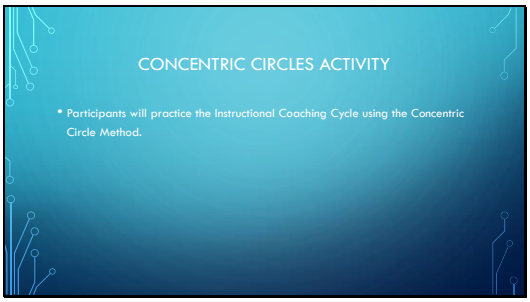
15 minute break.

Slide 44



At your tables discuss these questions. A group anchor chart will be created with the shared responses.

Slide 45



Slide 46

Dismissal for Lunch. Explain that lunch will be own your own and we will resume at 1:15 p.m.

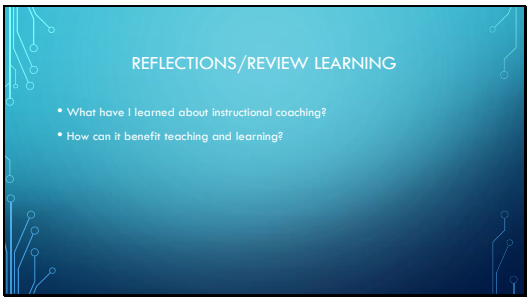
Slide 47

Participants will be provided 30 – 40 minutes to review virtual PLC examples, formulate Virtual PLC groups, create a timeline/schedule, and establish group norms.

Slide 48

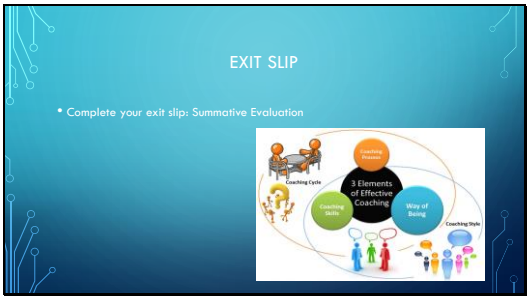
15 minute break.

Slide 49



Lead the discussing in the reflection and review of learning. Encourage participants to answer write their responses to each questions. Then Turn-in-Talk to their elbow partners. Finally, volunteers will hare with the group their final thoughts. Provide 2 – 3 minutes for each stage.

Slide 50



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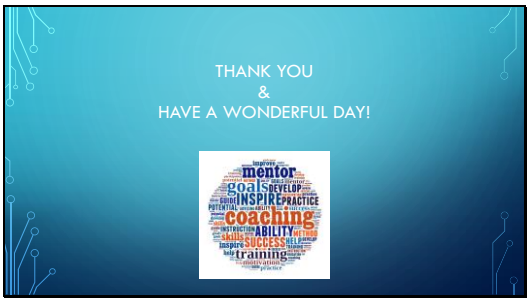


Appendix B: Teacher Interview Questions

Participant: _____
Date::_____

Place: _____ Time: _____

I would like to thank you for volunteering to participate in this study. This interview will last approximately 45 minutes and will be taped for accuracy. The purpose of this interview is to explore the perceptions and experiences of middle school math teachers about the role of instructional coach in supporting math instruction at the local setting. Your participation is voluntary, and you may stop at any time. Your responses will remain confidential as well as your identity, school, principal, and school district. Please elaborate on specific details during the course of the interview. Please be candid, honest and accurate in your responses. Are there any questions?

1. What is the role of the math instructional coach?

2. How does your instructional coach support you?

3. How has the instructional coach changed your role as a teacher?

4. Describe the influence of having an instructional coach at the middle level has had on the school?

5. How involved is the instructional coach in monitoring the progress of school professional goals?

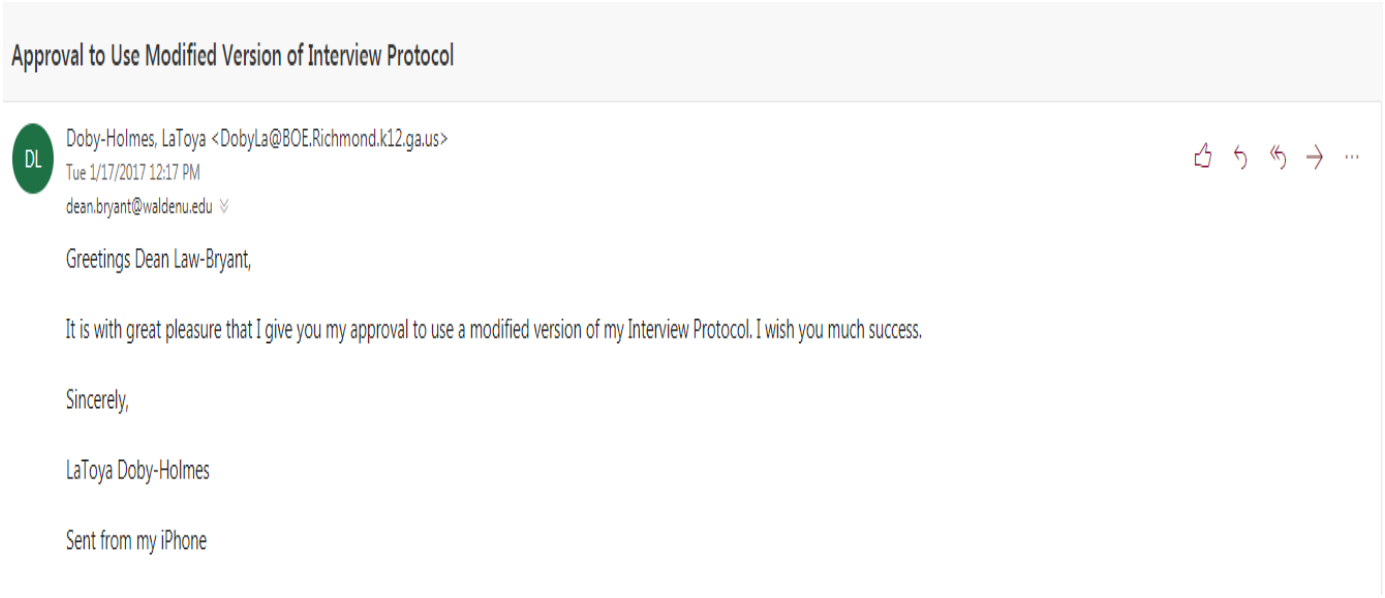
6. How does the instructional coach assist with the academic performance of students?

7. What influence has the instructional coach had on fostering professional development?

8. What would be different if there was not an instructional coach at your school?

9. Is there anything else would you like to share with me regarding instructional coaches in general or specifically about your instructional coach and the influence he/she has had on your implementation of research-based instructional strategies as a means to increase student achievement?" In your classroom? In your school? In your district?

Appendix C: Permission to Use Interview Protocol



Approval to Use Modified Version of Interview Protocol

DL

Doby-Holmes, LaToya <DobyLa@BOE.Richmond.k12.ga.us>
Tue 1/17/2017 12:17 PM
dean.bryant@waldenu.edu

Greetings Dean Law-Bryant,

It is with great pleasure that I give you my approval to use a modified version of my Interview Protocol. I wish you much success.

Sincerely,

LaToya Doby-Holmes

Sent from my iPhone