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Middle School Principal Perceptions of Instructional Coaching Effectiveness on Mathematics Teacher Performance

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Walden University
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Abstract

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Jaimie Carin Foster

MAT, University of Pittsburgh, 2001

BS, Tuskegee University, 1999

Doctoral Study Submitted in Partial Fulfillment

of the Requirements of the Degree of

Doctor of Education

Administrator Leadership in Teaching and Learning

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Abstract

In middle schools in central Pennsylvania, instructional coaching has increased as a job-embedded professional development to support teachers in increasing their capacity and performance. The local problem was middle school principals were unsure of the effectiveness of their instructional coach on mathematics teacher capacity and performance. The purpose of this study was to explore middle school principal perceptions of the effect of instructional coaching on mathematics teacher performance. This study was guided by the social constructivist framework, which considers learning a unique sense-making experience filled with opportunities for self-reflection and growth. The research question focused on how middle school principals perceived the effect of instructional coaching on mathematics teacher performance. A basic qualitative design was implemented to capture the perceptions of four middle school principals, identified by convenience and snowball sampling methods, through semistructured interviews. Emergent themes were identified via axial coding, and findings were developed and examined for validity and credibility through member checking and a peer debriefer. The findings revealed participants perceived instructional coaching to be effective on mathematics teacher performance yet, did not implement it with consistent structures to maximize the effectiveness. From these findings, a principal-centered professional development was designed, focused on the foundations of instructional coaching to prepare principals to effectively implement and evaluate its success. This study has implications for positive social change as the new professional development will allow opportunities for principals to partner and collaborate in order to make new learning more powerful and a safe space to grow.

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Dedication

I dedicate this study to my family and my village—it is because of you I am now able to occupy this rarified air of the doctoral world. My family, bound both by love and by blood, is what drives me to greatness. Your support, kindness, and encouragement are what kept me going, even when I did not want to go any further.

To my amazing young king in the making, Morgan. It is my life's reward being your mother. You are my greatest accomplishment by far, and always be. I want you to know life is filled with wonderful possibilities—anything you put your mind to, you can and will do. You have taught me so much about myself: how to stand tall and strong in who I am, just like you do. I will always be by your side, cheering your on, and loving the wonderful young man you become.

To the brilliant women who inspire me and are my most fearless supporters, I thank you for being in my corner since the day I came into this world. To my mother, Charlotte Foster, I am grateful to God for choosing you to be the giver of my life. I am the woman I am because of your prayers, tenacity, and never-ending and never-yielding motivation. To my magnificent aunt, Elizabeth Summers, I am forever thankful for your constant cheerleading and nonstop reassurance that I could complete this journey. My village is complete with you and my uncle in it. My son is blessed with you in our lives.

Lastly and most importantly, to my Lord and Savior Jesus Christ, I thank you for this gift. Short of salvation and the birth of my son, this doctoral degree means the world. I shall forever be a witness of your greatness, grace, favor, and mercy.

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And lastly, to the principals who allowed me to capture their perceptions of instructional coaching. I thank you for your openness and insights of this phenomenal strategy used to make teaching reach the greatness it can be for every educator you lead. Short of your participation, this study would have never been completed.

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Section 1: The Problem

Introduction

Teachers of all content areas need quality, daily professional development, with on-site support for planning, coaching, and research opportunities to offer effective ways to find and increase knowledge on current teaching and learning trends (Desimone & Pak, 2016). Through these types of opportunities, teachers learn to devise instruction which fosters students to become critical thinkers and performers (Dunst, 2015; White, Howell-Smith, Kunz, & Nugent, 2015). The implementation of instructional coaching, also known as literacy coaching, mathematics coaching, and simply coaching have increased significantly in school districts as a professional development strategy to provide teachers with side-by-side support to implement new instructional strategies and practices, as well as feedback on the implementation of those practices within the walls of their own classrooms (Jacobs, Boardman, Potvin, & Wang, 2018). While a popular strategy for job-embedded professional learning, building principals are often unsure of the influence and effectiveness of their instructional coach (IC) (Jackson-Dean, Dyal, Wright, Bowden-Carpenter, & Austin, 2016). Further, studies within the last 5 to 10 years have consistently examined the influence of coaching mostly from the perceptions of two types of teachers: elementary teachers or reading teachers. Significantly less research has been conducted to learn of the ways coaching can influence mathematics teachers, even less so in middle schools (Polly, Algozzine, Martin, & Mraz, 2015).

Throughout school districts in central Pennsylvania, instructional coaching programs have been implemented to provide job-embedded professional learning to

teachers at all grade levels. As a middle school assistant principal who engaged in informal and formal observations of teachers who work with an IC, I developed several thoughts surrounding the middle school principals' perception of an IC's effectiveness. First, what types of change were noticed before, during, and after a middle school mathematics teacher works with an IC. Second, in what ways did a building principal work with an IC to increase (or decrease) their influence on mathematics instruction in the school. Third, what strategies did a building principal employ if they perceived the instructional coach to be ineffective— in what ways did he or she work with the coach to improve their influence.

Instructional coaching can have considerable effect on teacher efficacy and performance in literacy, which may affect how coaching affects other core content areas, specifically mathematics. In literacy, the effect of an IC can lead to a rise in the usage of authentic formative assessments, conferencing, and more time writing (Pletcher, Hudson, John, & Scott, 2018). Because this influence exists in literacy, researchers have examined if the effect of an IC could also impact a different content area, particularly mathematics.

In this section, I address the following topics: the study problem, the rationale for the selection of this particular educational dilemma and its significance in the larger context of education, a review of the literature as it pertains to instructional coaching, and the implications of what I discovered from the research questions.

The Local Problem

Middle school principals' perceptions of the effect of instructional coaching on mathematics teacher performance was explored throughout this basic qualitative study. According to the area curriculum supervisor at one of the participating schools in this study, middle school principals struggled at times to measure the impact of their IC to increase the performance of mathematics teachers in their schools. More specifically, according to a middle school principal at one of the participating schools, building principals dealt with two specific issues: ways to clearly and definitively identify concrete links between instructional coaching and improvement in certain components of teaching (i.e., questioning techniques, usage of inquiry/discovery/exploratory instructional strategies, etc.) and ways the coach effects long-term change in middle school mathematics instruction. Johnson (2016) stated administrators tended not to have the background or experience to best implement instructional coaching as an effective professional learning strategy in their schools.

According to another principal participating at one of the participating schools, as recently as the 2018–2019 school year, building principals were perplexed regarding what data to collect to ascertain the influence of instructional coaching on math teacher capacity, whether through informal or formal classroom observations, interviews or surveys with staff, or end-of-year evaluations. In the Wyoming study of instructional facilitator relationships with teachers and principals, Range, Pijanowski, and Duncan (2014) reported principals relied heavily on instructional coaching to serve as formative, non-evaluative, and non-threatening supervision of teachers to increase their capacity in

schools. In addition, the principals wanted to engage in formative supervision of mathematics teachers as well.

According to the area curriculum supervisor in one the middle schools participating in this study, an IC coach either works with teachers in all content areas, struggling teachers, or those new to teaching; there are mathematics teachers who fall into each of these distinct areas In addition, the area curriculum supervisor noted improved scores on the end-of-course mathematics Pennsylvania System of School Assessments (PSSA) exam were not evident in all the schools. Sailors and Price (2015) described this uneven success regarding the effectiveness of instructional coaching on student outcomes.

As a continued practice during the 2018–2019 school year, ICs in the participating schools worked with teachers, including those who teach middle school mathematics courses, who agreed to participate in instructional coaching, particularly the partnership model designed by Jim Knight (2011, 2018). Moreover, all the coaches employed the before-during-and after (BDA) model (Knight, 2008). In the BDA model, an IC and teacher meet before the observed lesson or coach demonstration to identify explicit areas of focus during the lesson, and then meet after the lesson to discuss the ways in which those foci unfolded. In addition to employing the BDA model with teachers, the coaches in the participating schools are tasked with identical duties of traditional ICs: model best practices in instruction and behavior management; lead professional development for teachers in needed areas of content, pedagogy, and/or behavior management; analyze student data to utilize for future planning; and

collaborative plan lessons to maximize student performance. Overall, these responsibilities are categorized into three distinct areas of instructional coaching duties recommended by research: instruction and organization of its resources, professional development, and the development and maintenance of a professional learning community (Knight, 2011, 2018).

ICs who work in the participating schools of this study received most of their training from the local intermediate unit, learning a variety of coaching, instructional, and behavioral management strategies to employ with struggling teachers, new teachers, and resistant teachers, regardless of the coached teachers content area. However, according to the area curriculum supervisor at one of the participating schools, there have been no occasions when the IC and principal engaged in training together to calibrate effectiveness, strategies, or other areas. Engaging in professional learning is in line with the capacity-building suggestions offered by Irvine and Telford (2015) to provide ongoing training in effective ways to work with adult learners. According to a middle school principal at one of the participating schools in this study, while ICs are charged with significant responsibilities to improve teacher capacity, building principals are still looking to clearly identify firm ways in which their work increases middle school mathematics teacher performance.

Rationale

Evidence of the Problem at the Local Level

Mathematics PSSA data for 2017–2018 (www.education.pa.gov) revealed most of the middle school students (Grades 6–8) across the state continue to perform at basic and

below basic levels. In Grade 8, 68.9% of students earned a score of basic or below basic. In Grade 7, 61.1% of students earned a score basic or below basic. Students in Grade 6 performed the best of the three grades; 60.4% of students earned a score of basic or below basic. In the school districts represented by this study, the student performance is similar: nearly 60% of students in Grades 6-8 earned a score of basic or below basic on the 2017–2018 PSSA. This student performance was nearly identical to the student performance over the last 3 school years, when the mathematics PSSA aligned to PA Core State Standards in 2015. In 2017, 62% of students in Grades 6-8 earned a score of basic or below basic. In 2016, 67% of students in Grades 6-8 earned a score of basic or below basic. In 2015, 68% of students in Grades 6-8 earned a score of basic or below basic.

In the four middle schools participating in this study, the principals were impressed with the overall work and skills of the ICs assigned to their schools. According to a middle school principal at one of the participating schools, teachers, administrators, and central office administrators described an overall positive influence ICs only teacher performance and capacity as well as on school culture and climate in raising student achievement. The influence of a coach on instruction, school culture, and the practices of teachers can be profound (Zoch, 2015). From the mixed methods study of Hathaway, Martin, and Mraz (2016) on literacy coach effectiveness in Minnesota, the findings indicated the literacy coaches were instrumental in improving teachers' ability to self-reflect to recognize limits and deficiencies in teaching as well as developing strategies to address these areas.

At the same time, the ICs in the participating schools have had limited effects on mathematics teacher performance, for a variety of reasons, each which may impact how principals perceive their effectiveness. According to the area curriculum supervisor at one of the participating middle schools, each of the middle schools have experienced teacher turnover (losing three to four mathematics teachers each year, approximately one-third to one-half of the entire mathematics teachers on the school roster), and student mobility has increased over the last several years than previously seen. Teacher and student mobility, as well as a lack of shared vision in student capabilities to master content, were identified as several factors affecting the influence a literacy coach can have in improving teacher effectiveness (LaPierre, 2017). Because of the turnover experienced in the schools, ICs struggled to meet coaching needs expressed by new teachers, and possibly impact mathematics teacher performance. If a teacher is not effective in communicating his or her needs when engaging in coaching experiences, coach-teacher interactions may lack value (Leubeck & Burroughs, 2017). For example, a teacher may not allow an IC to analyze student data with them or may limit analysis to a review of student scores, with no time allotted for brainstorming on how to alter practice. Further, Toll (2018) explained some ICs may doubt their abilities to produce change in teachers because of the lack of training they received prior to taking on the coaching role. Schacter, Webster-Mayrer, Piasta, and O'Connell (2018) explained this lack of confidence may cause ICs to rely heavily on providing teachers with resources and information, rather than embedded support, to drive teacher change. All these issues may also impact a principal's perception on the effect of the IC in his or her school as well.

In the participating schools of this basic qualitative study, an issue which also may have impacted the principal's perception of IC effect were the ways in which the IC allocated his or her time throughout the school day. Effective coaching is a structured process, and includes time for the coach and teacher to pre- and post-conference after visits, co-plan for lessons, and discuss critical issues seen to impede growth in teacher capacity and student performance (Yeigh & Rigelman, 2019). Effective usages of time are what many researchers discovered about instructional coaching, teacher performance, and student achievement.

In schools where an IC spent more time coaching than other duties, students were significantly more proficient in literacy and mathematics achievement (Kraft, Hogan, & Blazar, 2018). Kane and Rosenquist (2019) noted in the findings of their mixed method study examining the relationship between coach use of time and district or school-level expectations and policies, an ICs allocation of time can vary greatly depending on the hiring structure of the program. An IC hired at the district level had more time in classrooms due to the policies standardizing time to spend with teacher across schools. On the other hand, an IC hired at the school level spent more time engaged in administrative duties than the classroom, possibly due to varying policies and expectations from building principals. This influx in time spent with teachers could have had a major bearing on teacher efficacy and student performance over time. Knight's (2006) survey of 300 instructional coaches determined that being able to spend sufficient time in classrooms was the number one concern when detailing factors affecting the inability to complete their jobs with fidelity.

Evidence of the Problem from the Professional Literature

The focus of my study, middle school principals' perceptions of the effect of instructional coaching influence on mathematics teacher performance, has been discovered to be a similar focus in professional literature as well. Learning more about the ways in which principals perceived instructional coaching was a quandary in a rising number of school districts, particularly because of the considerable usage of instructional coaching as a professional development strategy to elevate teacher performance (Snyder, 2017). Instructional coaching effect has been studied in several ways, with most studies focused on the perception of the IC, the coached teacher, or changes in student achievement/growth. Kennedy (2016) studied the effect of literacy coaches in literacy collaborative classrooms over a 3-year period. By the end of the third year of the study, students taught by teacher working with a coach learned an average of 38% more content and skills than their peers whose teacher did not work with a coach. Blazar and Kraft (2015) conducted a 2-year study of the impact of a coaching program on a variety of teacher practices, such as instructional delivery and student achievement. While the study results indicated coaching had no overall impact on teacher practices, certain ones were influenced. Teacher practices like *achievement of lesson aim*, *behavioral climate*, and *learn a lot* were statistically significantly different when compared to the control group. Hopkins, Ozimek, and Sweet (2017) studied how a midsized suburban Midwestern United States school system offered support to 14 elementary schools involved in mathematics reform—instructional coaching was one of the supports provided at each school. Hopkins et al. discovered ICs can be effective in brokering new

curriculum initiatives and can tailor support to teachers in need that best suits their needs. Further, ICs influenced classroom teaching by being a resource for ideas, feedback, planning, and curriculum implementation fidelity.

Swars, Smith, Smith, Carothers, and Myers (2018) offered a number of skills and insights mathematics coaches should possess to be successful in their work with teachers: conceptual understanding of mathematics content; an ability to develop and implement student-centered practices; encouraging problem-based instruction over skills-based instruction; an ability to read, analyze, and devise next steps from student assessment data; and supporting effective feedback to increase teacher capacity as well as student mastery and growth. Swars et al. indicated these skills and insights may or may not be readily identified in mathematics coaches or an IC who work with math teachers, which can affect their coaching impact on a middle school mathematics teacher's performance, as well as the perception a middle school principal has of that coaching effect. For some ICs, it can be frustrating when their plan of action for a targeted teacher was not followed or put into practice with fidelity. This frustration at times can lead to an IC deciding to not work with that teacher any longer. For other ICs, they are flexible but do not possess a large enough mathematical pedagogical repertoire to allow for multiple strategies to be applied in a targeted teacher's classroom issue. Because of this, targeted mathematics teachers may quietly (and sometimes not as quietly) recommend to fellow colleagues to decline the assistance of the IC, or limit the assistance to nominal tasks or areas of help, such as making copies, helping with seating charts, or creating bulletin boards. These

types of tasks can also limit the effect of an IC on raising a mathematics teacher's performance, and thus indirectly influence the principal perception of the IC impact.

Uneven effectiveness of instructional coaching on teacher performance is not limited to middle schools, uneven effectiveness of instructional coaching was also an area of concern in elementary schools, despite studies indicating IC impact at the elementary level. Campbell and Griffin (2017) analyzed the effectiveness of an elementary mathematics professional learning program. The program, which was a combination of workshops and job-embedded professional activities (i.e., instructional coaching), spanned two different cohorts of teachers, each with 2 years' worth of coaching support. In both cohorts, coaches spent nearly 40% of their time engaging in activities unrelated to providing direct coaching or preparing to coach. When correlated to days of the week, this equated to an IC spending 2 days per week not coaching.

The purpose of this basic qualitative study was to explore middle school principal perceptions of the effect of instructional coaching on mathematics teacher performance. Johnson (2016) stated principals are increasingly employing instructional coaching as a professional learning strategy to work with all types of teachers: novice, veteran, struggling, excelling, and content specific. Because of this, it was critical for middle school principals to qualify the effect of instructional coaching on a teacher, and as it related to this study, its effect on mathematics teachers. This ensures all involved in the instructional coaching process—IC, coached teacher, and middle school principal—can work together to strategize concrete ways to increase teacher capacity while instructing middle school mathematics, and growing student achievement.

Definition of Terms

Instructional coaching: is a "a non-evaluative, learning relationship between a professional developer and a teacher, both of whom share the expressed goal of learning together, thereby improving instruction and student achievement" (Knight, 2006, p 36). For the purpose of this study, a *learner* is the term used to describe teachers who work with an instructional coach. (Kennedy, 2016).

Professional development: in this study is defined as any activity designed to enhance an educator's efficiency in their job function (Nguyen, 2019).

Teacher efficacy: involves a "teachers' beliefs about their own capacities as a teacher to influence students' abilities and motivations to learn" (Tschannen-Moran & Barr, 2004, p. 190).

Significance of the Study

Through interviews conducted with four participants, I gained insight into the ways middle school principals perceived the effect of instructional coaching on mathematics teacher performance. As I explored principal perceptions of the effect of instructional coaching on mathematics teacher performance, I discovered a greater understanding of how this job-embedded strategy is utilized by building administrators. I used the data I gathered to obtain a greater awareness of how building principals strategize ways to effect middle school mathematics teachers' instruction and methods to achieve student success.

Research Question

Past research on the influence of instructional coaching has often been limited to one content area and school grade, typically reading in elementary schools. Researchers are just beginning to examine and explore how mathematics coaching initiatives impact teacher capacity and student achievement, trailing behind the implementation of such programs in schools (Hopkins, Ozimek, & Sweet, 2017). In addition, building principals had significant say into the ways in which instructional coaching is utilized in their schools, which may have included duties not related to supporting instruction (Johnson, 2016). Further, few studies identified the perceptions of building principals regarding the effect of instructional coaching.

The problem I explored in this study was the challenge middle school principals had assessing the effectiveness of their instructional coach to increase the performance of mathematics teachers in their schools, particularly beyond student performance on the state mathematics assessment. In addition, building principals were perplexed with what data to collect to ascertain the influence of instructional coaching on math teacher capacity, whether through informal or formal classroom observations, interviews, or surveys with staff, or end-of-year evaluations. I used the following research question to guide the study: How do middle school principals perceive the effect of instructional coaching on middle school mathematics teacher performance?

Review of the Literature

The literature review section includes further context around the principal perspective of and role in instructional coaching, current instructional coaching practices,

and the history of teacher development methods. In addition, I defined and discussed the conceptual framework guiding this study, social constructivism. Subheadings within this section signify emerging relevant areas which arose from a deeper dive in the literature. The subheadings include: principal perspective of instructional coaching, principal role in instructional coaching, the usage of instructional coaching in mathematics, the usage of instructional coaching in other content areas, instructional coaching models, concerns with instructional coaching, instructional coaching practices, and professional learning communities. In order to reach a saturation of literature review, I used specific search terms, including: *instructional coaching, instructional coaching and principals, coaching and principals, principals, professional development and influence, coaching and building administrators, instructional coaching and administrators, instructional coaching and professional development, instructional coaching and mathematics, instructional coaching and middle school mathematics, instructional coaching and secondary mathematics,* and *instructional coaching and teacher capacity*. I searched several education databases, including Education Resource Information Center (ERIC), Education Complete, ScienceDirect, and Education from SAGE. I reviewed peer reviewed articles and books by searching their topic and abstract respectively, to conclude if the article or book was appropriate to strengthen the literature review. Once this occurred, I conducted a more extensive review of the source, with a review of its participants, setting, results, and further implications for research.

Conceptual Framework

Knight (2006) defined instructional coaching as "a non-evaluative, learning relationship between a professional developer and a teacher, both of whom share the expressed goal of learning together, thereby improving instruction and student achievement" (p. 36). Tonna, Bjerkholt, and Holland (2017) described instructional coaching as a strategy that focuses on collaborative inquiry. Rouleau (2017) described an instructional mathematics coach (also known in some school districts as a mathematics specialist, lead teacher, or support teacher) as one with significant comprehension of mathematics content who is responsible for providing professional learning activities meant to increase a teacher's understanding of mathematics content and skills.

Coaching teachers have a variety of backgrounds, experiences, beliefs, and attitudes, and instructional coaching is rooted deeply in constructivist theoretical frameworks (Sad, Kis, & Demir, 2017). Each teacher has their own understanding of what the work with the coach entails in improving as an educator and elevating student success. Von Glaserfeld (1995) considered this type of unique experience and sense-making as the core of constructivist education (Sad et al., 2017). These unique, self-sense making experiences— such as looking at student work, observations with feedback, collaborative lesson planning, and co-teaching—allowed for teachers' professional learning and growth to be done through authentic and meaningful opportunities to judge, critique, organize, and interpret successes and failures with a coach. These collaborative experiences are couched in constructivism because they lend themselves to significant

self-reflection to occur, as the educators often figure out their strengths and weaknesses in isolation (Sad, Kis, & Demir, 2017).

Lodico, Spaulding, and Voegtle (2010) argued constructivism views inquiry as value bound. Tuli (2017) stated that teachers must participate in ongoing professional learning that is relevant and of quality to make an impact on student learning. Genuine learning takes place when it occurs in a contextual setting, collaboratively with others, and in meaningful ways (Vygotsky, 1978; Knight, 2009). Gibbons and Cobb (2017) offered five characteristics of high quality professional learning, of which the top two characteristics were engaging teachers in activities which relate closely to their daily work and activities which allow for teachers to collaborate in ways to establish common discourse and thinking. Klein, Walter, and Riordan (2015) explained educators must go through three phases in order for professional development to permeate instructional practices and raise teacher capacity: learning new information, time to unlearn old assumptions, and time to relearn new behaviors. Instructional coaching has revolved around teachers establishing a personal meaning of their work within their classroom. This has permitted new ideas, couched in the context of applicable content, to be implemented with greater fidelity. Kakana and Mavidou (2019) argued learners must be able to interact with peers and other connoisseurs of professional learning to solve their teaching-related problems. Further, collaboration amongst teachers was largely identified as an effective approach to increase teacher capacity and growth (Jao & McDougall, 2016). In the social constructivist context of instructional coaching, this occurred daily

through numerous teacher-coach interactions: co-planning, co-teaching, reflective conversations, and so forth.

Further, instructional coaching provides for personal meaning to be discovered by teachers through recognizing and understanding when they are ready, willing, and reflective on their journey to become an effective and accomplished educator, one who is proactive in decision-making and initiative for their growth and student achievement. In their study of teacher agency in professional development and school reform, Imants and Van Der Wal (2020) described teachers who practice agency as those who "take initiatives act proactively rather than relatively, and deliberately strive an function to reach a certain end" (p.2). Through the lens of social constructivism, the accomplished teacher is one who is aware of their self-efficacy through the multitude of experiences they have been involved in that required confrontation of some obstacle, to achieve growth and new learning. When a person has a strong sense of self-efficacy, they have faith in their own capabilities and abilities to utilize them accordingly in order to overcome challenges—with assistance and tenacity, they can eventually be overcome (Tetrik, Çetin, Kaymak, & Kaşikçi, 2018).

To shift a teacher from low or moderate self-efficacy to one who has high self-efficacy requires an IC to create, monitor, and demonstrate activities and processes with teachers that allow for genuine reflection, thinking, and understanding of how and why certain instructional and/or behavioral management approaches were successful and were not. In a qualitative multicase study of adult experiences with online professional development (Powell & Bodur, 2019), social constructivist and adult learning theories

were applied to learn of social studies teacher perceptions regarding the design and implementation of a commercial online professional development platform. Teachers viewed 10 25-minute videos and responded to three open-ended reflective questions over several planning periods. Findings from the 60–90 minute interviews indicated most participants perceived the experience to be relevant to their teaching, authentic to what they engage in with students during social studies classes, and desiring to collaborate with others to reflect on their new learning. Coaching through the constructivist framework requires the IC to place and maintain the focus of coaching interactions on the teacher and their learning, not the instructional coach themselves (Campbell & Griffin, 2017).

The purpose of this basic qualitative study, which was to examine middle school principals' perceptions of the effect of instructional coaching on mathematics teacher performance, was aligned to the social constructivist framework. Merriam and Tisdell (2016) stated a basic qualitative study is executed to discover and understand the meaning of a phenomenon (in this case, instructional coaching). In this basic qualitative study, the meaning middle school principals make as their perception is shaped around instructional coaching effectiveness. As there is little empirical research describing the effect of instructional coaching in middle school mathematics, or the ways in which administrators identify that effect, this project study has the potential to advance the education field knowledge base on this phenomenon. Learning of the ways in which middle school principals' perceptions are molded from interactions with the school IC may offer further insight into the effect of instructional coaching on middle school

mathematics. Merriam and Tisdell (2016) described a basic qualitative study as qualitative research not bound by a specific type of qualitative study; in essence, a study to learn the real meaning of the participant(s) involved in the phenomenon, experience, or activity. Learning how middle school principals have had their perceptions shaped by their experiences with their IC offers greater understanding into the nuances of an instructional coach's influence on middle school mathematics and ways in which to note such influence.

Principal Perspective and Role in Instructional Coaching

Principals have tremendous impact on teacher capacity. In order for this impact to become lasting, as well as translate to student achievement, principals are expected to provide formative, constructive supervision to teachers throughout a school year to achieve such results (Mayfield, 2018; Range, Pijanoski, Duncan, Scherz, & Hvidston, 2014). As principals become more focused on the tenets of instructional leadership, they have a significant focus on curriculum supervision, improving teacher instruction, and collaborating with staff, and building a strong relationship with the school community (Mestry, 2017). Sebastian, Allensworth, and Huang (2016) determined principals who are effective in impacting teacher capacity did so through intentional use and employment of teacher leaders to work heavily on professional learning, curricular, and school program implementation fidelity. Instructional coaching is viewed as a professional development format in which teacher leaders are heavily involved in influencing and raising teacher capacity; principals play a significant role how this professional development format is accepted in schools (Henwood, 2013). Principals are

considered to be key in facilitating peer learning opportunities for teachers (Kraft & Gilmour, 2016) the perspectives and their role(s) in instructional coaching are crucial—they significantly influence its effectiveness on teacher capacity (Kraft & Blazar, 2013).

Principal perspective of instructional coaching. Kraft and Blazar (2013) uncovered distinct principal perspectives on instructional coaching through a mixed methods study. When asked to rate teacher overall effectiveness of teachers who received instructional coaching compared to those who did not in the study, coached teachers were ranked higher than teachers who participated in traditional workshop style professional learning activities. Specifically, principals considered instructional coaching to be most influential on teachers' ability to maximize use of time during the class period and on their classroom management skills. Henwood (2013) indicated principals consider instructional coaching to be a tangible way to advance a school's mission and vision while still meeting the needs of teachers for professional learning. Further, principals indicated instructional coaching allowed for teachers to attempt new pedagogical and management strategies without doing so as a directive, rather, through personal leadership, collaboration, and personal responsibility. In addition, principals with effective instructional coaching programs indicated "improved school performance; improved employee and motivation; increased employee productivity (particularly through developing soft skills; and the creation of cultures and environments that promote loyalty, with a reduced staff turn-over" (p. 12). In a Q methodology study of 34 North Carolina building administrators by Brown and Militello (2016), over half indicated professional learning experiences which were sustained, collaborative, and

allowed for follow-up were most effective in schools, with instructional coaching listed as one of the professional development strategies that met these criteria.

Principal role in instructional coaching. The principal's role in instructional coaching is one that is critical in not only ensuring instructional coaching is effective in a school, but also collaborative, one of trust (with both the IC and the coached teacher), supportive, and opportunistic to establish a culture in which continuous learning is expected, encouraged, and demonstrated first hand (Range et al., 2014). Bean and Ippolito (2016) explained a school with a flourishing instructional coaching program is often led by a principal who is deliberate in creating and maintaining a culture where all teachers and support staff work collaboratively to design, advocate, facilitate, and lead effective teacher change and student achievement. When offering principals advice on ways to support instructional coaching in their schools, Ippolito and Bean (2018) indicated the need for principals to recognize and employ instructional coaches as not only teacher leaders but also supporters of other teacher leaders, in order to distribute instructional leadership responsibility. Because this shared responsibility of instructional leadership is targeted, specific, and focused on the needs of the coached teacher for students to be successful, the principal and IC can function in a collaborative partnership. This allows the principal and IC to discuss essential pieces of feedback a teacher can digest and improve upon over time, as well as allow for the principal to assess coaching effectiveness on teacher change.

In addition to the principal playing a collaborative role in instructional coaching, they are also key in helping teachers utilize instructional coaching as a tool to efficiently

implement both school and district initiatives for improvement in student achievement. Matsumura and Wang (2014) completed a qualitative study regarding a principal's ability to make sense of high stakes literacy initiative. They found teachers engaged in school and district initiatives with an IC with greater fidelity when a principal allowed for time, space, and public endorsement of the benefits of coaching to meet capacity and achievement targets. Further, when a principal publicly endorsed an IC for these types of initiatives, the endorsement served as a way in which a positive school culture was established to encourage embracing and risk taking to attempt more challenging and rigorous instructional strategies. This endorsement typically came when a principal realized their need to have a firm understanding of what instructional coaching was, and the prospects it created for teacher capacity to improve.

In addition, the principal plays a vital role in an IC understanding the overall pedagogical, content, and management needs of the school, as well as the role of the he or she plays to meet those needs. In a quantitative study of Pennsylvania principal on the perceptions of specialized literacy professional roles, Bean, Dagen, Ippolito, and Kern (2018) stated principals identified data analysis with the IC as one of three leading responsibilities in the school, followed by creating and executing professional learning for teachers. As a principal is more transparent with an IC about the needs of the school and their needs, the clearer the role and work of the IC is (Bambrick-Santoyo, 2013). Moreover, Ippolito and Bean (2018) found an IC is more successful in a school when the principal and the coach meet regularly to discuss the goals achieved by the IC with

teachers, teachers and/or content areas in need of more or less coaching, and the needed resources the principal can provide to grow teachers and coaching in the school.

Current Instructional Coaching Practices, Uses, and Concerns

Instructional coaching has numerous qualities over other professional development approaches; it is ongoing, in-the-moment, intense, and allows for a translation of theory to practice in real time (Gomez, Kagan, & Fox, 2015). It allows for deep pedagogical interactions between a teacher and an experienced colleague in the safety of their own classrooms (Zugelder, 2019). Coaching permits for differentiation of professional learning strategies for teachers with varying skills and content knowledge, as well as solidify new strategies learned in traditional professional development workshops. Also, it is evidence-based, so the effectiveness of an IC can be measured in both lesson planning as well as in the execution of that lesson. Further, content teachers who participate in instructional coaching also have a greater sense of a deep understanding and mastery of their respective discipline. (Gibbons & Cobb, 2017). Coaching also seems to provide confirmation and affirmation to improvements made in teaching, helping teachers make connections from a single occurrence in the classroom to the instruction and impact they have on all of the students they instruct. (Wang, 2017).

The usage of instructional coaching in mathematics. Since 2014, several studies have attempted to measure the effect of instructional coaching on mathematics teachers, mostly at the elementary level. Luebeck and Burroughs (2017) described a positive correlation between an ICs self-assessment of effectiveness and a teacher's self-efficacy, the greater the effectiveness of the coach, the higher feelings of teacher self-

efficacy and use of standards-based instructional strategies. Glassmeyer and Edwards (2016) explained the changes in middle school teacher mathematical content knowledge after engaging in a 2-week professional development project followed up with two months of coaching. Prior to the project, nearly all 19 participating teachers described algebraic reasoning from a procedural standpoint, rather than a conceptual one. At the end of the two weeks, the middle school mathematics teachers began to think of algebraic reasoning as mathematics which requires "conceptual knowledge to solve problems using multiple solutions, solution strategies, or representations" (p. 92).

At the same time, instructional coaching programs involving mathematics teachers can have its challenges. Luebeck and Burroughs (2017) explained the ICs struggled significantly on the best coaching approaches to employ in a variety of critical instructionally-based areas: working with a resistant mathematics teacher, examining student work, adjust coaching goals, and collaborating with administrators. Campbell and Griffin (2017) stated when math coaches were assigned duties beyond their regular coaching assignments, it led to less time to influencing the school's mathematics program and student performance. In a study of the effects of instructional coaching on middle school reading, mathematics, science, and social studies in identified middle schools in south Texas, sixth, seventh, and eighth grade students who were taught by a teacher not involved with instructional coaching outperformed their peers who were taught by a teacher involved with in instructional coaching (Garcia, Jones, Holland, & Mundy, 2013).

The usage of instructional coaching in other content areas. Multiple studies provide evidence of an upward trajectory seen in literacy teachers' practice when

opportunities to collaborate, solve problems, be observed, receive feedback, and reflect are provided. LaPierre (2017) cited the works of Walker-Dalhouse, Risko, Lathrop, and Porter (2010) regarding the ways that coaching conversations (opportunities for teachers to reflect on lessons, plan, or discuss other teaching-related matters with a coach) offer teachers a chance to reveal a need for specific skills. Walker-Dalhouse et al. stated these types of revelations were helpful for particularly for secondary grade teachers, who struggled with students not mastering concepts and/or skills taught in lower grades. In a meta-analysis of the causal evidence of 60 studies involving instructional coaching, teacher practice, and student achievement, Kraft, Blazar, and Hogan (2018) found coaching had an independent, positive effect on student achievement. The impact of coaching on student achievement was described as comparable or greater than approximations of "the degree to which teachers improve their ability to raise student achievement during the first five to 10 years of their careers" (p.569). Mangin and Dunsmore (2015) described a mixed-methods study on the relationship between literacy coaching and primary students' reading gains that teacher that for every hour spent conferencing with a literacy coach, a student had the potential to earn nearly 19 points higher on the DIBELS reading assessment than a student whose teacher did not conference with a literacy coach. Their study also revealed teachers who spent time engaging in reflection, data analysis, and observing model lessons also taught students that earned at least a five-point higher score on DIBELS compared to teachers not engaged in those practices.

Further, it has also been noted literacy teachers who work with a coach are often more willing to try new instructional strategies, due to support and guidance from a non-evaluative staff member of the school. In a mixed- methods iterative study of literacy teachers, new and veteran teachers described their desire to implement new strategies to improve content, pedagogy, and/or behavior management. Teachers described having more of a range of practices and procedures to implement because of the additional support of a colleague in the classroom with them (Shernoff, Lekwa, Reddy, & Coccaro, 2017).

Instructional coaching models. Numerous instructional coaching models are implemented in schools, including gradual increase in responsibility (GIR), side-by-side, change, technical, and peer coaching. One of the most common models used is the GIR model. Collett (2012) as cited by Robertson, Ford-Connors, Frahm, Bock, and Paratore (2020) described the GIR instructional coaching model where the IC develops collaborative experiences that gradually increase teachers' responsibility in implementing effective instructional strategies in the classroom. Additionally, the model allows teaches to gain an increased sense of accountability through targeted opportunities to learn new approaches, implement them, receive corrective feedback, refine, and then implement again. Robertson et al. explained teacher agency grew over time as their responsibilities increased. Teachers became appreciative of the opportunity to grow as their knowledge and application of effective instructional practices and strategies increased.

The side-by-side coaching model has been used as an additional professional learning strategy to strengthen the learning from isolated professional development

training. Goodnight, Wood, and Thompson (2020) carried out a mixed methods study with kindergarten teachers to examine the degrees to which the a 1-day training when combined with side-by-side coaching improved the use of research-based beginning reading strategies compared to receiving the 1-day training as standalone professional learning. Teachers who participated in both the 1-day training and side-by-side coaching expressed the coaching was helpful in their continued and sustained use of the research-based strategies. In a 4-year study of instructional mathematics coaches work with middle school educators (Gibbons & Cobb, 2016), side-by-side coaching was the primary coaching model utilized. The teachers involved in the study described their experiences as critical when negotiating "a goal for instructional improvement and a plan for how to proceed" (p.254). Through observations of coaching interactions and of teachers after the 2-week coaching cycle was complete, as well as interviews with the early childhood teacher participants, the usage of math mediated language increased by nearly 40% when the training was followed up by side-by-side coaching compared to just the training alone. When compared to the baseline observation (prior to the math mediated language training taking place), teachers' usage of math language increased by nearly one hundred twenty percent when coupled with a two-week coaching cycle. Akhavan (2015) studied various coaching models to learn which are optimal in raising teacher efficacy. From her case study, she identified side-by-side coaching as the model which increased teachers' willingness to take risk, try new practices, and to do so without fear of judgment.

Peer coaching has been recognized as a common coaching model, from the 1980s and 1990s, through the work of Joyce and Showers (Sailor & Price, 2015). According to

Sailors and Price (2015), in peer coaching, the "coach" is not necessarily an actual person in the school. Teams of teachers may agree to be peer coaches to each other, to provide job-embedded professional development on an instructional or management strategy. When pairs of teachers are observing each other, whoever is teaching is considered the "coach"; whoever is observed is the one being coached. Peer coaching differs from others in that verbal feedback is not provided, due to the observer being the one receiving the coaching, unlike other models.

Another model of instructional coaching, technical coaching, was initially implemented to be a companion to peer coaching, with a teacher taking on the formal role of a coach, rather than a group of teachers working together. According to Kurz, Reddy, and Glover (2017), in the technical coaching model, the coach works with teachers with four foci in mind: practice new strategies more frequently and appropriately to develop greater skills; retain knowledge about new strategies for longer periods of time; teach the strategies to students; and to have more clarity around the purpose and application of the strategy. A more evaluative model than other models of instructional coaching, its employment in schools has been scaled back significantly over the years, in order to better promote collegiality and professional dialogue between the coach and teacher.

Concerns with instructional coaching. While considered a promising professional development strategy, concerns surrounding instructional coaching have mounted, in both its long-term effectiveness across content areas and in articulating what constitutes an "effective" coach. One significant issue is the ability for an IC to self-manage; to be able to spend most of the duty day interacting with teachers in the

classroom during instruction. From the literature, this issue manifests itself in ICs completion of non-instructional tasks throughout the day, like substituting for absent teachers, providing coverage for the main office, or copying documents. As these types of tasks can take up significant chunks of time throughout the day, little time may be left for coaches to work directly with teachers (Stoetzel & Shedrow, 2020). This was noted as an issue of teachers working with literacy coaches in Memphis-area schools. The work of the coach was valued, but adherence to their schedule was a concern (Perkins & Cooter, 2013). ICs who may struggle with time may do so because of lack of standardized cohesive, timely, and pragmatic guidelines for them to use a resource (Gargacz, Lannie, Jeffrey-Pearsall, & Truckenmiller, 2015).

In addition to assignment of non-instructional tasks being a concern with coach effectiveness, time management, misplacement in classrooms, and lack of preparation is also a growing worry. ICs in struggling underperforming schools are often juggling support to teachers who engage in high turnover, have limited resources, and are looking for short-term solutions, rather than sustained long-term change (Lesley, Beach, & Smit, 2020). In a case study on the preparation of elementary mathematics specialist-coaches, it was revealed that while overall coaching relationships were positive, the specialist-coach struggled with the necessary analysis and reflection skills needed to move teacher capacity to make consistent and permanent positive instructional change (Campbell & Malkus, 2014; Bengo, 2016).

Instructional coaching practices. Wang (2017) cited the work of Gill, Kostiw, and Stone (2010), in which six elements of effective coaching were identified:

professional relationships, the usage of data and evidence, substantive conversation, school improvement, purposeful instruction, and self-development. These six elements should be integrated across all aspects of an IC's daily work and made aware to all parties involved in coaching, from district administrators to teachers involved in the coaching process.

Professional relationships. To build professional relationships, an IC actively and deliberately works with teachers and building administrators in settings to establish and build trust and respect. This does not occur haphazardly; the professional coaching relationship is best built when a coach recognizing the complexity of working with adults. Knight (2016) indicated adults work best with an IC when they are offered choice, a voice, and can tangibly apply the tasks provided to their respective classroom. These tasks not only look to grow trust and respect between the coach and targeted teachers, also among the teachers themselves and with school administrators. Done successfully, teachers hold themselves and each other accountable for increasing their capacity and their students (Tanner, Quintis, & Gamboa, Jr., 2017).

The usage of data and evidence. An IC engages teachers in purposeful actions to collect quantitative and qualitative data for two purposes: to measure student success and teacher capacity. In measuring student success, ICs lead, facilitate, and collaborate with teachers to design assessments and create a schedule to employ those designs authentically and meaningfully. In building teacher capacity, an IC assists teachers in using data to plan and determine effective instructional strategies. In order to do this effectively, an IC ensures teachers are involved in activities that allow for data collection,

identifying what learning looks like both quantitatively and qualitatively, and using evidence to inform decisions (Wang, 2017).

Substantive conversation. Used in conjunction with data and evidence, an IC involves teachers in conversations that examination student mastery of concepts and bring about reflection on teaching strengths and needs. To confirm mastery and reflection occur, the IC should learn of teacher goals, be a guide in resolving cognitive dissonance, and encourage inquiry. These conversations are often considered the crux of instructional coaching, as they are personalized and individualized for every teacher (Wang, 2017).

School improvement. This aspect of instructional coaching consists of working with school leadership to bring about whole-school processes, whether in usage of instructional strategies, data analysis, assessment development, lesson planning, and positive school culture. School improvement transpires when the IC works with school leadership to create or revise an evidence-based improvement agenda, encourages collaboration between and among school stakeholders, and grows professional learning teams. An IC can be an advocate of school improvement best when engaging in whole-school processes and working with individual teachers to access the benefits of these processes (Wang, 2017).

Purposeful instruction. In this facet of coaching, the IC supports the teacher in meeting the needs of the various learners in their classroom. Through observation, feedback, co-planning, modeling, and co-teaching, the IC provides direct links between selection of pedagogical, management, and differentiation approaches to student learning.

This element of coaching affords the teacher to extend their content knowledge, increase capacity in differentiating instruction, and establish a learner-centered culture in the classroom (Wang, 2017).

Self-development. Self-development gives ICs an opportunity to demonstrate life-long learning to teachers. It permits the teacher to engage in activities which allow for the coach to be reflective on his or her practice, and measure capacity in influencing growth in teachers. An IC aids a teacher in self-development when consistently applying research- and evidence-based approaches to their work (Wang, 2017).

From the literature, these six elements of practice may not be seen consistently in coaches, particularly in the study settings. The qualifications of ICs have been found to be uneven, which eludes the practices used and possible influence of the practices are also uneven. McCombs and Marsh (2009) explained through their qualitative research principals and teachers were concerned their IC may not be as equipped to train, teach, and mentor adult learners as well as they could work with students. The ICs requested on-going professional development for adult learning strategies more than any other approach in supporting their work.

Because the day-to-day work of ICs can vary from one school to the next, it can be difficult for teachers and administrators to pinpoint specific areas in which their IC was instrumental in being a positive change agent. For example, the state of Florida desired that its reading coaches spent at least 50% of their time working in classrooms with teachers. Interviews with and observations of reading coaches uncovered that only 15 % of coaches spent more than 30% of their time in classrooms. The remaining time

was spent conducting one-on-one conferences with teachers, analyzing data, performing coaching duties (e.g., inventorying reading materials, organizing student assessments), and engaging in other non-related coaching duties, like recess or lunch duty (Lockwood, McCombs, & Marsh, 2010; Wouflin & Rigby, 2017).

Teacher Professional Development Methods

Teacher professional development which leads to sustained instructional change and increased capacity must contain activities that will yield time to practice and receive ongoing support when the new information is applied in the classroom (Hammond & Moore, 2018). Kennedy (2016) called this the "learning-abandon-new learning" approach. In addition, the methods must be relevant, quickly applicable to tasks or obstacles at hand, and allow for metacognitive actions to occur. When all of these components come together, the methods used to increase the capacity and performance of an educator can be successful (Klein et al., 2015).

Learning new content to build school culture. In teacher professional development, this occurs in meaningful and germane ways to master unknown content and/or pedagogical which will strengthen student mastery. This process can be particularly challenging for a teacher, as the depth and breadth of new learning is unknown until it occurs. Often, new learning requires the teacher to do additional learning of other aspects of the new strategy, approach, or model be introduced (Bedford, 2015).

Unlearning old assumptions. Once new content has been learned, the battle between it and old assumptions takes place. These old assumptions often encompass

what a teacher thinks and believes to be the essence of what teaching and learning is. Bedford (2015) provided the following example: if a teacher has just learned about the strategy of 'Socratic Seminar' but has utilized direct instruction as his or her dominant instructional approach, significant "unlearning" about how students can engage in learning is critical for him or her. Unlearning requires a teacher to see the possibility of the new learning to be successful in his or her classroom. Without seeing the possibility, old assumptions are reinforced, and the new learning is compromised. Kennedy (2016) referenced this as "abandonment" when engaged in new learning during professional learning. During the "abandonment" or unlearning of old assumptions, teachers must either have a prescription to lean on to demonstrate new learning; actively practicing the new strategies and having "'aha' moments"; strategies for implementing new learning, with rationales to explain why old strategies did not work; and a body of knowledge, which provides diagrams, lectures, and other research-based knowledge explaining the new learning and dispelling the old assumptions.

Relearning new behaviors. Bedford (2015) stated this process requires teachers to create new behaviors and understandings around the same concept—establishing a different understanding on what teaching and learning look like and feels like in a classroom. Teachers must be mindful to not incorporate old "unlearned" approaches into the new behaviors. New learning can be powerful when done collaboratively, and in a setting where reflection and growth are encouraged. Carson et al. (2019) explained in their study of a year-long physical education professional development program that

teachers implemented new learning best when support at school was on multiple levels, from colleagues to building administrators.

To ensure students are engaged in learning that provides them opportunities to become complex and analytical thinkers, schools must offer effective professional development that goes beyond traditional one-stop workshops (Matherson & Windle, 2017). In a quantitative study of relationships between teachers' participation in job-embedded professional development and its effect on teacher and teaching in China, Ke, Yin, and Huang (2019) determined teachers were willing to participate in school-based sessions largely because of collegiality opportunities and broad principal support. Further, while teachers participated frequently in collaborative planning, its effectiveness was driven further because of the quality of teacher participation when working together.

Professional learning communities. One teacher professional development method engaging teachers in meaningful growth is a professional learning community. Darling-Hammond and Richardson (2009) defined this method of professional development as one where "teachers work together and engage in continual dialogue to examine their practice and student performance and to development and implement more effective instructional practices" (p. 3). In a professional learning community, teachers try out new strategies, reflect on its effectiveness within the context of their content area, and discuss ways to strengthen, refine, and improve its ability to maximize student comprehension. Within a professional learning community, teachers engage in a variety of strategies to advance their practice and increase student achievement, such as peer

observations, analysis of student work and data, and action research (Darling-Hammond & Richardson, 2009).

A benefit of a professional learning community is the collegiality which develops from the collaboration between and amongst teachers, as it looks to link standards, curriculum, and assessment to all facets of teacher growth (Darling-Hammond & Richardson, 2009). In a case study of two mathematics teachers participating in a professional learning community over a 2-year period in Ontario, Holm and Kajander (2015) stated both teachers demonstrated growth and change in their teacher practice. Both teachers were selected specifically for the case study due to contrasting views on the participation in professional learning communities; one teacher was extremely excited to be a part of the group, while the other was initially resistant to participate. Teacher growth occurred the over their 3-year study through co-planning, review of mathematics concepts and skills, and reflective conversations amongst teachers on the strengths of the lessons in terms of student learning. In a multi-semester mixed methods study of a professional learning community of teachers integrating iPad usage in their classrooms, Fenton (2017) described participants identified working together as a professional learning community made them feel supported in the initial integration of iPads in their classrooms, but also the sustained integration of the devices in their lessons. She indicated that "[a] teacher learning from other teachers on how to change lessons or how to use the technology to engage students was reported as critical for professional development by many teachers" (p. 176).

Bedford (2015) explained the new learning which occurs is due to educators going through the cycle of "learning, unlearning, and relearning." In this cycle, teachers collegially learn new content and pedagogical strategies. While implementing these new strategies, teachers unlearn, by confronting the assumptions they have made about what it means to be a teacher—from what it looks like in the classroom, to what student learning is. In a case study examining the opportunities secondary mathematics teachers have to develop mathematical capacity, Campbell and Lee (2017) explained the cycle of learning-unlearning-learning new strategies often occurred in professional learning communities through modeling. The modeling teacher not only showcased how to implement the new strategy, the other teachers acted as "students," offering possible responses they may encounter within their own classrooms. They further stated modeling allowed for teachers to examine the new learning and strategies in terms of the method itself, and the mathematics instruction needed for it to be successful, rather than a personal perspective if the new strategy is "liked" or not. Finally, teachers relearned; they developed new understanding and behaviors around their new assumptions of what it means to teach.

Collaborative professional development. Another teacher professional development method being utilized is collaborative professional development. Like a professional learning community, this type of learning opportunity usually consists of a group of teachers collaborating with higher education partners or other external professional developers to increase their capacity and student success (Bryce, Wilmes, & Bellino, 2016). In a 3-year mixed-methods study of the effects of this method of

professional development on urban science teacher change, Johnson and Marx (2009) as cited by Bryce et al. (2016), discovered 100% of teachers improved in their efficacy during their first year in the study, as measured by the LSC Observation Tool. In the study, an experimental group of teachers participated in over 120 hours of professional development: a 2-week summer experience with university partners focused on inquiry-based teaching, multi-cultural education concerns, and literacy strategies; and monthly whole-day professional development sessions to deepen understanding of summer topics. Of the eight teachers in the control group, only 1 teacher improved in effectiveness, while two teachers regressed during the year.

Implications

The purpose of this basic qualitative study was to explore how middle school principals perceived the effect of instructional coaching on mathematics teacher performance. As I conducted interviews with middle school principals, the study could have uncovered several different findings. One finding could have been middle school principals perceived instructional coaching had a positive effect on mathematics teacher performance. A second finding could have been middle school principals perceived instructional coaching had a negative effect on mathematics teacher performance. A third finding could have been middle school principals perceive instructional coaching has neither a positive nor a negative effect on mathematics teacher performance.

As a result of the interviews I conducted with the study participants, this basic qualitative study may lead to the development of professional development training and materials for strategies for middle school principals to implement when engaged in

instructional coaching. This training and accompanying materials may encompass a variety of topics, including: strategies for instructional coach collaboration with building principals; instructional coaching in a middle school; content-focused coaching (CFC) as it relates to mathematics; and best methods for middle school principals and an IC to employ to maximize effective formative supervision of teachers. In addition, the professional development training and materials may also contain examples of forms to utilize when principals progress monitor instructional coaching implementation, sample partnership agreements to use when beginning the coach-principal relationship, and a checklist for the middle school principal to employ when identifying ways in which coaching is influencing teacher performance.

Summary

The impact of instructional coaching on increasing middle school mathematics teacher performance is an issue within central Pennsylvania school districts and other school systems across the United States. Research has offered studies to examine coaching influence in literacy and elementary mathematics; yet little empirical research has provided that similar insight on other areas, particularly how principals perceive instructional coaching effectiveness (Snyder, 2017). Further, numerous coaching models exists (Akhavan, 2015; Collet 2012; Gibbons & Cobb, 2016), while none have been identified as an exemplar to utilize to maximize middle school mathematics teacher capacity and performance. Moreover, there a few strategies outlined for a principal to make use of to identify and describe instructional coaching influence on teacher capacity (Johnson, 2016). In Section 2, methodology was proposed to gain awareness of how

middle school principals perceive the effect of instructional coaching on mathematics teacher performance, and how those perceptions assessed middle school principals' awareness of changes seen in teacher performance.

Section 2: The Methodology

Introduction

In this basic qualitative study, I explored how middle school principals perceive the effect of instructional coaching on mathematics teacher performance in four middle schools in central Pennsylvania. Through interviews with the principals, I learned their perceptions on the effect of instructional coaching mathematics teacher performance. As instructional coaching has become one of the more popular forms of professional development for teachers, it was critical to ascertain the perspective of middle school principals of instructional coaching to effect mathematics teacher performance. Merriam and Tisdale (2016) stated basic qualitative studies are the most common form of qualitative research conducted in the field of education. While middle school principal perspectives could have been studied quantitatively, or from a variety of other qualitative approaches, learning the essence of the coaching experience through the eyes of a building principal via a basic qualitative study was the most efficient choice for my study. Keen and Marcus (2018) stated that the description and detail of distinct experiences are at the heart of a basic qualitative study. Due to the individualistic approach of instructional coaching, how each middle school principal perceived of its effectiveness was a unique experience; a basic qualitative study would capture that best. From individual interviews with I conducted with study participants, it was my goal to provide insight into how a middle school principal perceived the effect of the instructional coaching on mathematics teacher performance in their school.

Qualitative Research Design and Approach

I implemented a basic qualitative study to explore how middle school principals perceived the effect of instructional coaching on mathematics teacher performance. A basic qualitative study is one of the most common forms of qualitative research studies, particularly in applied fields of practice like education, counseling, and social work (Merriam & Tisdell, 2016). I chose a basic qualitative study approach over other research designs for a variety of reasons. First, the social constructivist framework, in which the phenomenon of instructional coaching is couched, creates a unique view of how middle school principals perceived the effect of instructional coaching, rather than a collective view of its effect.

Constructivism places an individual's meaning of learning at the core of its philosophy. Because of this, middle school principals' perception of effect of instructional coaching is best discovered from the aspect of each principal involved, rather the group of principals. As Lodico et al. (2010) stated, "each [person] bring[s] a history of personal experiences, attitudes, behaviors, and emotions, all of which will influence how you view this shared experience" (p. 17). I discussed these types of experiences with principal through interviews, and are they were best analyzed through the lens of a basic qualitative study.

Second, instructional coaching is a very personal encounter, one that is subjective, reflective, and contextualized (Dean, Dyal, Wright, Carpenter, & Austin, 2016). Due to this, developing an understanding of it may have been minimalized from the usage of quantitative or mixed-methods approaches, such as a causal-comparative study, a

correlational study, or experimental research. While each of those research designs would have provided insight into a how middle school principals perceived the effect of instructional coaching on mathematics teacher performance, each would have looked to explain the cause/effect of, or correlate the actions and subsequent reactions of middle school principals when they share what occurred with their IC. Glesne (2016) indicated numerical data could be useful to quantify participant attitudes or feelings; however, the data may miss the depth and breadth of responses provided from surveyed participants, or not fully uncover their thinking, due to the random selection of the sample. Merriam (2009) defined a case study as qualitative research conducted via a deep description and analysis within an entity, also defined as a bounded system. While instructional coaching could itself be described or defined as an entity, learning a middle school principal's perspective on instructional coaching is not a bounded system. Thus, a basic qualitative study was a more appropriate qualitative research design over a case study.

Third, a basic qualitative study was the most effective qualitative research design to employ to explore the research question rather than other qualitative research designs such as narrative inquiry, ethnographic study, phenomenological study, or grounded theory study for several reasons. A narrative inquiry analyzes the *story* of one participant of a study and is focused on first-person accounts of an experience from its start to its end (Merriam & Tisdell, 2016). In this regard, the story of only one middle school principal would have been told, along with the interactions and experiences he or she had with others (namely, the instructional coach and coached teachers). The purpose of this study was to uncover how middle school principals perceived the effect of instructional

coaching on mathematics instruction. This required in-depth interviews with middle school principals. Ethnography studies focus on human society and its culture, including the beliefs, values, and attitudes of a targeted group of people (Merriam & Tisdell, 2016). Explicit criteria define a culture, and while instructional coaching may influence the culture of a school, instructional coaching does not meet the criteria and definition to be considered a culture itself. A phenomenological study could have been considered for learning more about middle school principals' perceptions on the effect of an instructional coach on mathematics teacher performance, as instructional coaching is on some levels, a phenomenon as a professional development strategy. However, looking deeper into the essence of a phenomenological study, this qualitative research design was not the best design choice either. Phenomenological studies require for the researcher to "depict the essence of basic structure of experience" (Merriam & Tisdell, 2016, p. 26). This would have required me to participate in the study as a principal partnering with an IC, which was not the intention of this study. Further, phenomenological studies tend to be implemented to learn further about deep personal occurrences and experiences, such as love, hate, and betrayal. The final qualitative research design I did not select for this study was grounded theory. I did not choose to conduct a grounded theory study because of the lack of focus on the rich description of the case. A grounded theory (Merriam & Tisdell, 2016) focuses on the discovery of a theory which emerges from the research, as well as discovering the process of how something can change over time.

Finally, a basic qualitative study best captured the unique interpretations of a middle school principals' perceptions on the effect of instructional coaching on

mathematics teacher performance, due to the level of reflection and in-depth interviews I engaged in with study participants. I conducted semistructured interviews with middle school principals whose instructional coach supports mathematics teachers. This deep level of interaction permitted me to learn the language, methods of communication used, and other quirks which showcased the middle school principals' perceptions of IC effect on mathematics teacher performance. Once preliminary data collection occurs, Lodico et al. (2010) called for the researcher to reflect on the collected data to note what has been observed and shared by the participants. The detailing of these distinctive human experiences provided me greater context around the perception of the effect of instructional coaching on middle school mathematics.

Participants

Participants for this basic qualitative study were four middle school principals currently working in school districts in central Pennsylvania. I selected the participating middle school principals through the convenience sampling and snowball sampling method. Creswell and Poth (2017) explained convenience sampling as a purposeful sampling method used when selecting participants because of their willingness and availability to be studied. While this sampling method was not an absolute representation of middle school principals working with an IC, applying this sampling technique to select study participants allowed me to have a greater level of transparency, honesty, and openness when interacting with participants during interviews. As the targeted number of participants (four to six building principals in total) was not reached using convenience sampling, I also utilized the snowball sampling method to solicit study participants.

Glesne (2016) described the snowball sampling method as a strategy for participant selection when study participants may know other potential study participants who meet the researcher's interest. This sampling method is recommended for usage as a secondary approach to solicit participants, rather than a primary approach.

Procedures for Gaining Access to Participants

Prior to gaining access to participants, I submitted an Institutional Review Board (IRB) application to Walden University and was approved to obtain permission to conduct research and to collect data for my study. Through convenience and snowball sampling, the size for the case study was four participants in total. Merriam (2009) stated there were no criteria for determining an adequate sample size when conducting qualitative research; instead, the research questions drive the sample size. A sample size of four participants allowed me to conduct in-depth interviews with the middle school principals and to do so more than once if necessary. The criteria for selection of the study participants were:

- A middle school principal,
- who was not emergency certified in supervision or K–12, and
- who was currently a principal of a middle school participating in instructional coaching and/or professional development activities with the IC.

Participants who met these criteria were eligible to take part in the study. I selected only three criteria to allow for a wide range of middle school principals in central Pennsylvania school districts to participate. The procedure I used to gain access to the participants was through their school email addresses.

Researcher-Participant Relationship

To establish a strong researcher-participant working relationship, I contacted every willing participant via telephone and face-to-face to offer thanks for contributing to the study, and to disclose the measures to be used for ethical protection. During the initial face-to-face meetings with participants, I obtained informed consent. Lodico et al. (2010) stated informed consent allows for every study contributor to be aware of the measures and treatments to which he or she will be exposed to during the study.

Protection of Participants' Rights

Protection of participants' rights was discussed prior to receiving informed consent of each participant, as I informed the participant of the goals of the research, the methods the basic qualitative study will utilize, and the ability for the participant to be released from the study at any given time. A form describing informed consent was signed by each participant agreeing to contribute to the study. In addition to informed consent, I informed each participant of the measures of confidentiality to be used while conducting the research. Confidentiality included the usage of pseudonyms in place of each participant's real name, as well as the names of the middle schools. I kept the field notes and recordings of interviews in a secure location away from all participating middle schools, so none of the participating principals had access to what has been discussed.

Data Collection

Data Collection Instruments and Justifications

To gather formative data for this basic qualitative study, I conducted semistructured interviews using researcher-developed questions with participants. Merriam and Tisdell

(2016) described a semistructured interview as one which asks open-ended questions with less structure, which allow for study participants to respond with their own unique replies. In addition to questions being open-ended, a semistructured interview does not require the wording or order of the questions to be exact. This permitted me to ask questions in an order which opens the window to explore how each middle school principal perceives the effect of their instructional coach on mathematics teacher performance.

Collected Data for the Study

The collected data for this basic qualitative study were transcribed notes from middle school principal interviews. These data allowed me to explore how a middle school building principal perceived the effect of instructional coaching on mathematics teacher performance. To accomplish this, I conducted 1-hour individual interviews with each of the participants. The interviews were done one-on-one to establish trust between the participants and me. As I collected data were collected and transcribed interviews, an additional 45-minute interview was agreed upon if needed; however, the collected data sufficed for great details and insights.

The data I collected from the interviews were recorded and notes were taken to capture responses given by participating principals. In addition to the recordings and notes, I also transcribed the interview recordings using the online service Temi (www.temi.com). A reflective log was kept to record all that was observed by the researcher during principal interviews as well as wonderings which may arise.

Procedures for Gaining Access to Participants After Walden IRB Approval

I gained access to participants by emailing them at their school district email address. In the email to each middle school principal, I requested interview dates and times. In addition, contingency dates and times were sought, in the event the original dates and/or times became unavailable. During the appointment, the participants reviewed their consent forms, as well as procedures for confidentiality and their ability to withdraw from the study at any time. Further, I discussed the overall goal of the basic qualitative study, the role of the researcher while interviewing participants, and answered any questions participants may have about the study and the proposed findings.

Role of the Researcher

I was employed as a mathematics IC from 2007–2010 at middle school in suburban Maryland. Until the 2019–2020 school year, I oversaw an instructional coaching program in an urban school district in central Pennsylvania. Due to recent oversight of the instructional coaching program, I conducted this basic qualitative study in middle schools I am not employed in that have ICs. Because of previous and current experiences, I anticipated having some bias during the data collection. To address these biases, I requested an outside member to assist in the review of the reflective log. Further biases may have arisen regarding the possible outcomes of the case study, due to direct experience as an IC. These biases may be stemmed due to the vast difference in training, experience; field of teachers worked with, and content area of expertise between the researcher and the ICs from the participating middle schools. The instructional coaching programs in central Pennsylvania offer less hands-on training and literature than what I

participated in when part of the instructional coaching program in suburban Maryland. In addition, ICs in the selected middle schools can hold any core content certification, rather than only mathematics; they are also considered generalist, and not content focused.

Data Analysis

Data analysis occurred simultaneously with the completion individual interviews. Initial data analysis occurred through the maintenance of a reflective log. After each interview (and any other time deemed necessary), my thoughts were recorded in a journal as well as with a mini recorder kept in the car and home. Glesne (2016) recommended maintaining a reflective log of some sort during qualitative research to ensure all thoughts and perspectives of analysis of the data are captured and not forgotten. She also recommended engaging in this initial level of data analysis to safeguard from forgetting pertinent things that may have occurred many weeks or months ago. As interviews were conducted, I transcribed the interviews from audio to text and stored in a Microsoft Word document. I replaced participants' names were with a pseudonym to protect identities and ensure confidentiality. To analyze the data, I compared the interview transcripts with the reflective log I kept, beginning to examine for any alignment and patterns specific to the study research question and the social constructivist framework.

Saldaña (2015) outlined a four-step process to analyzing qualitative data: (1) find codes in the data, (2) create categories of the codes and then develop higher-level categories, (3) review higher level categories and synthesize them to create themes, and (4) apply emerged themes to the study research question. The type of data analysis I engaged in was thematic analysis.

Applying the thematic data analysis approach, I employed open coding to begin to identify repeating words or phrases or concepts noted from the data. Saldaña (2015) defined a code as "a word or short phrase that symbolically assigns a summative, salient, essence-capturing, and/or evocative attribute for a portion of language-based or visual data" (p. 1). As often recommended in coding processes, all transcripts were coded line by line using the Temi transcription software. Glesne (2016) encouraged coding in this manner to refrain from applying a predestined set of codes to the data, as well as to reduce bias during coding. Utilizing the strategy of open coding, I read through and highlighted words and phrases, being conscious to include whatever could be pertinent in answering the research question. Next, I assigned a provisional label to each section based on the meaning I initially determined; I repeated this procedure for each transcribed interview. After completing the open coding process, I created a list of every open code.

Next, I conducted a second level of coding, axial coding, to ascertain the most essential codes relevant to answering the research question. I reviewed the original data and open codes, grouping information into categories, based on common characteristics. Saldaña (2015) considered a category to be a group of codes based on similar characteristics; a higher-level category a group of categories which lead to identifying an emergent theme. During the axial coding process, I reviewed categories, reorganized the data, deleted redundant codes, combined axial codes, and aligned codes to research questions. I sought for key concepts and patterns to further develop categories (Appendix D). Summarizing and clarifying the data are vital in the process of

establishing meaning from the data (Merriam, 2009).

The goal of thematic analysis for this study was to uncover themes, which ultimately led to meaning in the data to the research question guiding this study (Saldaña, 2015). A list of categories from interview data. These categories were reviewed to determine patterns emerging as themes were useful in describing the principal perceptions and answering the research question. Saldaña (2015) recommended consolidating higher-level categories into themes. He stated qualitative research necessitates deep reflection on the part of the researcher to capture crucial meanings in the data and to identify emergent themes. He considered a theme to be a set of higher-level categories which were relevant to describing the pattens associated with providing greater understanding to the research questions. As a researcher, I reviewed the data, searching for repetitive ideas among the categories. Finally, the data were condensed further by creating groupings of connected categories until themes emerged. Data were reviewed multiple times until no new themes emerged, which is considered saturation (Patton, 2015).

Quality Assurances

To maintain the most accurate and credible findings possible, I utilized member checks of the interview findings as well as peer review of the axial coding. Merriam (2009) estimated member checks nearly eradicate any chance of misconstruing the meaning of what an interviewee intended response to a question is. In addition, the member checks allowed for any potential misinterpretations of themes and/or other analyses of the data to be found. Member checks of the findings occurred by me sending

the participants a copy of the interview recording along with the word-for-word transcript and emergent themes, via email. The participant was asked to respond with an affirmative email if the transcript was accurate and if it was not, to provide the specific areas the transcript and interpretations which were incorrect. Merriam and Tisdell (2016) encouraged the usage of member checks to confirm the responses to the questions asked to the interview participants indeed are a representation of what they were truly meaning and feeling at the time.

Creswell and Poth (2017) directed a researcher to use a peer review as a measure to increase the accuracy a qualitative study's findings. Lodico et al. (2010) described a peer reviewer (also known as a peer debriefer) as a separate investigator who meets with the current researcher to discuss field notes, codes, and other findings. In addition, this person also encourages the researcher to view the data from an alternate perspective, so that no conceivable interpretation of the data is missed. The peer review was conducted by a recent graduate student highly familiar with professional development and professional learning as both a former IC and current building principal. Her review of the axial codes indicated they were accurate and could be clearly seen by someone who may not have any experience with school administration as a principal, or as an instructional coach and/or classroom teacher.

Limitation

Glesne (2016) explained recognizing limitations of a study is a demonstration of trustworthiness of the data collected. A limitation of this study was the sample size of participants who consented to engage in a semistructured interview for data collection.

The original number of participants sought for the study was between six to eight middle school principals. At the onset of the study, I emailed a local middle school principal list serv, seeking interest for participation in the study. This email was sent to a minimum of 25 middle school principals, of which two principals responded to indicate their interest. After 30 days, I resent the email to the middle school principal list serv, to which no interest was generated. After consulting my committee chair, it was determined and agreed upon that the avenues for convenience sampling methods were exhausted. At that time, I submitted a revised Institutional Review Board (IRB) application to seek permission to conduct the study with a smaller sample size (a minimum of four to a maximum of six). Patton (2015) recommended identifying a minimum sample size "based on expected reasonable coverage of the phenomenon given the purpose of the study" (p. 314). In addition to requesting a smaller sample size, I revised the IRB application to utilize school district and middle school websites to identify principals who interacted with an IC in their building.

Further, due to my former position in my current school district, the middle school principals in that district were not sought for participation, as I oversaw the coaching program. One of the intended central Pennsylvania middle schools to seek for participation eliminated the IC due to their relocation to another school system. Further, I discovered not all middle schools within a school district in central Pennsylvania had an IC, unlike the school district in which I was previously employed in another state. The elimination of the IC position from a local middle school allowed for me to seek only seek participants one middle school principal within the district to I hoped would

participate. In another local school district, the instructional coaching program was eliminated, with all the ICs relocated to the middle school. The principal had autonomy to utilize the ICs in a coaching capacity, which does occur, along with a portion of instructional responsibilities throughout the day.

With these circumstance in place, I enacted the snowball sampling method, and contacted the two middle school principals who expressed interest and agreed to participate in the study to seek their support in identifying local middle school principals who may not have expressed interest in the study prior, but may agree to from their request. Each middle school principal identified a colleague who they thought may be interested. I contacted those principals through their email addresses to seek interest and later agreement to participate in the study. Merriam and Tisdell (2016) considered this type of purposeful sampling as "two tier" sampling, meaning, two levels of samples are needed to complete the minimum number of needed for the sample size. As the minimum number for the sample size was reached, it may be possible the data collection I conducted did not lead to a point of saturation in participation responses, because of the small sample size.

Data Analysis Results

The following data analysis subsections are structured to recapture the chief approaches I used which guided the process of the doctoral study. In order to accomplish this, the subsection includes a review of the methods I used for data collection, participant demographics, thematic analysis, and a delivery of the findings for the study

research question, “How do middle school principals perceive the effect of instructional coaching on mathematics teacher performance?”

Data Collection

The essential and appropriate qualitative data needed to answer the study research question were collected through in-depth semistructured interviews I conducted with four convenience and snowball sampled middle school principals within central Pennsylvania. Convenience sampling brought forth two middle school principals, and through their recommendations, snowball sampling brought forth the remaining two participants. Merriam and Tisdell (2016) considered snowball sampling methods to be one of the most common means to employ purposeful sampling, largely because of the ability to seek new participants from the suggestions given by current participants.

Due to the individualistic approach of instructional coaching, how each middle school principal perceived its effectiveness was a unique experience; describing and detailing those distinct experiences is at the heart of a basic qualitative design study (Keen & Marcus, 2018). To reduce bias during data collection, a peer debriefer was utilized to assist in the review of the reflective log. Finally, I informed each participant of the various measures of confidentiality to be used while conducting the research.

A semistructured interview allowed for me to ask a set of pre-developed questions to each participant, each focused on the principal’s perception of instructional coaching effect in their respective schools. Merriam and Tisdell (2016) described a semistructured interview as one which includes interview questions somewhat structured which can be asked flexibly, and do not have to be asked in a predetermined order. I selected this type

of interview for data collection instead of a highly structured interview because of the nature of qualitative studies—more open-ended and less in structure. As the four middle school principals had a variety of years of experience as an administrator, as well as a variety of experiences with their instructional coach, a semistructured interview allowed for me to ask follow-up questions if necessary to collect as much as data as possible. The interview data were collected with a recording device as well as written notes during the 30- to 45-minute time together with the participant. Further, I asked the questions were exactly as written, to ensure they were not leading in a way to influence the data results. Finally, upon completion of each interview, a reflective log was created to capture insights, wonderings, and initial thoughts I had.

Review of Quality Assurances

A variety of methods were used to provide quality assurances for participants in my study, all which were in line with the procedures described earlier in this section. Member checking was used to ensure participants could confirm the accuracy and representation of the interview findings. All four participants confirmed the accuracy of the interview transcription as well as the representation of the interview's findings. Also, a peer debriefer was utilized to examine the codes which arose from axial coding the collected data as well as the findings. I discussed protection of participants' rights prior to receiving informed consent of each participant, as well as confirmed the ability for them to be released from the study at any given time.

Demographics

Merriam and Tisdale (2016) characterized a basic qualitative study as research that seeks to understand the ways people interpret experiences in their lives and how they define and articulate meaning of those experiences in their lives. For this basic qualitative study, I sought to understand the ways in which middle school principals perceived their IC's effectiveness on mathematics teachers' performance. The study gathered four middle school principals to learn more of their experiences with IC effectiveness on mathematics teacher performance. Participants gender, ethnicity, and administrative experience were diverse: one principal was male; three principals were female. two principals were White, and two principals were African American. Two of the four principals had less than three years' experience as a principal; the two remaining principals were principals for at least five years or more.

Table 1

Demographics of Middle School Principals

Pseudonym	Gender	Race	Number of Years as a Principal
A	M	White	6
B	F	Black	10
C	F	White	1
D	F	Black	2

Findings

The driving problem of this basic qualitative study was middle school principal perceptions on the effectiveness of instructional coaching on mathematics teacher performance were unknown, despite being a strategy widely used in schools. Based on

recent school year state assessment mathematics performance, most students in Grades 6-8 performed at the basic and below basic levels, and schools with instructional coaching were still performing at or below the state average. Further, ICs in different school settings were utilized in a variety of ways, and not always at the forefront of supporting teacher instruction, capacity, and professional development.

The goal of my study was to explore middle school principal perceptions of the effect of instructional coaching on mathematics teacher performance. Principals increasingly employed instructional coaching as a professional learning strategy to work with all types of teachers—novice, veteran, struggling, excelling, and content-specific (Johnson, 2016). I utilized social constructivism as the conceptual framework for this study, as it speaks to each individual making meaning of their own learning, in this case, middle school principals' perceptions of the effectiveness of instructional coaching. Further, because social constructivism is rooted in an individualistic approach to learning and making meaning of experiences, this conceptual framework falls in line with both instructional coaching as well as the perceptions a principal derives regarding his or her instructional coach's effectiveness on mathematics teacher performance.

I learned that overall, all the principal participants in the study have positive perceptions of instructional coaching on mathematics teachers' performance. Each of the principals have their own unique view of instructional coaching effectiveness, however; all four principals perceived their IC to be a partner in advancing successful instructional and professional development strategies, as an influencer to maintain fidelity to instructional practices, and as someone to champion for individual growth as well as

student achievement. The findings from this study will allow me to inform the work of neighboring middle school principals on how to best employ the work, partnership, and collaboration of instructional coaching to increase effectiveness of mathematics teacher capacity.

Results for the Study Research Question

RQ was "How do principals perceive the effect of instructional coaching on middle school mathematics teacher performance?" Four themes became apparent from seeking to understand principal perceptions of instructional coaching effectiveness on middle school mathematics teachers. The four themes were: ICs are partners with the principal; ICs influence fidelity to instructional practices of teachers; ICs are championed by the principal; and principal perceptions depict a lack of coherent structure for instructional coaching with mathematics teachers.

Theme 1: ICs are partners with the principal. An emergent theme regarding principal perceptions of the effect of instructional coaching on middle school mathematics teacher performance was the view of the instructional coach as a partner of the principal at school. Each middle school principal viewed their instructional coach as a partner in a variety of ways to effect mathematics teacher performance. The multiple yet common perceptions described about partnership aligns with the social constructivist framework driving this study, as experiences and sense making of their respective partnership with the IC is unique (Sad et al., 2017).

Each expressed their perception of the IC as a partner as it related to meeting to discuss variety of matters, including crafting professional development, collaborative

planning, data analysis, successful or struggling teacher supports, or needs of the IC to be successful. All four middle school principals described meeting informally with their IC, whether in the moment, after completing a classroom visit, or to respond to a quick need. Principal A stated his IC and he "have an open dialogue. She knows she'd come to me and you know, share any concerns or complain about whatever. And she knows that I'm here to help her." Principal D described her ability to meet informally with her IC after a round of classroom instructional walk throughs, "I can think of an example where I went to my coach and asked, you know, what was the planning like around this particular unit because I'm noticing variances. So those are some of the informal conversations that happen."

Regarding meeting formally, two of the four principals indicated they held formal meetings on a regular and consistent basis, with a focus. Formally, Principal D explained she holds a biweekly IC meeting to specifically provide professional learning on coaching, including a review of recent IC scholarly literature, effective coaching practices, and how to best implement a coaching cycle. Principal B shared, "Eric [a pseudonym] and I need, we had a time set aside…We meet if not once a week, once every two weeks. Um, and when [we do meet, it's with] a list. We'll review data, I'll ask him what he needs…but I [also] need him to let me know, um, in the best way possible. The teachers that I need to look a little bit closer at."

Further, nearly every principal noted the IC to be a partner in their efforts to develop outcomes, goals, and plans to support teachers, through both traditional session-based and job-embedded professional development. Principal D described her

partnership with the IC as it related to possible successes, challenges, and growth which may have occurred during completed coaching cycles with individual mathematics teachers. She indicated that she and the IC review specific data from coaching cycles to measure the cycle's effectiveness, to which she offers feedback for IC growth and future planning. When asked to explain what a review of a coaching cycle looked like, Principal D explained:

> I require my coaches to keep binders, notebooks that are organized by coaching cycles. Um, we organize the work in team of cycles of coaching and therefore there is documentation of informal observations, planning notes, emails, instructional support plans that outline the focus area of the work, the type of work, the type of coaching that the will be engaged in. And so I review the coach's notebooks at the end of each coaching cycle to identify the work and impact of the coach.

The perception shared above by Principal D describe her intentions to build IC self-efficacy amid the principal-IC partnership. As notes, emails, and other pieces of coach evidence are reviewed by the Principal D and discussed with the IC to identify impact on the coached mathematics teacher, areas of success and challenge are noted, which with the support of the principal are looked to be overcome. This speaks to social constructivist thinking that successes and challenges are used as learning experiences for growth in self-efficacy (Lee, Chen, & Wang, 2017). Further, Principal D described the ways she and her IC work together when it seems the strategies the IC may be employing are not demonstrating effectiveness in mathematics middle school teacher performance:

> I think the best way is to be proactive. I think the best way is to set up a structure… [that] allows for frequent conversations and training and capacity building between coach and principal or coach and professional learning supervisor. Um, so that the coach has a tool kit of strategies. [I]n a differentiated way such that, um, so for example, sometimes when strategies are not working.

Principal A indicated he and his IC often work collaboratively when developing professional learning for the mathematics department, stating, "oftentimes for math professional development, like we, we collaborate on what that, what that professional development should look like. Um, and she, over the course of the year, like she has helped to lead that professional development." Principal C explained various ways in which she partners with ICs to support non-mathematics teachers when they provide mathematics intervention instruction to students, "my coaches are very good at really helping identifying those people on their team that could use the added support and then pushing in and help [them] with that as well."

Lastly, two of the principals perceived ICs as a partner when it came to analyzing student data, creating flexible groups, and supporting teachers to fill content gaps students may have in their schools. Principal C shared her ICs served as the leads to analyze data and develop student flexible groups. The ICs are responsible for analyzing the data, sharing with the Multi-Tiered Systems of Support (MTSS) team, however; the data is not shared with the mathematics teachers and non-mathematics teachers providing mathematics intervention supports in order for the grouping of students to be done collaboratively. She shared, "the coaches spearhead and lead our flex groupings for kids.

Um, so they are using that data right now to regroup kids. Um, and then they really provide the instructional tools and resources to the rest of the teachers that are running those intervention groups." Principal C delved into greater detailed about a recent experience with an IC leading data analysis on a recent mathematics benchmark:

> [O]ne of my coaches, um, was able to identify just recently that in seventh grade, um, looking at the, we just did our last or most recent study Island benchmark and we had so many kids who before the open ended response were proficient and after the open ended response were below basic. So clearly there is a huge gap in that open-ended response portion, and she was able to actually drill it down even to some specific skills so we know where to target.

Principal A indicated that the IC in his school, "really developed a focus on helping [math] teachers to look at data and using that to drive instruction." Principal D expressed the usage of co-planning as a strategy the IC uses with teachers to meet the needs of all learners he or she has in their classroom.

As stated previously, each principal discussed and articulated perceptions of partnership with the IC in their school. While partnership was an emergent theme, it was not seemingly consistent in structure among the principals. For example, Principals A, B, and D met informally with the IC in their buildings consistently, however; Principals B and D met formally with a specific focus weekly or biweekly throughout the year. Also, Principals A, B, and C discussed partnership through the lens of data analysis and student outcome review however; Principals A and B described it as a collaborative approach with teachers, whereas Principal C indicated the ICs analyze mathematics data alone and

then share it with administration, MTSS team, and non-mathematics teachers who execute intervention instruction. For reasons unknown, the analysis is not shared with mathematics teachers. Further, Principal C indicated the process of creating mathematics flexible groups is spearheaded solely by ICs; the lessons and flexible groups are created and disseminated by them without input from teachers. The partnership described by Principal C may be perceived as such between and among the 4 ICs in the school, rather than the she and the ICs or the teachers and the ICs.

Theme 2: ICs influence fidelity to instructional practices of mathematics teachers. A significant theme that emerged was the principal perception that ICs influence on fidelity to instructional practices of mathematics teachers. Three out of the four middle school principals noted mathematics teachers who work with the IC had an increase in buy-in and application of new instructional strategies, whether learned in a professional development setting, during collaborative planning, or in one-on-one co-planning. Campbell and Griffin (2017) indicated instructional coaching is rooted in the constructivist framework because the focus is on the teacher and their learning, not the IC.

Principal B shared how she noted in her classroom walk throughs the ways in which mathematics teachers working with the IC were transferring new learning to the classroom, “You're looking for application, same message, consistency, um, and follow through from what you're seeing is the message transferring from what we do in the twice during the math cycle and then whatever he's doing individually with coaching into the classroom[?]...Yes.” Principal B perceived teachers having a consistent application and

messaging of mathematics across classrooms; thus, teachers are learning from the IC. Principal A noted the school had an early school year focus on small group instruction and guided math centers. He explained, "I think there was, I think there's more buy in when it comes from her and it seems like less of a directive than when it comes from me." He further explained what he has noticed when visiting mathematics classrooms where the IC was heavy in collaboration with the teacher: "I observed teachers who are using station rotation, you know, small group direct or guided math centers and they're doing it correctly. It is the best instruction that I see." Brion (2020) described what Principals B and C noted in the interviews as learning transfer. Broad (1997) as cited by Brion (2020) defined learning transfer as the "effective and continuing application by learners…of knowledge and skills gained in the learning activities" (p. 2). Principals perceived fidelity to instructional practices due to witnessing those practices transfer from collaborative planning or a professional development session or another professional development opportunity to the classroom with students. Principal D offered this perception to the ways she has noted fidelity to instructional practices,

> I have absolutely had definitive situations in which a teacher has improved because of the work of the coach. [B]ecause… I know that because there are no other sources of development for that teacher. I know that because the teacher is not in school getting a degree or taking any workshop classes. So, the only route to success has been tied to coach partnership.

In addition, the majority of the middle school principals stated student engagement has increased in the classrooms where mathematics teachers work with ICs.

Principal B explained the ways in which she has noted an increase in student engagement through questioning and student activities:

> I look at that, are they asking more questions? So just, it's, it's more than just the data, but how are students responding to what ..[the IC has been] teaching the math team… [O]bviously through the data, you're looking to see our kids improving, uh, our kids more engaged in the, like you're looking at the tangible, but then also the formative around what you could see and then following up, uh, chasing from what they are.

Principal A described the ways in which he has seen student engagement increase in classrooms where the mathematics teacher works with an IC, “Engagement, questioning, assessment, you know, prompting higher level thinking, you know, gradual release, you name it. If teachers are using that and they're doing it right.” Principal C summed up the influence the IC has impacted student engagement in this way:

> I have a math teacher who has flexible seating in the classroom who works [from] a station model, who involves real-world real-life things in her math classes every day… and I have a math teacher in the same grade who stands in front of the classroom and gives stand and deliver… and you can walk in, the classrooms are side by side and you can walk into those two classrooms and see a very stark difference in the children's motivation for what they're doing. [I]n the one classroom, they're sitting in there and they're behaving and they're doing what they're asked to do, but they're literally just sitting there doing what they're being asked to do. In the other classroom, you can see collaboration, you can see

> conversation, you can see kids really, um, getting into what it is they're doing. So, to me when I'm going in that's to me engagement.

Viewing these principal perceptions through the lens of the social constructivist framework, each principal participant was consistent in noting the ICs were able to support mathematics teachers in taking new learning and making it their own. Further, the principal participants perceptions were shaped form first-hand experiences of watching teachers be willing, ready, and able to learn new strategies, a skill an IC needs to cultivate in teachers to ensure teacher capacity increases and translates to student growth and achievement (Mohamed, Valcke, & De Wever, 2017).

Moreover, principals perceived the IC positively affected mathematics teacher performance by being solution-oriented, recognizing teacher instructional needs, thinking creatively, and providing a tangible resource or strategy to meet the need. Principal B shared, "[The IC] knows every single math teacher's need here. Like he really knows where they need support." She also shared the IC was able to meet teacher needs no matter the intensity or depth, "[W]hatever pushback they gave him on something, he came back with another resource to help them. Like there was nothing they could throw at them of why they couldn't do something that [the IC] didn't have a response, 'Oh I can solve that problem, I can solve that problem'." Principal C explained her perception in this way, "[T]he coaches tend to have a really good success rate of helping them [the teachers], like I said, figure out how to get the kids engaged, make their lessons more engaging, and then also make them cross curricular and relevant."

The perception of an IC being an influence of instructional practices fidelity was one which was noticed to be structured consistently among all the middle school principal participants. Each principal was able to describe and explain specific instructional strategies they observed teachers utilizing with fidelity during classroom visits. In addition, the middle school principals spoke to learning transfer occurring with teachers, implementing strategies learning in professional learning opportunities to the classroom. From the analysis of the data, it is evident principals utilized their IC to engage with teachers to support instructional practices with teachers that will generate a return of student growth and achievement.

Theme 3: ICs are championed by the principal. Each middle school principal in the study perceived the IC as someone to champion for their work with mathematics teachers. It is noted from the analysis of the data that the perspective of champion was not always related to IC effectiveness and/or on mathematics instruction.

Principals' perception of the ways in which to "champion" the IC was different for each participant: one defined "champion" as it related to providing professional learning for ICs. Another defined "champion" as serving as the sounding board when dealing with a combative school leaders or teachers. Another defined "champion" due to teachers indicating they had positive experiences with the IC, particularly in the feedback received.

Principal D perceived her role of championing the IC as one in which she increased their capacity to grow as a job-embedded professional developer, and also to increase their "tool kit" if/when the coaching strategies currently being employed are not

demonstrating a positive return in mathematics teacher performance. She indicated she holds biweekly meetings with the school's content ICs (her school has a literacy, science, and mathematics coach) specifically to engage them in professional learning focused on some aspect of coaching. Principal D described the biweekly meetings this way, "[W]e have biweekly coaches' meetings where I specifically build their capacity around coaching, where we read articles, we discuss coaching practices, we discuss scenarios and how to provide feedback, what does effective feedback look like and how you actually participate in this coaching cycle." She explained it was through these biweekly meetings, informal conversations, monitoring of the ICs coaching cycle binder, and teacher feedback to completed coaching cycles that she was able to cultivate a culture where the IC is able to increase their toolbox to provide mathematics teachers with differentiated supports. Principal D felt that with this level of championing the IC is then able to "… graduate their approaches to teachers as they move along."

Principal A perceived the championing of the work of the IC by helping her to navigate challenging situations with school staff and administrators. Specifically, Principal A explained the IC for his middle school worked in all three middle schools with mathematics teachers in his district, and support for her work varied in each school, particularly in one of the schools with an administrator. As the administrator who oversaw all mathematics curriculum in his school district, Principal A expressed it was essential for him to champion the work of the IC by being a listening and strategic thought companion when she experienced struggles in other schools. When asked for elaboration, he explained:

> So, what I try to do is coach her through ways of dealing with those difficult personalities. You know, I help her to craft questions or reply to emails or prepare for meetings with those people. And I always, and I always offer like, you know, to what level does she want me to get involved?... Like do you want me to call the principal [of the other school]? Do you want me to schedule meeting with the teacher? What, how, you know, what level of support do you need for me?"

The perception of this principal when viewed through the social constructivist framework indicates championing of the IC required the possibility of intervention on her behalf to address non-mathematics related matters for her to be successful. Through their conversations, the principal was able to engage with the IC to self-reflect on challenges she was having, something which she may have struggled with on her own. The collaboration while reflecting allowed for the principal to support her make sense of what was occurring, as well as identification of possible strengths and struggles she may not have taken note of on her own (Sad et al., 2017).

Principal B perceived herself as a champion of IC effect on mathematics teacher performance as it related to the recognizing the growth of high performing students on formative, benchmark, and state assessments. Principal B explained she is a champion of the IC because of the consistency she sees in teachers utilizing recommended resources, materials, and instructional strategies across grade levels and student groups. In addition, Principal B stated she champions the work of the IC because his effectiveness can be tied to student data she reviews. As she shared, "[T]he data, you know, we benchmark, we progress monitor, um, we review data all the time and then

cause I can see it, but to see its effectiveness, um, I'm looking at dark (advanced) kids improving."

Principal C perceived championing of the work the IC does to effect mathematics teacher performance largely from the reflective conversations and feedback she receives from teachers who have worked with the IC. Until recently, mathematics teachers who worked with the IC was a very confidential process in her school district, so Principal C was not aware of the receiving instructional coaching. She noted that during interactions she had with teachers, she would learn of the interactions they had with the IC. Principal C stated it in this way, "I can tell you that I've gotten feedback from teachers about how helpful it was. I've never gotten feedback from any of my teachers that I've said, yeah, I did this coaching thing and it was, you know, I've never had feedback like that." She explained her perceptions further:

> [S]ometimes I'll have math teachers, you know, that are kind of their math brain and they're, they're kind of really stuck on, you know, their content and what their curriculum map is looking like. And, and just kind of getting through the material and the coaches tend to have a really good success rate of helping them, like I said, figure out how to get the kids engaged, make their lessons more engaging, and then also make them cross curricular and relevant.

Analysis of the data revealed the principals' perception of championing an IC were inconsistently constructed among the principal participants. Two of the four principals related championing of the IC directly to first-hand knowledge of the work of the IC with mathematics teachers, whether through classroom visits, data review and

analysis, or designing, implementing, and monitoring professional learning for IC growth. One of the principals perceived championing the work of the IC more so as a collaborator in solving IC-teacher or IC-administrator relationship challenges, and not the actual work the IC with mathematics teachers. Ippolito and Bean (2019) indicated an IC can achieve success when successes and challenges in coaching teachers are discussed regularly. At the same time, Principal A offered to speak with teachers as well as administrators on behalf of the IC; this may be perceived by teachers that the IC is "telling on" the teacher, rather than seeking support. Finally, Participant D viewed herself as a champion of the IC after the fact, as much of her perception was cultivated from the teachers' perspective and not her own.

Theme 4: Principal perceptions depict lack of a coherent structure for instructional coaching with mathematics teachers. Analysis of the data uncovered all four principal participants perceived an IC as a partner, influencer of instructional practices fidelity, and as a champion of the IC, however; it also revealed the structures in place for instructional coaching with mathematics teachers were not clear nor consistent. All the principals recognized the focus and work of an IC was to engage with teachers during job-embedded professional learning opportunities to support instruction. Beyond that, principal perceptions depicted a lack of distinct systems and structures for ICs to participate in coaching activities with mathematics teachers.

Learning Forward (2017) devised the *Standards for Professional Learning* to outline seven attributes of effective professional learning for educators. The lack of coherent structures depicted in principal perceptions correlates to the leadership standard,

which describes three specific components: advocacy for professional learning, creation of systems and structures for support, and development of capacity for learning and leading. As it related to instructional coaching, only one of the four principal participants, Principal D, described experiences demonstrating coherent structures addressing each component. Principal D advocated for professional learning by establishing expectations for IC work with mathematics teachers via coaching cycles and monitoring those expectation by reviewing established data collected for effectiveness. In addition, she created systems and structures through the implementation of coaching cycles, set meetings, and evaluation of coaching effectiveness through the usage of an anonymous Google survey. Principal D stated in the interview,

> So, I require my coaches to keep binders, notebooks that are organized by coaching cycles. Um, we organize the work in team of cycles of coaching and therefore there is documentation of informal observations, planning notes, emails, instructional support plans that outline the focus area of the work, the type of work, the type of coaching that the will be engaged in. And so, I review the coaches' notebooks at the end of each coaching cycle to identify the work and impact of the coach.

Further, IC capacity was increased with specific professional learning geared towards expanding their knowledge on coaching activities like providing constructive feedback and greater fidelity with coaching cycle implementation. Principal D described the specific professional learning as,

> [W]e have biweekly coaches' meetings where I specifically build their capacity around a coaching, where we read articles, we discuss coaching practices, we discuss scenarios and how to provide feedback, what does effective feedback look like and how you actually participate in this coaching cycle. And those are biweekly on Fridays.

Principals A, B, and C disclosed principal perceptions which revealed aspects of structure with instructional coaching for mathematics teachers, however; not all aspects were evident. For example, Principals A and B developed systems and structures for ICs to work with mathematics teachers during collaborative planning, professional learning, and practice of new instructional strategies. Principal B stated, "But our coach meets with our math team twice a cycle, every single cycle. I attend those meetings as much as I can." Principal A explained, "[O]ftentimes for math professional development, we collaborate on what that professional development should look like. [A]nd she, over the course of the year, she has helped to lead that professional development."

Principal C offered perceptions which depicted the least amount of structure, particularly with ICs being assigned to plan and teach mathematics intervention (Study Island) with students each day. She shared, "[I]n the interim, we use Study Island and, interestingly enough, our coaches, the role that they were pulled away from and put into is as a Study Island teacher here in the building. Um, so each of them at each grade level, they have a class every day with all their kids in the grade level just for Study Island". Campbell and Griffin (2017) stated when coaches are assigned duties beyond their regular coaching assignments, it leads to less time to influencing the school's

mathematics program and student performance. None of the principals described ways in which they coordinate professional learned geared towards support of the IC growth in their coaching capacity. The usage of calendars, schedules, or other structures employed to provide consistency to IC interactions with teachers among the three remaining principal participants was not consistent as well. Those structures may be indeed utilized, however; they were not evident from the interviews. Moreover, none of the principals described ways in which IC effectiveness is monitored, which Nooruddin and Bhamani (2019) indicated are crucial to ensure professional learning is successful, and if not, differentiated supports may be applied.

Discrepant Case

A discrepant case is defined by Merriam and Tisdell (2016) as a data not consistent with emergent themes of a study's findings. To establish credibility, data were intentionally and purposefully reviewed and checked for discrepant cases. Nearly all the data and findings were connected to and supportive of the emergent themes, however, one participant, Participant C, did not initially identify any ways in which she noted instructional coaching effect mathematics teacher performance. Participant C indicated this mainly due to the model of instructional coaching utilized in her school district, one which relied heavily on the coaching process being strictly confidential and only shared between the coached teacher, IC, and district office administrators (Note: supervision and delegation of instructional coaching was maintained solely at the district office level of the school district.).

Because of the confidentiality of the coaching model, Principal C shared in

previous years she was not aware of which teachers were working with the school's instructional coach and who was not. Because of this, Principal C initially indicated she did not notice any impact of the IC on mathematics teacher performance, either positively or negatively. With a school-based model of coaching now employed, she was able to speak to instructional coaching impact, however; the scope was much more limited than the other participants. At the same time, Principal C indicated the ICs in her school were also responsible for being the mathematics or reading Study Island teacher for students, which did take away time from their ability to coach mathematics teachers at some point of the day, every day of the week.

Evidence of Quality

In my project study, I sought to attain accurate and credible findings through the executed research methods, analysis, and reporting. Lodico et al (2010) explained credible research is established in at least two ways, and through those ways, validity may be applied to a study and its findings. The first way to establish credibility is through the usage of specific research methodology designs which will provide a true and thorough representation of the participant's experience. The second way is ensuring the data analysis interpreted is accurate in its portrayal of the participant as it was meant to be.

To establish credibility, I used an interview protocol for each interview, to limit variability as well as reduce bias. Once interviews were transcribed, member checking was utilized for accuracy. Merriam and Tisdell (2016) described member checks as an internal validity strategy used to gain feedback from participants once initial findings

have emerged from interview. Each participant was provided a copy of the transcription and emergent themes, to eliminate any misconstruing of responses to the interview questions. None of the participants replied to me with corrections, revisions, or objections to the emergent themes or transcriptions. The lack of objections were confirmation of the data accuracy and trustworthiness. In addition, a peer review was conducted by a recent graduate student highly familiar with professional development and professional learning as both a former instructional coach and current building principal. Her review of the axial coding and study findings indicated they were accurate and could be clearly seen by someone who may not have any experience with school administration as a principal, or as an instructional coach and/or classroom teacher.

Summary of the Study Outcomes

The problem of this study identified middle school principal perceptions on instructional coaching effectiveness for mathematics teacher performance. The study applied the social constructivist theory because the perceptions of a principal regarding instructional coaching effectiveness is both personal, as well as their own unique experience. To further investigate this problem, I concentrated on one research question:

How do principals perceive the effect of instructional coaching on middle school mathematics teacher performance?

Through interviews with principals, I obtained a deep understanding of their perspective on the effect of instructional coaching on mathematics teacher performance. An analysis of the interview data revealed four common themes regarding principal perceptions. First, each of the participants viewed the IC as a partner. The partnership extended from

developing professional learning goals and outcomes for increasing teacher capacity to the review of student performance data to recognize overall school trends in student performance. In addition, the majority of the middle school principals perceived the IC as an influencer to increase fidelity of instructional practices of mathematics teachers. Principals believed the opportunities for co-planning, one-on-one differentiated support, and practice of new strategies, mathematics teachers engaged in instructional practices with greater fidelity than they do when the practice is introduced by the principal. Third, principals perceived themselves as a champion of instructional coaching. Principals perceived themselves as champions in a variety of ways, from increasing the capacity of their instructional coach to encouraging teachers to utilize coaching services. Fourth, despite each principal perceiving the IC to be a partner, influencer, and someone to champion, those perceptions were not always consistently structured. The perceptions depicted a lack of coherent structure for instructional coaching with mathematics teachers.

The perceptions of principals on the effectiveness of instructional coaching on middle school mathematics teacher performance is a new phenomenon studied. Each principal had responses which indicated belief in instructional coaching effectiveness. These perceptions are in line with the larger body of literature on principal perspectives on instructional coaching. Bengo (2016) indicated instructional coaching allowed for teachers to attempt new instructional practices through personal leadership, collaboration, feedback from an educator considered a peer, and personal responsibility. Further, as principals perceived the IC as a partner, that perception is supported by Ippolito and Bean

(2019), who explained a principal who fosters a collaborative relationship with an instructional coach is critical in raising teacher capacity and building a school culture which welcomes instructional coaching as an essential support.

At the same time, only one principal described and explained coherent structures in place for instructional coaching with mathematics teacher to occur consistently. Those structures allowed for that principal to tangibly notice if the day-to-day, week-to-week work of the IC was effective on mathematics teacher performance. The remaining principals mainly derived their perceptions of effectiveness of the IC on mathematics teacher performance through interactions with teachers, and with two of principals, benchmark data. Further, one principal utilized the ICs as classroom teachers. These perceptions about IC effectiveness may be due to an uneven foundation of what instructional coaching is, what to expect when an IC works with teachers, and perceiving some aspects of effectiveness from a teacher lens rather than an administrator lens.

Description of the Project Deliverable

The findings of this study supported the design and implementation of a professional development opportunity for principals to deeply ground their knowledge about instructional coaching. In addition, the professional development will allow for principals to derive strategies for measuring its effectiveness in schools to impact mathematics teacher capacity, as well as other content areas. The accompanying 3-day professional development will provide middle school principals with a clear definition of instructional coaching and its role in professional development, the various types of instructional coaching models and cycles to utilize with teachers, and the opportunity to

align effective instructional coach moves to the current teacher observation tool, in order to uniformly observe and evaluate IC effectiveness.

Section 3: The Project

Introduction

The purpose of this basic qualitative study was to explore middle school principal perceptions on the effectiveness of instructional coaching on mathematics teacher performance. I conducted a study with four central Pennsylvania middle school principals representing a variety of suburban and urban districts. An analysis of student performance data on the Pennsylvania State Systems of Assessment (PSSA) found most Grade 6-8 students in the participating districts performed below or close to the state average, around 38% proficient. Each principal has had a relationship with their instructional coach (IC) for at least 1 school year, and two of the four ICs served in a generalist role, meaning, they are not content-specific and provide support for teachers in all content areas for both instructional and behavior management strategies.

I collected data for the study through the conduction of four semistructured interviews of middle school principals. From data analysis, I discovered nearly each principal perceived the IC to be a partner to chart teacher development, an influence on mathematics teacher fidelity to instructional strategies, and as someone they needed to champion to increase teachers to seek support from, as well as someone they provide support to. However, through data analysis I also uncovered the majority of principals lacked coherent structures for instructional coaching with mathematics teachers. Based on the data analysis and wide-ranging yet common perceptions derived from the principals, I developed a 3-day professional development exclusively for principals (and if available, also assistant principals), to be implemented midsummer, prior to finalized

plans for professional development and learning opportunities for mathematics teachers have been submitted. In this section, I discuss purpose and goals of the project, rationale, activities, a review of current literature, as well as implications and a method for evaluation.

Rationale

The problem of this study was that despite the heavy implementation instructional coaching as a job-embedded and ongoing professional development strategy in central Pennsylvania middle schools, the perspective of principals on its effectiveness was largely unknown. Further, research on the effectiveness of instructional coaching in middle schools and content areas beyond literacy on mathematics teacher performance was extremely limited, as most studies focused on elementary schools and/or literacy. From the study findings, I discovered middle school principals perceived the effectiveness of instructional coaching on mathematics teacher performance in three ways: ICs were perceived as a partner, as an influencer to increase instructional strategy fidelity by teachers, and as someone to champion. From the findings, I also discovered most middle school principals lacked coherent structures for instructional coaching with teachers. From this analysis, I found that while the perceptions of the middle school principals were common, an uneven knowledge base of what instructional coaching was and the types of systems and structures to ensure instructional coaching was successful existed. Because of this, I developed a 3-day professional development to build principals' capacity in these areas.

I chose to implement a 3-day professional development session to define the purpose and role of instructional coaching, to establish a coaching vision, to define a clear principal/IC partnership agreement, and to align critical coaching attributes to the current teacher observation tool used in Pennsylvania. I decided upon these three specific deliverables based on the data analysis from this study. Each principal rightfully brought their own perspective on the effectiveness of instructional coaching on middle school mathematics performance; however, each also had their own thoughts on the ways in which instructional coaching should be employed in their schools. In two of the schools, the IC worked with all mathematics teachers. In another school, the IC worked with first year and struggling mathematics teachers, in another the IC worked with all teachers strictly on a confidential basis until the current school year. All four of the principals described a variety of ways effectiveness of the instructional coaching on mathematics teacher performance. During data analysis, each principal monitored and evaluated effectiveness on mathematics teacher performance in their own way, and effectiveness was subjective to the depth of interaction the principal had with the IC in their building. All four used state assessment results to measure effectiveness, however; those data results are unavailable until mid-summer. In addition, all four principals monitored IC effectiveness on mathematics teacher performance informally; however, the tool used was not uniform or coherent in structure for each.

The sessions will take place during the summer before professional learning opportunities for mathematics teachers are finalized for the upcoming school year and pre-service activities for principals have begun. Each day of the 3-day sessions will

focus on one specific area outlined above. The first day will focus on the purpose and role of an IC and a vision for instructional coaching, the second day will focus on coaching styles and effective coaching cycles, and the third day will focus on aligning the current teacher observation tool with critical coaching attributes in order to uniformly observe ICs.

Review of the Literature

The findings of my data collection and subsequent analysis revealed the need to address professional development for middle school principals. I conducted a literature review utilizing the databases at the Walden University Library. I primarily searched ERIC, Education Sourced, EBSCO ebooks, and SAGE for scholarly peer-reviewed articles from 2015 to the present. I used following search terms to conduct the literature review: *andragogy; adult learning theories; principals and professional development and participation, engagement, involvement;* and *instructional leadership and principal.* There is a plethora of research on the application of professional development for principals; however, there is a limited yet growing body research on the role of principals in professional development implemented in schools.

Andragogy

The 3-day professional development experience for middle school principals was designed with Malcolm Knowles' theory of andragogy as the conceptual framework. Knowles (1980) defined andragogy as "the art and science of helping adults learn" (p. 43). Andragogy approaches adult learning from a different perspective than pedagogy, the art and science of teaching students, and is couched in six assumptions (1973, 1984).

The six assumptions describe an adult learner as someone who:

1. Can direct their own learning.
2. Has a pool of life experiences which serves as a dearth of learning resources.
3. Has learning needs tightly associated to their roles in society.
4. Is challenge-focused and wants to apply new learning right away.
5. Is motivated to learn from intrinsically rather than extrinsically.
6. Must learn the "why" behind the new knowledge they are making.

Merriam and Bierema (2013) indicated each of these assumptions must be taken into consideration when designing, executing, and evaluating adult learning activities. In addition, the facilitator must include the adult learner in the design, execution, and evaluation of such activities, with a climate which respects the adults as both learner and one with experiences (Knowles, 1984). Unfortunately, Colburn, Stephenson, and Keating (2019) indicated professional development for adults often does not take into consideration andragogy. Learning for educators can frequently be lecture, with the new learning disconnected from the actual learning the educator needs and/or desires (Armour, Quennerstedt, Chambers, & Makopoulou, 2017). As the project I designed is for middle school principals, it was essential to design activities in mind for educators who are in positions of authority and are often directing and guiding staff on how to best work in their positions. In addition, because principals were learning about an adult- and problem-centered approach in instructional coaching, I designed activities that would allow them to think of immediate and tangible ways instructional coaching supports teachers in the moment.

Further, the analysis of the data revealed a lack of coherence in systems and structures for instructional coaching to occur effectively, which is a crucial need for instructional coaching to be successful. This professional development project is the start of meeting this need, as the activities focus on closing the gap of where principals currently stand with some systems and structures in place connected systems and structures for both principals and ICs to thrive. Knowles, Holton, and Swanson (2015) considered this gap to be a learning need, as the learners' current level of ability is not where the desired competency wishes to be. As principals are the observers and evaluators of teaching in schools, providing them an opportunity to align IC behaviors to the current teacher observation tool confirms the IC role is not only important but also essential in knowing if it is effective. McAuliffe, Hargreaves, Winter, and Chadwick (2009) as cited by Akyildiz (2019) described the role of an adult teacher as tutor and mentor, to help learners become self-directed. As principals become self-directed in their learning of instructional coaching through this 3-day professional development, implementing their new learning will lead to a more effectively employed instructional coaching program.

Principal Role in Professional Development

The findings from this study, I learned all middle school principal participants found instructional coaching to be effective in impacting mathematics teacher performance; however, most of their perceptions largely depicted lack of a coherent structure for instructional coaching within their schools. As instructional coaching is a job-embedded professional development strategy utilized in schools, understanding the

principal's role in professional development is essential. Professional development in schools has shifted from a passive experience of one-time workshops to active, hands-on, and job-embedded opportunities for teachers to increase their knowledge and skills in content, pedagogy, and classroom climate (Guskey, 2000; Koonce, Pijanowski, Bengtson, & Lasater, 2018). Because of this shift, it is critical for principals to be extensively involved in identifying and evaluating the teacher professional learning needs to design and implement meaningful activities to meet such needs (Koonce et al., 2018). Further, principals are crucial in also identifying the time, funding, and personnel to execute quality professional learning for teachers (Attebury, 2018; Ly, 2015; Meier, 2016).

Moreover, principals play an influential role in teachers' engaging fully in professional development, or simply being compliant in participation (Goldsmith, Doerr, & Lewis, 2014; Hilton, Hilton, Dole, & Goos, 2015). Active and knowledgeable principals who engage in their school's professional development are much more likely to accurately diagnose, plan, and assess teachers' professional learning needs (Koonce et al., 2018). In addition, principal involvement in professional learning can both directly and indirectly influence teacher self-efficacy through continuous interactions with teachers in one-on-one, collaborative, and other development settings (Liu & Hallinger, 2018).

Further, principals who support increasing teacher capacity devise and implement systems which support professional development design, implementation, and evaluation (Brion, 2020). Of the seven professional learning standards developed by

Learning Forward (2017) to outline effective professional development characteristics, the leadership standard indicates school leaders need to input systems and structures such as calendars, a daily schedule, and other resources to support professional learning; expand capacity for learning and leading; and advocate for professional learning. In the study, just one of the principal participants had clear systems and structures for supporting instructional coaching of mathematics teachers in the school; the remaining participants had pieces of structures (e.g., informal meetings, collaborative planning) yet not a fully coherent structure to support instructional coaching to its greatest potential.

Moreover, only one of the principals specifically designed professional learning to expand the capacity of the IC; none of the other principal participants described professional development opportunities to cultivate growth in the IC. Knight et al. (2015) explained ICs need professional learning opportunities, so as to gain a deeper understanding of working with adults, how to focus on a prearranged cadre of effective teaching practices, and work in a system which of itself promotes professional learning. Learning Forward (2017) indicated such opportunities allow for not only increase capacity of those who provide professional learning, but also provides occasions for the school leader to establish high expectations for performance, and to use data to offer consistent constructive feedback.

As principals create a coaching vision, develop IC expectations for working with teachers, and learn more about the strategy of instructional coaching itself, they will be able to incorporate strong systems and structures. These systems and structures will allow for ICs and teachers to participate in sound coaching activities as well as provide

principals set times to provide professional learning to grow ICs own capacity to support teachers as effectively as possible. One such structure could be to ensure IC time is maximized in classrooms. This would eliminate ICs being used to complete noninstructional tasks such as making copies or filling in as a substitute teacher during the day (Gibbons & Cobb, 2017). In a study of a mathematics teacher support initiatives across four U.S. school districts, Kane and Rosenquist (2018) described the need for principals and ICs to reach an agreement in which to guarantee the IC will spend the bulk of the instructional day focused solely on coaching and instead of other teacher duties.

In addition, principals play a critical role in monitoring and evaluating the effectiveness of implemented professional development in schools through a variety of methods, including data review and classroom visits (also described as walk throughs). In a case study of school leadership engagement in continuous teacher professional development Nooruddin and Khan (2019) noted for school leaders to recognize the need to monitoring and evaluate continuous professional development for effectiveness, barriers to success, or other unintended impediments. In addition, in a case study to understand leader and teacher perspectives on professional development, Brion (2020) indicated a necessary component of professional learning evaluation is assessing learning transfer, thus, the ways in which new concepts and skills from professional learning integrate into teacher instruction. She indicated learning transfer is most often the missing link in effective professional development.

Monitoring and evaluating IC effectiveness through classroom visits, shadowing,

review of collected evidence, an observation tool, or other formative or summative measures can greatly support the IC, coached teachers, and principal to know this strategy is reaching the goals set forth. During the last day of the project, principals will align coaching attributes to the current teacher observation tool. This observation tool is couched in the Framework for Teaching Evaluation Instrument (Danielson, 2014); connecting coaching behaviors to specific teacher moves related to planning, classroom environment, instruction, and professional responsibilities will allow for principals to denote IC effectiveness, as well as offer support if the IC is not having success with a teacher. Woulfin and Rigby (2017) explained feedback from an IC to a teacher can be utilized as a way for principals to assess coaching effectiveness, largely because IC feedback is informed and genuinely meant for teacher growth.

Instructional Leadership

Instructional leadership is defined in a multitude of ways and is associated with behaviors which focus on cultivating teacher growth and student achievement. Steel (2013) as cited by Özdemir, Şahin, and Özturk (2020) defined instructional leadership as "the act of aiming to achieve success in the teaching-learning process and raising successful students for society, providing the desired conditions for learning and teaching, increasing the satisfaction of school staff, and transforming the school into a productive environment" (p. 26). Tan (2012) as cited by Özdemir et al. (2020) defined instructional leadership as "the direction, resources, and support given by principals to teachers and students for the improvement of teaching and learning" (p.26). Hallinger and Murphy (1985) as cited by Myran and Sutherland (2019) has roughly defined

instructional leadership as “the role of leadership in defining the school’s mission, managing instructional programs, and promoting a positive school climate” (p. 667). Brazer and Bauer (2013) as cited by Shaked (2018) defined instructional leadership as “the effort to improve teaching and learning for PK–12 students by managing effectively, addressing the challenges of diversity, guiding teacher learning, and fostering organizational learning” (p. 517).

An instructional leader steers their teachers in the improvement and execution of curriculum and is inspirational to teachers, parents, and students (Özdemir et al. 2020). They also cultivate a school climate that fuels and backs professional learning opportunities for teachers to participate in on a consistent and meaningful basis (Liu & Hallinger, 2018). Yirci, Karakose, and Kocabas (2016) explained a principal is responsible for cultivating a coaching culture within a school and should be viewed as a coach to push teacher motivation. In addition, an instructional leader fosters a climate where teachers are reflective on their practice, successes, and challenges in the classroom (Miller, Wargo & Hoke, 2019). Further, Hallinger, Liu, and Piyaman (2019) stated an instructional leader garners trust from teachers, as the environment created both teachers and school administrators to take risks without fear of repercussion. At the same time, Micheaux and Parvin (2018) stated there are few school districts which provide explicit professional learning opportunities for principals themselves to learn the critical skills needed to be a strong instructional leader.

This intended project will support principals to grow as instructional leaders, as their increased knowledge about instructional coaching will afford them tangible ways

to cultivate a culture which encourages continuous teacher learning, partnership, and collaboration. Also, as the principals learn about the various coaching models and cycles an IC can implement, they can make a conscious decision on the most effective models and type of cycle to utilize with the IC. Miller et al. (2019) explained principals who were well versed in the types of coaching cycles and models an IC could implement were able to collaborate intentionally with the IC to support teachers for specific instructional needs, rather than a "one size fits all" approach. In addition, the established coaching vision will assist the school in achieving the overall school vision for teacher growth and ultimately student achievement. This will ensure principals are designing and executing professional development for teachers will not only meets the needs of teachers, but also affords the IC to interact with all teachers.

In addition to cultivating a school climate which encourages constant occasions for professional learning, an instructional leader cultivates a school climate which promotes a shared vision, taps teacher leaders for effective distributed leadership opportunities, and establishes trust. In a mixed methods study on school climate, principal support and teacher collaboration, Silva, Amante, and Morgado (2017) explained surveyed teachers were more apt to trust each other, work together, and work towards the same goals when they felt the principal supported these behaviors explicitly with the time, resources, and an approach to make everyone feel that they belonged at the school. As an instructional leader nurtures a school climate of high expectations, this can be accomplished by providing teachers with meaningful opportunities to interact with the IC, whether during common planning time, peer observations, or other feasible

settings (Kraft & Gilmour, 2016). Principals can often view instructional leadership as limited to informal and formal classroom observations (Wallin, Newton, Jutras, & Adilman, 2019).

Learning the ways to effectively utilizing instructional coaching with all teachers not only garners intentional time for teachers to collaborate, it also distributes leadership to an IC to strengthen teacher capacity in tandem with the supports a principal provides (Myran & Sutherland, 2018). From my study findings, I discovered one of the principals tapped the ICs in her school to disaggregate mathematics benchmark student data, however; the data was not shared with mathematics teachers for their growth and knowledge of student strengths and challenges. In addition, ICs were teaching the intervention course which generated the data. Their strong data analysis skills were not effectively used with teachers in a manner to collaborate, partner, and strategize how to best support students. This untapped skill and collaboration put teachers at a deficit with their professional learning around both data analysis and more effective implementation of the mathematics curriculum, rather than at an advantage. Participation in the three-day professional development will also provide principals with an opportunity to now cultivate a more collaborative relationship with ICs around all facets of school, including curriculum and instruction. This characteristic of an instructional leader allows for teachers, ICs, and principals to engage in instruction in a non-judgmental way (Backor & Gordon, 2015).

Project Description

This project is a 3-day professional development designed to give principals an inside view into instructional coaching and be able to know and understand the role of an instructional coach to support mathematics (and other content teachers) in order to effectively monitor and evaluate effectiveness. “The Middle School Principal’s Guide to Instructional Coaching” will provide principals with a well-defined explanation of what instructional coaching is as a job-embedded professional learning strategy, a clear description of the role and purpose of an instructional coach working with mathematics teachers (and other content teachers), and to create an observation tool to evaluate the effectiveness of an IC’s impact on mathematics teacher performance, while deriving clear principal expectations. While principals are the focus of this training, their assistant principals will also be invited to attend, to ensure administrative teams are together when learning this new information and skills, as well as crafting expectations. Ongoing professional development would be best offered monthly, for principals to reflect, learn more about the strategies of instructional coaching, and collaborate with other principals to support their instructional coaches.

The goals of this professional development are four-fold: to increase middle school principal awareness of instructional coaching as a job-embedded professional learning strategy; to establish an instructional coaching vision for working with mathematics (and other content) teachers; to create a principal/IC partnership agreement; and to align critical instructional coaching attributes to the current teacher observation tool in order to successfully monitor and evaluate an IC impact on mathematics teacher

performance. Each principal had a working knowledge of what an IC was to do and their purpose; however, the depth of that knowledge was not consistent. Principals acknowledged the confidentiality of the work ICs did with teachers in the school, yet at the same time, were not always sure of how to measure whether or not the work of the IC had indeed been impactful to mathematics teachers and their work in a measurable way. Further, the perception of each principal in the ways in which they could champion the work of the IC varied, as some viewed champion as a defender of working with an IC, while another viewed champion as providing training, professional learning, and other supports to the IC to grow their capacity. Allowing principals to establish a clear vision of what instructional coaching is in a middle school, along with a standardized partnership agreement, and aligning the teacher evaluation tool with coaching attributes to measure effectiveness would afford them more objective tools to assess instructional coaching impact on teacher performance.

Needed Resources, Existing Supports, Potential Barriers, and Solutions

To implement the "Middle School Principals Guide to Instructional Coaching" successfully, several resources will be needed. First, I will meet with the Director of Curriculum and Instruction and Instructional Coaching Supervisor at the local Intermediate Unit to discuss the workshop and gain their approval to host for the conglomerate of school districts the Intermediate Unit supports. Upon their approval, I will need the workshop sessions summer dates confirmed and advertised via email, at curriculum advisory meetings, and on the Intermediate Unit's professional learning website. In addition, a location at the Intermediate Unit for holding the 3-day session, as

well as critical professional learning tools (e.g., markers, laptop cart, speakers, posters, writing utensils, post-it notes, highlighters, etc.) will be needed to be secured.

Further, session handouts (including a "notes edition" of the PowerPoint presentations), articles for pre-reading and homework, as well as formative and summative assessments will need to be photocopied for participants. Lastly, continental breakfast will need to be ordered for all participants, inclusive of pastries, fruit, coffee, and tea, in addition to snacks and water for morning and afternoon breaks.

Currently, there are no known existing supports provided by the local Intermediate Unit and school districts to support principal learning regarding instructional coaching or evaluating its effectiveness in mathematics (and other content areas). There are existing supports for ICs, through the Intermediate Unit, however; that support is by grade band, and not content area. Those supports are in the form of half-day professional development sessions and a website devoted to housing instructional coaching resources. This professional development session would seemingly be the first offered solely for principals to increase their awareness on instructional coaching.

A potential barrier for the implementation of the workshop sessions is hosting them in the summer. Principals may be on vacation and could possibly send their assistant principals in their place, or neither principal nor assistant principal(s) attend for an entire school. An additional potential barrier may be the dates for the workshop session conflict with pre-service training dates for local district training. A solution for both potential barriers will be to select consecutive dates in late July and/or early August, so principal availability and attendance will be at a premium. An additional solution

would be to partner with districts served by the Intermediate Unit to utilize the workshop sessions as a pre-service training kick-off, to ensure those dates did not conflict.

Proposal for Implementation

I will meet with the Intermediate Unit's Director of Curriculum and Instruction and Instructional Coach Supervisor in the spring. Once the professional development has been approved by them, I will request to attend the May or June Curriculum Advisory Council (CAC) meeting, in order to share the professional development session overview and details with local superintendents and other designees in attendance. A flyer will be prepared to share with them at the meeting so they can begin to share with their middle school principals. In addition, a flyer and email verbiage will be sent to the Director of Curriculum and Instruction for sharing with middle school principals via their list serv. Once the professional development is inputted into the Intermediate Unit's online professional learning portal, 48 Carats, online registration will be open for five weeks, from the beginning of June through the first week of July. Upon registration, all participants will receive a confirmation email, as well as an article for pre-session reading, "The Principal as Formative Coach." The workshop sessions will take place in late July or early August, on three consecutive days.

Table 3

Timeline of Professional Development

Day #	Session Topic Overview	Session Outcomes
1	What is Instructional Coaching?	Principals will explain what instructional coaching is as a job-embedded professional learning strategy in a school; describe the roles and responsibilities of an instructional coach; and create a vision of how instructional coaching looks in their schools.
2	How Many Ways Can You Coach Me, Coach?!	Principals differentiate between the six ways instructional coaching can occur in a building; describe various coaching styles an instructional coach can implement in a school; and finalize the vision of how instructional coaching looks in their schools.
3	Set the Expectation & Inspect It!	Align the current PA teacher observation tool with coaching attributes which would improve teacher performance and develop clear principal expectations for instructional coaches and their work.

Roles and Responsibilities

My role in the workshop sessions are for all facets of it, from implementation to execution. I am responsible for the initial receipt of approval to offer the sessions, as well as presenting the workshop session as a professional learning opportunity to area superintendents at the May or June CAC meeting. I am also responsible for creating all advertisements for the session, including any flyers and email crafting to send out to principals via the Intermediate Unit list serv. In addition, I am responsible for crafting the sessions description for posting on the Intermediate Unit professional development portal. Further, I am also responsible for photocopying, organizing, and preparing all participant handouts and folders for the sessions. Moreover, I am responsible for the facilitation of the sessions, utilizing formative evaluations throughout each day to assess new learning occurring, as well as engaging with participants to answer questions in the moment, as well as during "off" times, such as during breakfast, lunch, and at the end of each session day.

While I am the primary person responsible for the design, implementation, and execution of the "Middle School Principals Guide to Instructional Coaching," there are other persons vital to the professional development's success. First, middle school principals are the pursued audience for these professional development sessions; their attendance and attention are essential. For schools with assistant principals, their attendance with principals will also be key, as this new learning is best learned together as a team; implementation with little to no "train the trainer" curve will be much more effective than turn-key training with principals coming alone. In addition, the

Intermediate Unit Director of Curriculum and Instruction and Instructional Coach Supervisor are critical not just for session approval, but also for providing me access to local school district superintendents at the CAC meeting, as they are also crucial conduits needed for buy-in to promote the sessions to middle school principals.

Project Evaluation

Effective professional development utilizes evaluation measures to assess if learning has occurred. To be considered effective, it will be necessary to gauge this professional development's effectiveness throughout each session and when it is completed.

Formative Evaluation

Formative assessment is widely understood and utilized as a strategy to measure new learning and to guide instruction which follows. There are multiple ways to engage in formative assessment, including questioning and reflection (Milawati, 2017). I will formatively assess participants throughout the session's learnings, as well as at the end of each day. The formative assessments will include questioning at the end of key learning, allowing for participants to complete brief reflections such as a "think-pair-share" with a partner, as well as silent reflections. In addition to these formative assessments, I will also take notes on each PowerPoint slide page (my own print out to follow while presenting) in order to capture in-the-moment learning and teachable lessons that may arise during share-outs, "think-pair-share" engagements I overhear, and "aha moments". The administration of these formative assessments will allow me to learn in real time if

participants are gaining new knowledge or if it is necessary to adjust the presentation to meet their needs in a different way than I had intended.

Each day will also be formatively assessed at the end, with an exit ticket. They will consist of three questions, “In what ways were today’s session outcomes accomplished?”, “What will you share with other school leaders about today’s learning?”, and “What deeper dives into today’s topics would be useful to solidify your new/additional learning?”. These three questions will allow me to gain insight into the learning of each participant not only each day, but also cumulatively, as new learning is added as needed during session two and session three. These questions also allow me to meet each participant needs, by learning the ways they feel the session outcomes were accomplished and ways in which I can support additional learning. As the goal of this project is to learn more about principal perspectives on IC effectiveness, these real-time and in-the-moment evaluations are critical.

Summative Evaluation

Summative evaluations are utilized to assess if learning has occurred, as the culminating activity (Omowunmi & Hiatt, 2017). All participants will be provided a summative evaluation at the end of the third day to assess their learning. This summative evaluation will not be used to provide formative feedback, as that is not the purpose of summative assessments. Guskey (2014), as cited by Merchie, Tuytens, Devos, and Vanderlinde (2018), explained evaluating professional development allows for a high-quality understanding of how it has impacted positive change, improved practice, and to serve as a guide to assess reform. The results of these summative evaluations will inform

future professional learning for middle school principals to grow in their knowledge of instructional coaching and the tenets of it as a job-embedded professional learning strategy.

Evaluation Goals

The overall goals of this workshop is to increase middle school principal awareness of instructional coaching, to expose them to the types of instructional coaching cycles and ways in which instructional coaching can be implemented, establish clear principal expectations, and to create an observation tool for ICs. The goals of both the formative and summative evaluations align with the goals of the workshop, as they will provide both real-time awareness of principal learning as well as useful data for developing on-going professional learning. In addition, the evaluation data will afford me insight into topics and concepts principals learned well, those which need reinforced, and those which may need to be differentiated to meet the needs of individual principals. These data can lead to topics to engage principals in during ongoing, monthly professional learning sessions for them. This can also lead to principals establishing a portfolio to demonstrate new learning application and growth over the school year.

Key Stakeholders

The key stakeholders for this project are middle school principals (and their assistant principals if applicable), ICs, mathematics (and other content area) teachers, and students. Middle school principals (and their assistant principals if applicable) are the most key stakeholders for this project. Because the project is designed to increase principal awareness about instructional coaching, ICs are the considered the second-most

key stakeholder for the project, as this new knowledge may increase their collaboration to support mathematics teachers, as well as make it more intentional. In addition, the increase in principal awareness about instructional coaching may lead to the development and implementation of principal-created professional learning opportunities for ICs. Mathematics (and other content) teachers and students are also stakeholders for this project because of the application of principals' new knowledge about instructional coaching, they will benefit the greatest from increased involvement by the principal to support the school's IC.

Project Implications

An analysis of the data from this study uncovered middle school principal perceptions of instructional coaches to impact mathematics teacher performance viewed them as partners, influencers of instructional strategy fidelity, and as their champions. The data also revealed most of the principals did not have coherent systems and structures for instructional coaching of mathematics teachers. This may be due to a lack of uniform awareness of what instructional coaching was, how to establish strong principal expectations of ICs, and how to best monitor and evaluate what effective instructional coaching looked like with mathematics teachers. The professional learning principals receive may adapt their perception on how to effectively capture IC impact on mathematics (and other content area) teacher performance. Principals may also increase in their collaboration with IC and establish a more intentional partnership from developing clear IC expectations when working with mathematics teachers. Principals may also be more specific in their assessment of mathematics teacher fidelity to

instructional strategies as they align IC behaviors and performance to the IC critical attributes aligned to the current teacher observation and evaluation tool.

Principals are charged with establishing student learning expectations and creating a culture to promote school improvement (Hilton et al., 2015). As principals expand their knowledge and skills on how instructional coaching styles and cycles, as well as supporting ICs in meeting the established expectations and fulfilling the principal/IC agreement, teachers may benefit from more intentional and aligned support. This may lead to an improvement in students' performance in mathematics (and other content areas). Further, the professional development may afford principals greater insight into the ways job-embedded professional learning can improve teacher performance via peer feedback, modeling, demonstrating, and other strategies ICs employ.

Relating to the local problem, this project may provide tangible strategies for middle school principals who have struggled with measuring the effect of their IC to increase the performance of mathematics teachers in their schools. More specifically, because middle school principals have struggled with ways to clearly and definitively identify concrete links between instructional coaching and improvement in certain components of teaching as well as how the IC effects long-term change in mathematics instruction, this project may increase principal capacity to implement the IC critical attributes when observing and evaluating ICs and document change outside of anecdotal notes and end-of-year state assessment data. Moreover, this project may provide principals with tools and strategies to also calibrate mathematics teacher supports and offer differentiated professional development to their building IC.

In the larger context, this project may also provide principals with tangible experience on how to best implement instructional coaching as an effective professional learning strategy in their schools. As principals are instructional leaders in their schools, being able to navigate the responsibility of providing quality teacher development is critical (Kraft & Gilmore, 2016). Teachers and school leaders can hold negative views about mathematics, and those views can influence the effectiveness of mathematics instruction to students (Chapman & Mitchell, 2018). This project can support middle school principals and school districts bring about the necessary social change to positively influence student mathematics performance.

Section 4: Reflections and Conclusions

Introduction

Instructional coaching is a popular job-embedded professional learning strategy that is used with mathematics teachers in several middle schools in central Pennsylvania; however, principal perceptions on the impact of this strategy on teacher performance is widely unknown. The purpose of this basic qualitative study was to discover middle school principal perceptions on the effect of instructional coaching on mathematics teacher performance. Findings from the study showed that middle school principals perceive the IC in their schools to be a partner, an influencer of fidelity to instructional practices, and a person (and strategy) to be a champion of and for. Findings also showed those perceptions depicted a lack of coherent systems and structures for effective instructional coaching with mathematics teachers. To provide uniformity in principal perceptions on the effect of instructional coaching, I created *The Middle School Principal's Guide to Instructional Coaching*, a 3-day professional development workshop. In this section, I will present my reflections and conclusion about the project.

Project Strengths and Limitations

Project Strengths

The strength of this project is it has been created from the findings of this study and will support principals with a strong foundation of what instructional coaching is as a job-embedded professional learning strategy, as well as clearly define and observe what instructional coaching looks like. Henwood (2013) indicated principals are utilizing every possible approach with teachers to improve student achievement. As instructional

coaching is an approach occurring in their schools, this professional development project will calibrate principals' definition of instructional coaching, expose them to various coaching models an IC may implement, and establish clear principal expectations and views of IC performance. Klein et al. (2015) argued time is a critical component for persons to take new learning, skills, and competencies to put into practice. Providing middle school principals professional development over the summer allows them to be completely focused on new learning, and not have their time and attention diverted to address the day-to-day challenges school brings. Further, principals are working together in a collaborative manner. Darling-Hammond, Hyler, and Gardner (2017) stated collaborative approaches to professional development allow for school-wide understanding, change, and change can occur.

Limitations

A limitation of this project is the timeframe of the professional development, as it is established tightly, and may not provide principals with adequate time for learning transfer of new content to long-term moves. Thomas (2007), as referenced by Brion (2020), indicated transfer of new learning is the utmost outcome of teaching, and in this case, professional development. Because of the limited time together, long-term transfer of new learning may not occur. This may lead to principals not applying new content to establish an effective principal-IC partnership, expectations, or effectively utilize the IC behaviors checklist to assess coaching effectiveness with mathematics teachers. A recommendation to address this limitation is the formation of a monthly principal meeting roundtable with the intermediate unit curriculum and instruction or instructional

coaching departments to reflect on new learning, offer support to principal who may be struggling with implementation, and provide further opportunities to partner, collaborate, and discuss ways to buoy instructional coaching in their schools.

Recommendations for Alternative Approaches

The problem that drove this basic qualitative study was the usage of instructional coaching as a job-embedded instructional strategy in middle schools to impact mathematics teacher performance, yet the principal perception of coaching effectiveness was largely unknown. An analysis of the data revealed middle school principals perceived ICs as partners, influencers of fidelity to instructional practices, and usage of their skills to champion to other teachers. In addition, data analysis uncovered the middle school principals lacked clear systems and structures for instructional coaching of mathematics teachers. An alternative approach to address the problem in this study could be through the development of an evaluation report which aligns to the current job descriptions of an instructional coach in each school. An evaluation report would allow for effectiveness of instructional coaching to be determined across schools, determine commonalities as well as differences between schools and school districts. Reddy, Glover, Kurz, and Elliott (2019) explained that because of the continuous professional development and support ICs offer to teachers in schools, ongoing assessment of coaching effectiveness is critical to strengthen practices. Use of an online platform to facilitate and investigate data-driven instructional coaching could be helpful in determining this.

This study could have also defined the local problem of varied instructional coaching training received by instructional coaches throughout schools. The instructional coaching training provided by intermediate units is optional for schools and school districts to participate in, thus leading to uneven preparation of instructional coaches within a school district and grade levels. The local problem could have also been defined as a lack of content-focused training for ICs in middle schools. As ICs in the participating schools are not content-specific, most of them are certified to teach English and social studies. Because of this, the ICs may lack the necessary mathematics content background and mathematics-specific pedagogical skills to effectively support and impact mathematics teachers' performance.

Multiple possible solutions could be implemented to address these alternative definitions of the local problem. To address the possible problem of uneven instructional coach preparation, a standardized coaching model and a complimentary professional development could be developed to ensure uniformity between and among schools. A model that could be implemented could be one based on the data-driven instructional coaching framework proposed by Reddy et al. (2018). This framework develops a coaching model which is based on benchmark student performance, data analysis to determine student needs, identification of differentiated supports for students in various classroom settings and monitoring of student growth towards meeting their needs. This model utilizes established protocols to model new strategies, facilitate practice of new strategies, and offer feedback from classroom visits. To address mathematics content for non-mathematics certified ICs, a continuous professional learning series could be

developed to provide grade band-specific mathematics content to teachers. The professional learning could be composed of opportunities for ICs to practice new content and skills, as well as engage in coaching moves (e.g., modeling, classroom visit feedback, lesson co-planning, etc.) to ensure newly attained skills have transferred to usage as a support to teachers.

Scholarship, Project Development, and Leadership and Change

Through the stages of completing this project study and creation of the accompanying project, the learning process as a qualitative researcher and project developer have been extraordinarily significant. At the genesis of the project study, I was fairly certain of the possible outcomes of the study would be, how the research would be collected, and the directions in which the data would lead. As I engaged in the review of literature of instructional coaching, its models, the principal role in professional development, and principal perspectives on instructional coaching, I realized my predictions were grounded in my assumptions and experience rather than evidence, and were quickly disproven. Becoming a scholarly researcher was not a simple or an easy process; the growth process of accepting constructive feedback and subsequent revisions forced me to rely on evidence from all angles of my local problem, not just the areas that agreed with my thoughts and opinions. Scholarly research considers all perspectives, theories, and outcomes of a topic; it requires saturation of literature—this takes time, patience, and the ability to be both researcher and learner at once. As I engrossed myself in other basic qualitative studies, I was able to apply my newfound knowledge on my local problem and craft a methods strategy that would allow for the collected data of

principal perspectives to drive the creation of the project. Settling on the questions for the semistructured interview were challenging, as a number of questions could offer me a principal perception, however; based on the local problem, I needed to learn what middle school principals really thought about the effect of instructional coaching on mathematics teacher performance. I took an inductive approach when I conducted the interviews, as I wanted to gain as much insight and knowledge about the perspective of principals on instructional coaching effectiveness in mathematics as possible. As I listened to each principal participant and collected data, I was captivated by each perspective, as they were genuinely unique and constructivist in nature.

Analysis of the collected data was the most extraordinary experience I have had on this research journey. As I began to engage in the open coding process after each interview, seeing the themes blossom was mind boggling. The capture of one principal's perception and then watching the connection of another principal's perception unfold was extremely eye opening, as the data indisputably led the process of telling each principal's story and experience with instructional coaching effectiveness in their schools. Axial coding was even more rewarding, as combining open codes to defining the overarching themes of the study unfolded in an organic way. Being able to uncover the commonalities of each principal experience as well as their differences taught me a great deal as a researcher. My job was to absorb myself in the principal perspective and analyze the data so the story it told me was uncovered. Analysis of the data afforded me a rewarding experience of being able to do that.

Construction of the project for my study has exploded my learning and skill development as a professional developer. The second literature review for my study required an in-depth search into the subject of adult learning theories; learning theories such as andragogy, self-direct learning, and transformative learning pushed me to create a project which would quickly provide principals with value, relevance, and application to their work in their schools. At the same time, the process of creating activities and the PowerPoint presentations also increased my own skills as an adult learner, as I needed to produce original activities which kept my attention, pushed back against the assumptions principals have about their role in supporting an instructional coach and began to shape new learning about the critical supports of a principal in research and scholarly evidence and not my opinion.

This project has humbled and energized me as a scholar and a practitioner. As an assistant principal in a middle school with an IC, I am ecstatic to partner with both my principal and the IC to establish clearer expectations for coaching, as well as provide my principal with insights into the ways in which both he and I can support the IC in her work with mathematics (and other content area) teachers. Because I have been engrossed in literature around the principal's perspective and role in professional development, I plan to share this research with other assistant principal colleagues as well as principals. Further, I am in a school district which does not provide principals with background and growth on instructional coaching. I am thrilled to discuss this research specifically with the assistant directors of curriculum and instruction to discuss the ways in which it could be incorporated into upcoming principal and assistant principal meetings in a formal way.

Reflection of the Importance of the Work

Reflecting on the journey I have taken for this study and the development of this accompanying project, I have learned so much; the importance of the work is more critical now than it was when I started. I have learned to become an ardent supporter and advocate of scholarly work in the field of K–12 education, particularly for mathematics in middle school. Mathematics is a content area which combines the skills of reading, writing, critical thinking, application, and error analysis to make sense of why our world can be the way it is in both a two- and three-dimensional perspective. This work is so important, as middle school mathematics is the gateway and bridge from students being exposed to concrete mathematics to representational and abstract mathematics in algebra and beyond. I have learned there are many ways in which middle school principals address professional learning for mathematics teachers, much of it still with the focus of increasing student performance on a state assessment, and not a growth or capacity-building approach. I have learned from current review of the literature that immersing principals in the importance of professional learning and exposing them to its true purpose—increasing of educator capacity—can make the difference in their knowledge growth and increase in performance. From that exposure of professional learning and its true purpose, a principal can impact teacher performance, school climate, student achievement, and become the instructional leader needed for today's student. Further, instructional coaching is genuinely a job-embedded professional development strategy that works; a principal being fully aware of the nuances and best practices of this strategy can move teacher practices from marginal and compliant to confident and truly

performing at their best. The missing piece of maximizing instructional coaching is principal participation, encouragement, and support to make the strategy move beyond one with a heavy focus on struggling and new teachers to a holistic yet differentiated approach, to move every teacher from where their current content and pedagogical practices are to higher heights. Further, this work is important because of the collaborative tactics essential for principals to truly grow as practitioners in their own way. The developed project in this study allows for numerous opportunities for principals to partner and collaborate with each other; collaboration and partnership makes meaning even more powerful and a safe space to grow. Lastly, this work is important because middle school students need the opportunity to be taught by teachers who are engaged in evidence-based instructional practices and led by principals who champion those practices through engagement, partnership, and professional development to ensure teaching and learning are at their best.

Implications, Applications, and Directions for Future Research

The constructivist framework structures meaning as an individualistic and unique approach, of which the perspectives of middle school principals on the effectiveness of instructional coaching on mathematics performance embodies that structure very much. An analysis of data indicated middle school principals perceive instructional coaching as effective to impact mathematics teacher performance, and those ways are individual in their own way and meaning, yet coalesce around three themes: partnership, fidelity to instructional practices, as a champion. These three themes while common, did not necessarily hold the same meaning to each principal. Because of this, a fourth theme was

revealed, a lack of coherent systems and structure for instructional coaching of mathematics teachers. To ensure middle school principals can make meaning from a common knowledge base of instructional coaching and create clear systems and structures for instructional coaching to be successful, I developed a 3-day professional development to lay the foundation of what instructional coaching is, its various models and cycles, as well as to create an observation tool to measure instructional coaching effectiveness with mathematics (and other content) teachers.

Positive social change has the potential to take place with middle school principals, ICs, coached teachers, and students, in turn, within an entire school. Because a middle school principal's increased capacity around professional development will have occurred form participating in the 3-day PD, this newfound knowledge may increase their partnership and collaboration with their IC, as the implementation of clear expectations and an the observation tool will allow for the principal to now provide constructive feedback to the IC to increase their coaching capacity. This in turn may lead to an IC utilizing this increased capacity with mathematics (and other) content teachers, which will provide further support to implementing instructional practices with fidelity, taking measured risks to try new strategies, and offer students consistent mathematics instruction on a daily basis. This in turn may lead a school climate and culture to embrace mathematics teaching and learning as a bridge and connection to critical thinking and true concept mastery and growth.

There a several directions for future research regarding measuring instructional coaching effectiveness as well as principal perceptions. One such direction would be to

engage in a quantitative study with principals to assess their thoughts on the types of job-embedded professional development strategies they believe are effective to increase teacher capacity. The study would be mixed methods in nature, utilizing a survey to rank the effectiveness of various job-embedded professional development strategies (i.e., professional learning communities); an interview with principals could then occur to learn their thoughts and perceptions to the ranking of those strategies. This could provide principal supervisors and district administrators with insights on ways to support principal learning on professional development and how to increase their capacity to provide it effectively in their respective schools. Another direction for future research could be to measure instructional coaching effectiveness from the perspective of middle school mathematics teachers. Wang (2017) identified six practices which effective instructional coaches utilize. A mixed methods study could be conducted initially with a Likert scale survey to rank the perceived usage and effectiveness of those six practices by instructional coaches followed up with teacher interviews and teacher-IC observations to see those practices occurring in real time. This would provide insight into the nuances of instructional coaching effectiveness at a grade band missing in current literature, as well as provide insight into how middle school principals and district administrators can further support instructional coaches in their effectiveness.

Conclusion

This study explored the perceptions of four middle school principals on the effectiveness of instructional coaching on mathematics teacher performance. The results of the study revealed each of these principals perceived instructional coaching to be

effective, particularly as a partner, influencer of instructional practice fidelity, and a champion to support. While each principal found instructional coaching to be effective, each still described partner, influencer and champion in different ways, ultimately from most of the principals not having coherent structures for instructional coaching of mathematics teachers. To address these challenges, a 3-day PD workshop was created to provide an evidence-based foundation of the meaning of instructional coaching, the various models and cycles that can be implemented, and an observation tool to measure coaching effectiveness in real time. The project will provide a common method for principals to measure instructional coaching effectiveness, while also increasing their capacity on the job-embedded strategy and the ways in which support to an IC can be provided. This project can lead to a common foundation of instructional coaching with solid systems and structures for monitoring and evaluation not just for middle school principals, but also for elementary and high school leaders, and can be applied to all content area ICs. Further, this project can lead to an untapped branch of professional development for principals, in increasing their capacity to support instruction in schools beyond resources and time.

I began this study wanting to learn how middle school principals perceived the effectiveness instructional coaching on mathematics teacher performance. Through my study I discovered principals genuinely believe instructional coaching is effective in doing so, yet the idea of effectiveness and the knowledge base of instructional coaching is largely from principals' own sense making, and not from a common evidence-based foundation and sound systems in place to ensure instructional coaching can be

successful. Principals are instructional leaders of schools, and in order to do so effectively, it is critical to provide them with continuous professional development about professional development in order to truly partner with ICs, effectively employ them with all teachers to increase capacity in a holistic manner, and to observe them in an objective and evidence-based manner to offer constructive feedback on their effectiveness. Instructional coaching has the potential to be a successful evidence-based universal teacher capacity raising support, particularly in mathematics, a challenge which is currently vexing middle schools across Pennsylvania and beyond. It is from my travels on this demanding and researching journey, I fully understand the middle school principal perspective of instructional coaching effectiveness on mathematics teacher performance. This study is significant because research suggests engaging the principal in professional development not only grows them as an instructional leader but also increases teacher capacity, school culture, and indirectly, student success. I commenced this doctoral journey as an advocate for professional development and an educational practitioner dedicated to growing both principals and instructional coaches. I finish this journey as so much more: a researcher, a scholar-practitioner, and an agent to lasting social change which leads to confident leaders and teachers wherever I am. I am steadfast in my role to champion professional learning and partnership of the principal with instructional coaching, as together, they can impact the entire scope of learning for every student within their reach.

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Appendix A: The Project

The Middle School Principals Guide to Instructional Coaching Series

Purpose

The Middle School Principals Guide to Instructional Coaching is created for principals to determine the what, how, and why of instructional coaching. This 3-day professional learning opportunity for principals will allow for them to define the purpose and role of instructional coaching, to establish a coaching vision, to define a clear principal/IC partnership agreement, and to align critical coaching attributes to the current teacher observation tool used in Pennsylvania was chosen for implementation. These sessions will allow for principal networking, collaboration, and common learning occasions.

Structure

The 3-day professional profession will each have session-specific outcomes, job-embedded activities to guide new learning, and deliberate connections to compare and contrast current knowledge, expectations, and roles of the IC in buildings to newly developed visions, roles, and expectations.

Learning Outcomes

Each day will have a specific theme to guide the session, in order to connect the foundation of instructional coaching to establishing principal expectations to designing an IC observation tool in alignment with the current teacher observation tool. The theme for Day 1 is, “What is Instructional Coaching?”. The outcomes for the session include: explain what instructional coaching is as a job-embedded professional learning strategy

in a school; describe the roles and responsibilities of an instructional coach; and create a vision of how instructional coaching in their schools. The theme for Day 2 is, "How Many Ways Can You Coach Me, Coach?!". The outcomes for the session include: differentiate between the 4 instructional coaching can occur in a building; describe various coaching cycles an Instructional Coach can implement in a school; and finalize the vision of how instructional coaching in their schools. Finally, the theme for Day 3 is, "Set the Expectation & Inspect It!". The outcomes for the session include: align the current PA observation tool with coaching attributes to improve teacher performance; and develop clear principal expectations for Instructional Coaches and their work.

Session 1: What is Instructional Coaching?

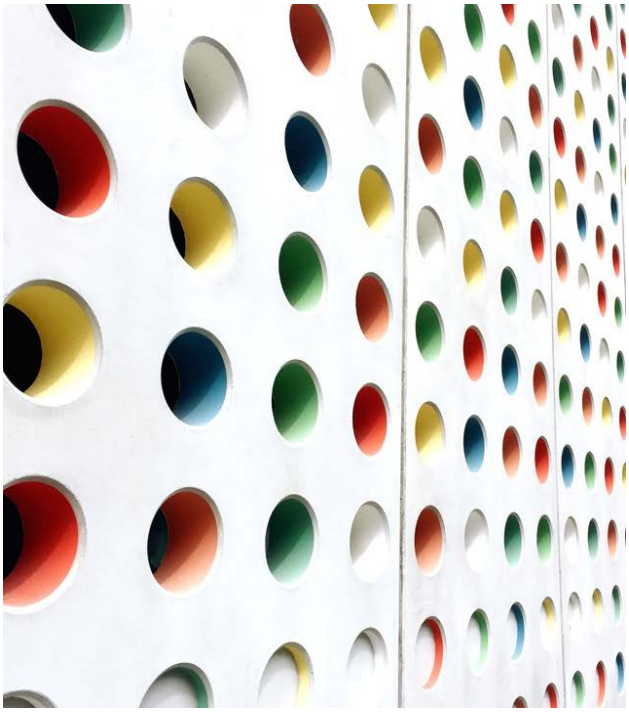
Session Outcomes: By the end of today's session, principals will:

- Explain what instructional coaching is as a job-embedded professional learning strategy in a school
- Describe the roles and responsibilities of an instructional coach
- Create a vision of how instructional coaching in their schools

AGENDA

7:45 am	Light breakfast and networking
8:15 am	Welcome and review of purpose of 3-day training and review of today's session outcomes
8:20 am	Icebreaker: Coach me, Coach!
8:35 am	Andragogy: How adults learn and its use in schools
10:35 am	Break
10:50 am	4 Squares: Instructional Coaching: What is it?
11:00 am	Jigsaw Reading Review— "Making the Most of Instructional Coaches"
11:30 am	Establishing effective roles & responsibilities for an Instructional Coach
12:15 pm	LUNCH
1:15 pm	Fish Bowl: Watching Instructional Coaching LIVE!
1:30 pm	Break
1:40 pm	What is a vision and what is yours?
1:55 pm	Creating a Vision for Coaching
3:00 pm	Reflections: In what ways were today's session outcomes accomplished? What will you share with other school leaders about today's learning? What more would do you need to know about today's topics?

Tonight's homework: Read the short article, "3 Steps to Great Coaching" and be prepared to discuss



Coach 'Em Up! The Middle School Principal's Guide to Instructional Coaching

WHAT IS INSTRUCTIONAL COACHING?

Jaimie C. Foster, Facilitator

Why Are We Here? Our Workshop's Purpose

✓Instructional coaching is professional learning strategy used in many middle schools across our state, with lots of professional learning for ICs

✓There is little to no professional learning for middle school principals to know, understand, and apply instructional coaching effectively

✓ Why we're here—

- To impart the definition of what instructional coaching to middle school principals
- To expose middle school principals to the variety instructional coaching models and cycles
- To apply the Danielson Framework tool to coaching, so IC behaviors can be aligned to effective instruction
- So we can confidently say, "Yes, Instructional coaching is working!" (or not, and I have the tools to support)

Today's Session Outcomes

By the end of today's session we will:

- Describe and discuss 3 adult learning theories that lay the foundation for instructional coaching
- Explain what instructional coaching is as a job-embedded professional learning strategy in a school
- Describe the roles and responsibilities of an instructional coach
- Create a vision of how instructional coaching in their schools

Coach Me, Coach!

- Divide into teams of 2, and identify which person will be the Player and which person will be the Coach
- Coach: take the black bandana sitting on the desk and use it as a blind fold for the Player
- Each Player will stand at the designated spot on the floor (*marked by tape*) and shoot the "basketball" into the "hoop'", with the blindfold on!
- Coach: give your Player tips and pointers to make 10 baskets in a row less than 1 minute!
- Coaches and Players, get ready, get set, GO!!!!
- Coach and Player, it's time to switch (*use the second black bandana for the new Player*)—let's play again!

Debrief Questions—

Players: in what ways did your Coach help you make baskets? Any words of advice?

Coaches: What strategies did you use to help your Player make baskets? Did you need to change your strategy at all? When?

Adult Learning Theories: How Do Adults Learn?

- Teaching adults is not always an easy thing to do! (Busy, time crunched, want new skills quickly, can/will "tune out" if learning does not capture and keep their attention—a lot like students!)
- Adults learn best when content and skills are contextualized, personalized, and offer ongoing support *after* new learning has occurred (*capacity/growth building*)
- Adult Learning Theories: adults learn similarly yet differently than children do—life has happened
  - Andragogy
  - Self-directed Learning
  - Transformative Learning
- All 3 theories are relevant and applicable to the ways in which School Leaders can maximize teacher learning, growth, and capacity

Adult Learning Theories: Andragogy

- Andragogy: the science and method of teaching adults (Malcolm Knowles, the granddaddy of andragogy!)
- Knowles' theory of andragogy is couched in 6 assumptions
  1. As maturity occurs, a person transitions from a dependent personality to a *self-directed personality*
  2. Adults build an ever-growing *pool of experience*, which serves as a *resource for learning*
  3. Adult *learning readiness* to closely related to the *tasks of their role* (at work, home, church, etc.)
  4. Adult learning is more *problem-centered* than subject-centered, because of the desire for *immediate application*
  5. *Internal motivations* are much *more influential* than external motivations
  6. Adults *must know why* they need to learn something new

Adult Learning Theories: Andragogy

- Cornerstone of adult learning, as adults learn new content and apply it, the pool of experience continues to grow
- Adults need to feel a connection to new learning

Andragogy Best Practices	How Adult Learning Often Occurs
Variety of instructional strategies to teach new content	Lecture delivery method of new content
Collaboration with colleagues to learn/apply content	Whole group instruction and application of content
Makes the adults think, as possible multiple solutions	Passive learning with 1 solution to general problem
Follow up occurs to support new learning	No follow up to support new learning OR new learning is immediately evaluated OR forgotten

Adult Learning Theories: Self-Directed Learning

- Tough viewed self-directed learning from the lens of learning projects—

Tough's Self-Directed Learning Process	
1. What am I going to learn?	3. Where will I learn?
2. What resources will I need-time? Money?	4. How will I stay motivated?

  - ✓Included goal setting, timetable for completion of new learning, and assessing current knowledge and skills before beginning new learning
  - ✓Evaluation of new learning included successes and barriers to performance, and adjusting steps to accomplish work

Adult Learning Theories: Self-Directed Learning

- Is a trait of adult learning; not only does the learner ***take control of their learning,*** the adult learner also decides what and the strategies to accomplishing learning
  - ✓Adult learners are ***not*** alone during class when learning
  - ✓Heavy on adult initiative, with or without help of others
- Knowles (1975) and Tough (1978) are considered the "granddaddies" of self-directed learning
  - Knowles devised six steps for following self-directed learning:

Knowles' Self-Directed Learning Process	
1. An atmosphere of respect and support	4. Identify human & material resources needed
2. Diagnose learning needs	5. Choose/implement learning strategies
3. Formulate learning goals	6. Evaluate learning outcomes

School Leaders: How do YOU Apply ALTs?

- In what ways do you apply Adult Learning Theories in your daily interactions with your teachers? IC?
  - ✓Professional Learning Communities (PLCs)
  - ✓Team and/or grade level meetings
  - ✓Act 80 days
  - ✓Others
- If ALTs are not heavily influencing daily interactions with teachers/IC/other adults, in what ways can this be tweaked immediately?

Adult Learning Theories: How Do Adults Learn?

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How Instructional Coaching Applies ALTs

- Heavy self-directed learning-type activities with teachers
  - ✓Assessing teacher needs
  - ✓Determining strategies to meet needs
  - ✓Setting goals for usage of new strategies/ideas with students
  - ✓Evaluating effectiveness of implementation
- Atmosphere setting of mutual respect support during collaborative planning, modeling, co-teaching, classroom visits, debrief of interactions, and "next step" planning with andragogy assumptions at the forefront of the work

Professional Learning + Adult Learning = Increased Educator Performance

- Professional Development (PD) vs. Professional Learning (PL): Why?
  - ✓PD = one-stop shop workshops while PL = active continuous learning by teachers
  - ✓PD = new content/skills BUT transferability may not occur while PL = new content/skills WITH time to practice, receive feedback, and improve
- Think, Turn, and Talk: Recall a recent session you would consider PD and a recent session you would consider PL. Turn to your L elbow partner to:
  - ✓Discuss the difference in the two and the ways you currently apply the PD and/or the PL to your work
  - ✓What tenets of adult learning theory (andragogy, self-directed learning, transformative learning) were integrated into each
- There are times PD is necessary, however; it should always be followed up with opportunities for PL

Professional Learning + Andragogy = Increased Teacher Performance

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  - ✓PD = new content/skills BUT transferability may not occur while PL = new content/skills WITH time to practice, receive feedback, and improve
- Think, Turn, and Talk: recall a time you were a part of PD and a time you were engaged in PL. Turn to your L elbow partner to discuss the difference in the two and the ways you currently apply the PD and/or the PL to your work

It's time for a BREAK!
See you back in 15 minutes!

Instructional Coaching 4 Square: What is It?

Dirt Road	Gravel Road
Instructional coaching is Martha Stewart teaching and supporting basketball players on the art of the triangle offense	Instructional coaching is Mike Krzyzewski instructing teachers on the art of the triangle offense
Paved Road	**The Highway**
Instructional coaching is Scottie Pippen teaching and supporting basketball players on the art of the triangle offense	Instructional coaching is Phil Jackson teaching and supporting basketball players on the art of the triangle offense

Jigsaw Reading: "*Making the Most of Instructional Coaches*"

- What is the purpose of jigsaw reading?! Maximize learning of new content by making each reader an expert of a small piece of the text, like a puzzle
- Last night's reading—let's dig in!
- All Group 1, 2, 3, and 4 participants will meet for 7 minutes to:
  - ✓Review article notes (What stuck out from what you read?)
  - ✓Determine what are the most salient points to share with foursomes?
- All foursomes will share out to discuss the reading and discuss insights...

How can principals make the most of ICs in their building?

Establishing Effective Roles & Responsibilities for an IC

IC Non-Negotiable Must-Do's	IC Non-Negotiable Never-Do's

Have fun at lunch–see you back in 1 hour

Fishbowl:
Let's Watch
Coaching LIVE!

How would you define a *vision*?
What is *your vision*?

Let's Look Back on Today's Learning

- ✓In what ways were today's session outcomes accomplished?
- ✓ What will you share with other school leaders about today's learning?
- ✓ What deeper dives into today's topics would be useful to solidify your new/additional learning?

See you tomorrow: Coaching Styles and Coaching Cycles! ☺

Day 1 PowerPoint Presentation Notes

Slide 1: Title slide will be posted in the room during breakfast and networking, and when participants are pulled together to begin the session at 8:15 am

- Introduce myself, give brief overview of current position and connection to instructional coaching
- Thank the IU for hosting, as well as acknowledge the Director of Curriculum & Instruction and the Instructional Coach Supervisor
- Point on restroom location(s), brief overview of the day, and inform participants of approximate time of lunch and break(s)

Slide 2: Summarize the workshop's purpose for the next 3 days: define instructional coaching, describe IC models and cycles, establish principal expectations, and align current observation/evaluation tool to IC behaviors to effectively assess impact on math (and other content) teacher performance

Slide 3: Seek a volunteer to read the session outcomes for today

Slide 4: Count participants as 1, 2, 3, 4 until all have counted off in the room

- Assign a 1 and a 3 as a team; a 2 and a 4 as a team to side of the room with trashcan "hoop", white sock "basketball", 2 blindfolds and taped "foul line", 2 blindfolds
- Explain rules of the game to participants, and have the "Players" raise their hands, and "Coaches" do the same
- Ask for clarifying questions from participants
- Set timer and go for 1 minute
- Switch "Coaches" and "Players" then reset timer for 1 minute
- Debrief Question 1: seek responses from current "players" and then additional responses from former "players" to add to what has been discussed already
- Debrief Question 1: seek responses from current "coaches" and then additional responses from former "coaches" to add to what has been discussed already
- Seek responses to following question: in what ways do you think this game correlates to the work of an IC? Your work as a principal (or assistant principal)?
- Transition to next topic: andragogy. "We are going to discuss a topic you may be familiar with, andragogy. In essence, in what ways do we learn as adults? And how does andragogy inform our work around instructional coaching?"

Slide 5: Remind participants of challenges to teaching adults

- State the 2 adult learning theories to be discussed in the upcoming slides, andragogy and self-directed learning

Slide 6:

- Definition and history of andragogy

- Describe and discuss the 6 assumptions of Knowles' theory of andragogy (ask participants for confirmation of assumptions with their own examples; if no volunteers to share examples, facilitator will share example)

Slide 7: Compare and contrast andragogy best practices to how adults often learn

- Click on "How adults learning often occurs" first to show a tenet
- Then click on "Andragogy best practices" to compare
- Allow for participant comment, discussion, reflection, and "aha" moments

Slide 8: Review self-directed learning and Knowles' SDL learning process

Slide 9: Review self-directed learning and Tough's SDL learning process

Slide 10: Review the opportunities in school where andragogy "shows up":

- Staff meetings, professional learning days, team/grade level meetings, and 1-on-1 meetings with teachers
- Identify the professional learning standards currently used as principals

Slide 11: Explain PL Standards from Learning Forward, and how they connect to andragogy

- Turn and Talk: recall a professional learning opportunity you attended that you enjoyed. Why did you enjoy it? Recall a professional learning opportunity you attended that you did not enjoy. Why did you not enjoy it? What tenets of andragogy would you add now, if you could?

Slide 12: Explain PL Standards from Learning Forward, and how they connect adult learning

- Turn and Talk: Turn to your L elbow partner to discuss the difference in the two and the ways you currently apply the PD and/or the PL to your work

Slide 13: Discuss the connection between instructional coaching to andragogy and self-directed learning

- Compare and contrast instructional coaching to mentoring, and why they are not the same (not always connected to andragogy)
- Review the professional learning standards to connect the ways in which instructional coaching

Slide 14: Break

Slide 15: Post these posters in 4 corners of the room and ask participants to determine which corner of instructional coaching they feel comfortable with regards to its definition.

- Have each group of "roads" derive a definition of instructional coaching, based on our new knowledge of andragogy, professional learning standards, and own experiences with coaching
- Come to consensus on the definition of instructional coaching: job-embedded professional learning strategy to increase teacher performance through collaboration, modeling, demonstration, and other strategies associated with teaching, learning, and classroom management/expectations.

Slide 16: Count off participants 1, 2, 3, and 4

- Review purpose of jigsaw reading: to maximize learning of new content by making each reader an expert of a small piece of the text, like a puzzle
- Review assigned parts of article read last night
    - Everyone: Introduction (page 21 to top of page 22)
    - Group 1: "Investigating Coaching Initiatives" (page 22 to top of page 23)
    - Group 2: "District-hired or School-hired" page (page 23 to bottom of page 24)
    - Group 3: "The Role of Relationships" and "The Best of Both Worlds" (bottom of page 24 to top of page 25_
    - Group 4: "Accountability Matters" (page 25)
- Allow 7 minutes to review article notes and to identify 3-5 salient points to share with group
- After 7 minutes, bring group back together in groups of 1, 2, 3, and 4. Have each group share out in order by number, using graphic organizer to capture new learning (during this section and the common groups, I will be circulating, listening to groups and their learning)
- Come back together as group to debrief the activity and new learning

Slide 17: Discuss roles and responsibilities of an IC

- Establish the non-negotiables roles an IC should not do: cover classes, assigned a teacher "duty" that interferes with IC roles/responsibilities

Slide 18: Lunch

Slide 19: Fishbowl of engaging in IC roles and responsibilities with a participant volunteer

- Set up room with 2 chairs in the middle of the room; ask participants to make a circle around the 2 chairs
- Take notes of what roles the IC assumes during the conversation with the teacher; then with the principal (5 minutes per "bowl")
- Debrief: in what ways were the coaching roles the same with the teacher and the principal? In what ways were the coaching roles different? Why is it critical for an IC to be flexible in the roles they play with teachers and you/your administrative team?

Slide 20: Dim lights and turn on “Strength, Courage, and Wisdom” by India Arie

- Ask participants to reflect and respond in writing to the 2 questions (show first question then second), “How would you define a vision? What is your vision (for what you feel comfortable writing about)?”

Slide 21: Distribute vision creation WS. Brainstorm IC vision for principals/pairs/trios

Slide 22: Distribute as an exit slip

- Preview tomorrow’s session-Coaching Models & Coaching Cycles
- Have a great night!

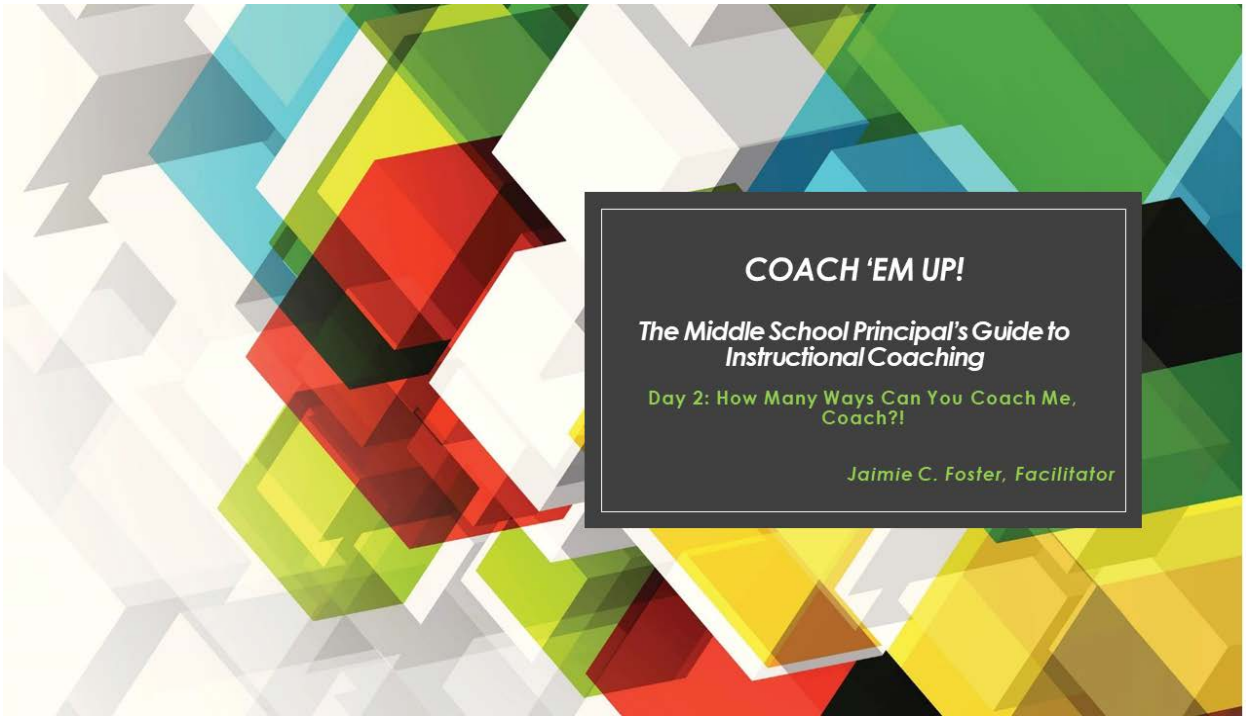
Session 2: How Many Ways Can You Coach Me, Coach?!

Session Outcomes: By the end of today's session, principals will:

- Differentiate between the 6 instructional coaching can occur in a building
- Describe various coaching cycles an Instructional Coach can implement in a school
- Finalize the vision of how instructional coaching in their schools

AGENDA

7:45 am	Light breakfast and networking
8:15 am	Welcome and review of yesterday's learning, and an overview of today's session outcomes
8:20 am	Coaching Models: How do they look?
9:30 am	What is a Coaching Cycle?
10:15 am	Break
10:30 am	Finalizing a Vision for Coaching
11:30 am	Connecting Vision to Action: how the vision would influence the Danielson Framework for Teaching observation tool
12:15 pm	LUNCH
1:15 pm	Principal/IC Partnership Agreement: More than a handshake
2:00 pm	Principal Expectations Brainstorm: Connecting the vision and partnership to IC moves
2:25 pm	Break
2:30 pm	Principal Fears Chalk Talk: What could go wrong with instructional coaching in your school?! What has gone wrong?
3:00 pm	Reflections: In what ways were today's session outcomes accomplished? What will you share with other school leaders about today's learning? What more would you to know about today's topics?



Today's Session Outcomes

By the end of today's sessions we will:

✓ Differentiate between the 6 instructional coaching models which can occur in a building

✓Describe various coaching cycles an Instructional Coach can implement in a school

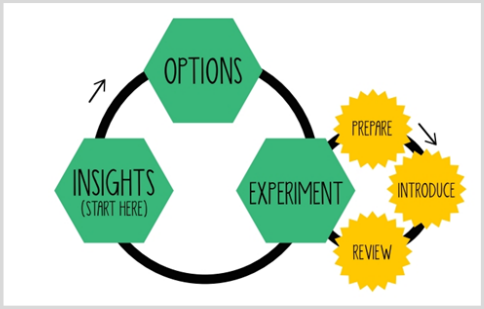
✓Finalize the vision of how instructional coaching in their schools

Coaching Models: How Do They Look?

- Gradual Release in Responsibility (GIR)
- Side-by Side
- Change
- Technical
- Peer
- Content-focused

What is a Coaching Cycle?

- Comprised of 3 components—
  1. *Identify*: Based on the learning occurring in the classroom, what teaching strategy could support the teacher to achieve his/her goal?
  2. *Learn*: In what ways can the learning of the new strategy be confirmed that it is understood?
  3. *Improve*: What are the ways progress monitoring will occur to assess improvement in teaching and student learning?
- Typically 4-6 weeks in length



It's time for a **BREAK!**
See you back in 15 minutes!

Finalizing the Vision for Instructional Coaching

- Let's review yesterday's initial visions we created—in what ways do they capture how coaching can effect instruction, management, and culture in a teacher's classroom?
- In your duos and trios, utilize 30 minutes to review, revise, and correct current visions
  - ✓Be prepared to discuss rationale and thinking for the created vision
  - ✓Think about how the vision would be "seen" by ICs, teachers, and building leaders

IC Vision Presentations!

Connecting the Vision to Action: What Can Instructional Coaching Influence?

- Domain 1: Planning and Preparation—what components can/should an IC have an effect on with teachers?
- Domain 2: Classroom Environment—what components can/should an IC have an effect on with teachers?
- Domain 3: Instruction—what components can/should an IC have an effect on with teachers?
- Domain 4: Professional Responsibilities—what components can/should an IC have an effect on with teachers?

Enjoy lunch! See you back in 1 hour

More Than a Handshake: The Principal/IC Partnership Agreement

- Principal/IC agreement is a set of non-negotiables, statements, and agreements between a principal (and the assistant principals, if applicable) and the IC
- Should include clear time(s) for Principal and IC to meet to discuss IC work with teachers, review of IC work with teachers, IC requests/needs, Principal needs, and next steps for work
- Establishes clear time commitment for IC work in classrooms with teachers

Brainstorm!
Expectations for Instructional Coaching

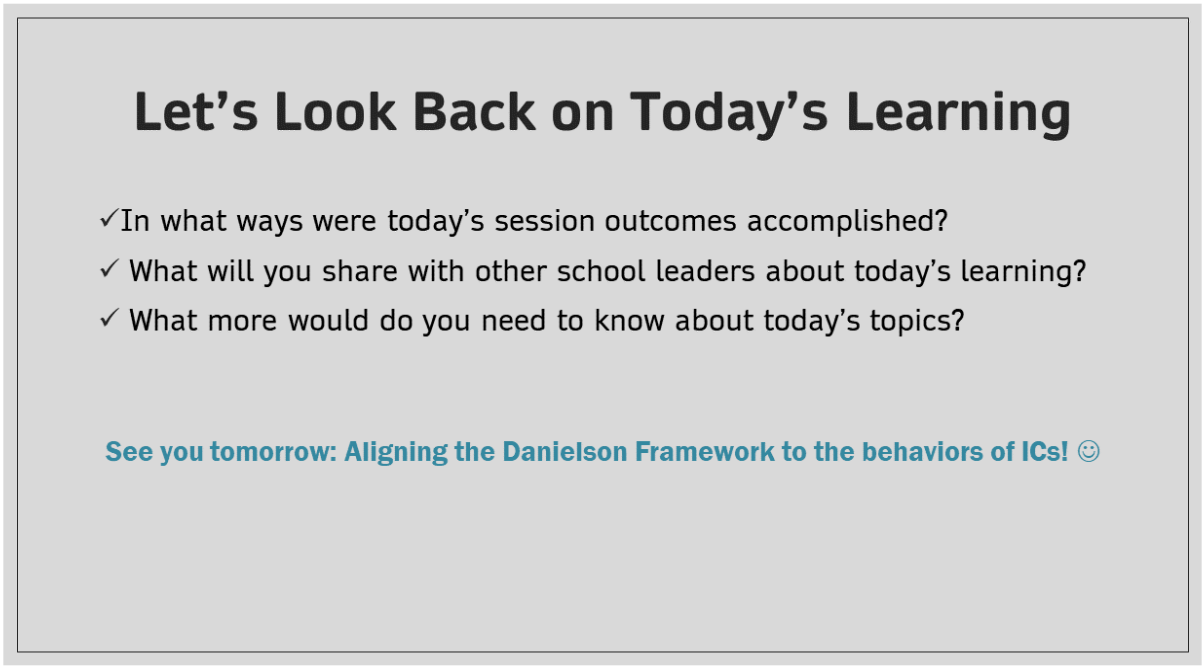
What do you expect the IC in your building to do? To be? To Act?

Principal Chalk Talk:
Instructional Coaching Mishaps

What could go (or has already gone) wrong with instructional coaching in a school?

Let's share out ***NOW***:

Implementation—Follow Through—Relationships—Adult Learning


Let's Look Back on Today's Learning
✓In what ways were today's session outcomes accomplished?
✓ What will you share with other school leaders about today's learning?
✓ What more would do you need to know about today's topics?
See you tomorrow: Aligning the Danielson Framework to the behaviors of ICs! ☺

Day 2 PowerPoint Presentation Notes

Slide 1: This slide will be projected during breakfast and networking

- Welcome the participants back to Day 2
- Recap Day 1—
    - Major takeaways from yesterday's learning? (Popcorn-style responses)
    - Ask a volunteer for the definition of instructional coaching
    - Review fishbowl of IC roles/responsibilities

Slide 2: Seek a volunteer to summarize the 3 session outcomes for today's session

Slide 3: Discussion of each coaching model

- Compare/contrast coaching models as discussing each

Slide 4: Ask participants to pull out the copy of last night's HW article to discuss

- In what ways do see a coaching cycle manifest in the work of your school's IC with math (and other content) teachers?
- Based on previous night's reading, reach consensus on what each coaching cycle component consists of in middle schools, with mathematics (and other content) teachers

Slide 5: Break (15 minutes)

Slide 6: Review the initial vision(s) created from Day 1

- Finalize vision(s) for schools (ensuring each are within the same vicinity of expectations)
- Present vision(s) to the participating group

Slide 7: Review the Danielson Framework for Teaching observation tool to identify components an IC can/should have an effect on

- Discuss the rationale for each component selection
- Explain to participants these are the components which will lead the work for Day 3 on principal expectations and evaluation alignment for ICs

Slide 8: Lunch

Slide 9: Explain what a Principal/IC agreement is

- Establish and define non-negotiables for IC work (do's versus don'ts, principal do's and don'ts)
- Confirm the Principal/IC agreement is aligned to newly established vision

Slide 10: Brainstorm on poster paper principal expectations of ICs (connecting IC vision, moves, and partnership

- Connect to coaching cycle—working with all math (or other content) teachers

Slide 11: Provide each participant with a marker to scribe on poster paper

- Post chart paper with the headlines “Implementation” “Follow Through” “Relationships” “Adult Learning” for principals to jot their related fears on each poster paper
    - Inform all participants the activity is silent.
    - Participants can place check marks next to words/phrases which they also fear
- Once complete, discuss aloud. Explain the tangible solutions will be discussed tomorrow.

Slide 12: Distribute as an exit slip

- Preview tomorrow’s session-Aligning the Danielson model to IC behaviors
- Have a great night!

Session 3: Set the Expectation & Inspect It!

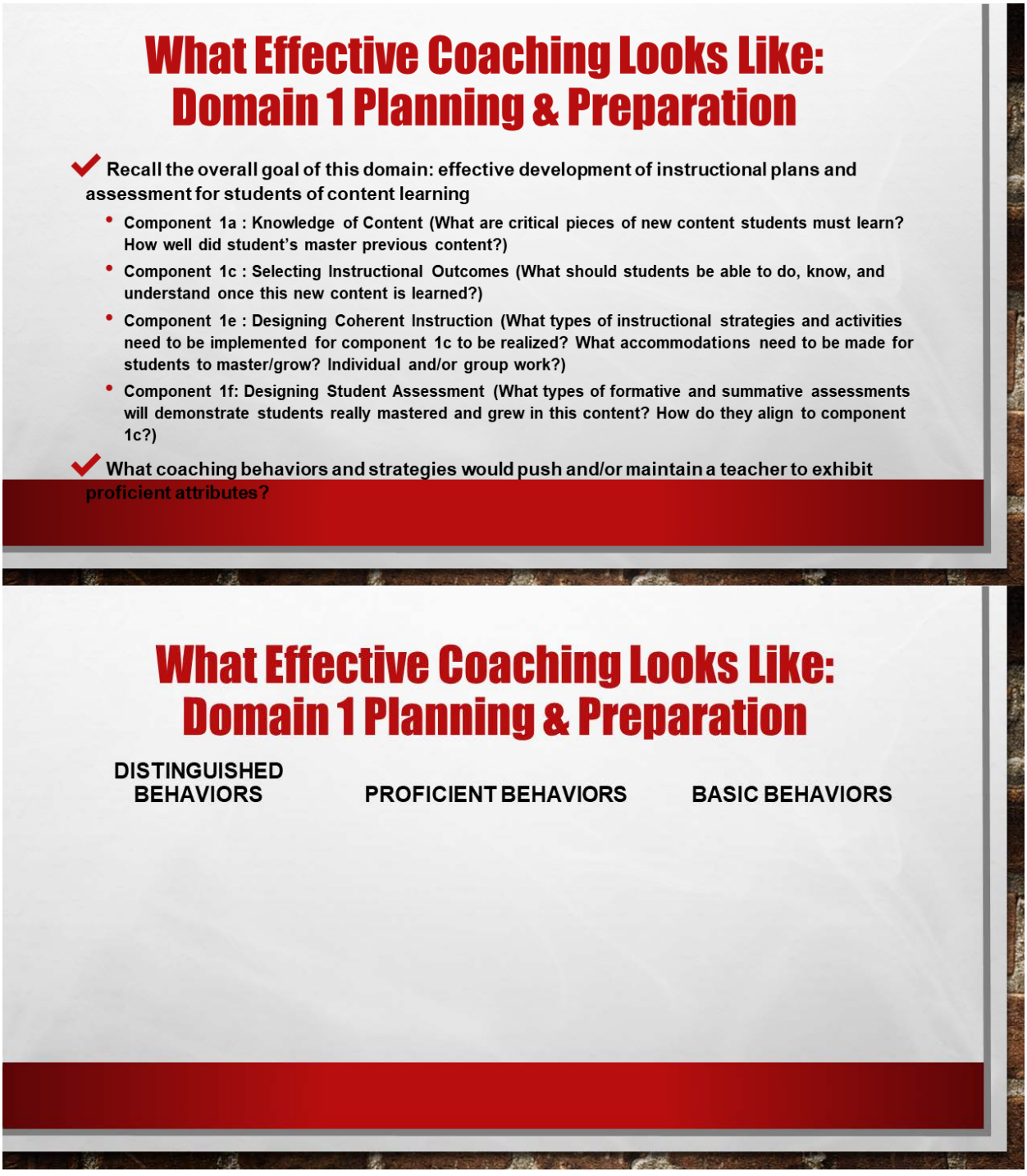
Session Outcomes: By the end of today's session, principals will:

- Align the current PA teacher observation tool with coaching attributes to improve teacher performance
- Develop clear principal expectations for Instructional Coaches and their work

AGENDA

7:45 am	Light breakfast and networking
8:15 am	Welcome and review of yesterday's learning, and an overview of today's session outcomes
8:30 am	What Effective Instructional Coaching Looks Like Domain 1: Planning & Preparation
9:35 am	What Effective Instructional Coaching Looks Like Domain 2: The Classroom Environment
10:40 am	Break
10:55 am	What Effective Instructional Coaching Looks Like Domain 3: Instruction
12:00 pm	LUNCH
1:00 pm	What Effective Instructional Coaching Looks Like Domain 4: Professional Responsibilities
1:45 pm	Gallery Walk & Reflection of IC Attribute Alignment to Danielson Frame for Teaching: Is this an effective tool? How do we know?
2:00 pm	Break
2:10 pm	Principal Expectations for Instructional Coaching: Connecting the vision and partnership to IC moves
3:00 pm	Final Reflections: Complete the Summative Evaluation


COACH 'EM UP!
The Middle School Principal's Guide to Instructional Coaching
Day 3: Set the Expectation & Expect It!
Today's Session Outcomes
Align the current PA observation tool with coaching attributes to improve teacher performance
Develop clear principal expectations for instructional coaches and their work
Discuss strategies for providing effective constructive feedback to increase IC capacity

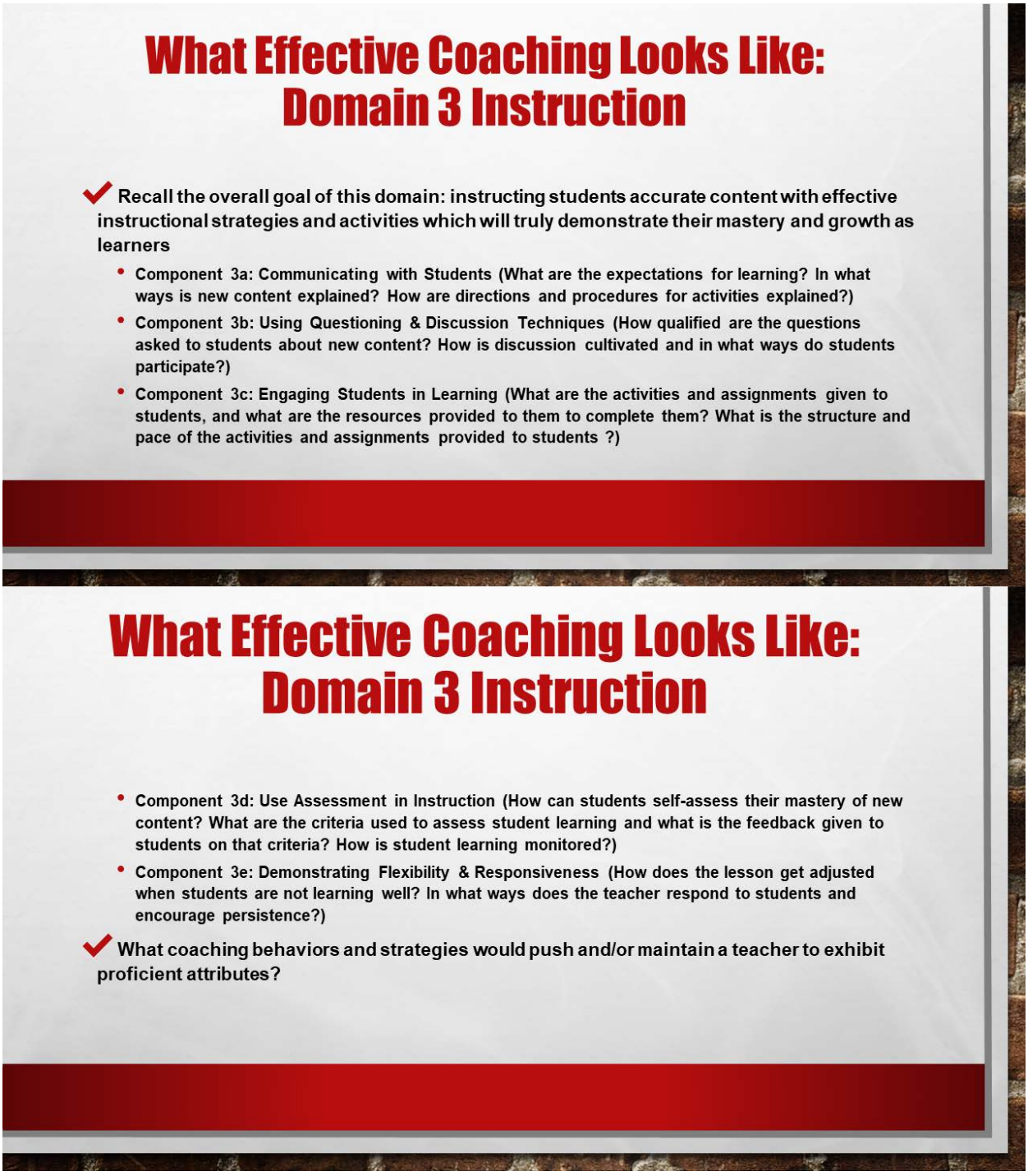

What Effective Coaching Looks Like:
Domain 1 Planning & Preparation
Recall the overall goal of this domain: effective development of instructional plans and assessment for students of content learning
Component 1a : Knowledge of Content (What are critical pieces of new content students must learn? How well did student's master previous content?)
Component 1c : Selecting Instructional Outcomes (What should students be able to do, know, and understand once this new content is learned?)
Component 1e : Designing Coherent Instruction (What types of instructional strategies and activities need to be implemented for component 1c to be realized? What accommodations need to be made for students to master/grow? Individual and/or group work?)
Component 1f: Designing Student Assessment (What types of formative and summative assessments will demonstrate students really mastered and grew in this content? How do they align to component 1c?)
What coaching behaviors and strategies would push and/or maintain a teacher to exhibit proficient attributes?
What Effective Coaching Looks Like:
Domain 1 Planning & Preparation
DISTINGUISHED BEHAVIORS
PROFICIENT BEHAVIORS
BASIC BEHAVIORS

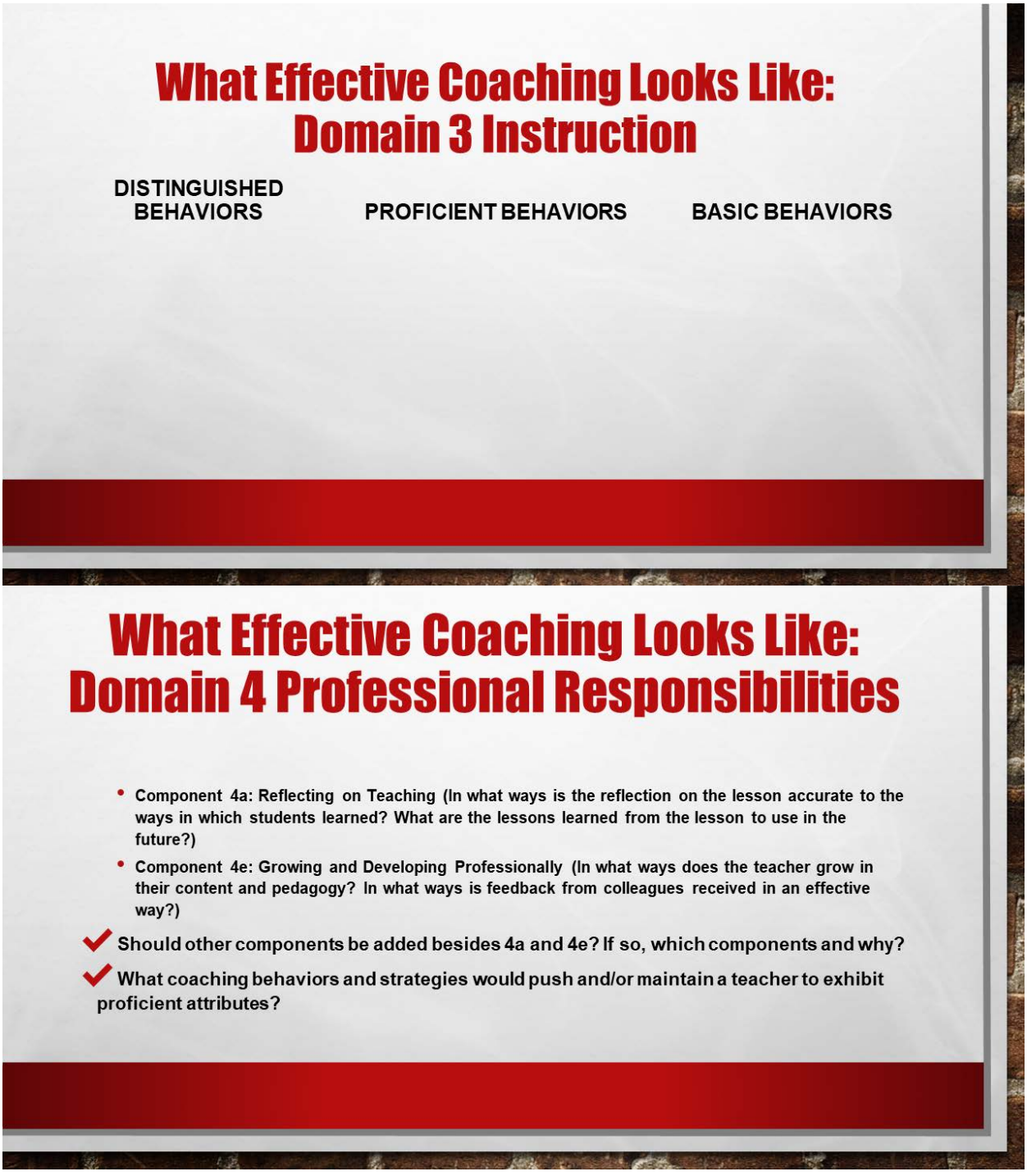
What Effective Coaching Looks Like: Domain 2 Classroom Environment

- Recall the overall goal of this domain: a classroom arrangement, culture, and climate which promotes strong relationships, learning, and self-correction of struggling behavior
  - Component 2b : Establishing a Culture for Learning (How can the importance of content be stressed? What are the expectations for learning? In what ways can students be supported to take pride in their work?)
  - Component 2c : Managing Student Procedures (How are student transitions managed? What are the expectations and procedures instructional groups? Retrieving supplies? How do we maximize support of paraprofessionals and volunteers?)
  - Component 2d: Managing Student Behavior (What are the expectations for student behavior and what are the ways it is they are monitored? How is student misbehavior addressed?)
  - Component 2e: Organizing Physical Space (How is the classroom arranged to maximize student learning, interaction, and collaboration? How is the classroom arranged so students are safe and still able to access necessary supplies and supports for
- What coaching behaviors and strategies would push and/or maintain a teacher to exhibit proficient attributes?

What Effective Coaching Looks Like: Domain 2 Classroom Environment

DISTINGUISHED BEHAVIORS	PROFICIENT BEHAVIORS	BASIC BEHAVIORS


What Effective Coaching Looks Like: Domain 3 Instruction
Recall the overall goal of this domain: instructing students accurate content with effective instructional strategies and activities which will truly demonstrate their mastery and growth as learners
Component 3a: Communicating with Students (What are the expectations for learning? In what ways is new content explained? How are directions and procedures for activities explained?)
Component 3b: Using Questioning & Discussion Techniques (How qualified are the questions asked to students about new content? How is discussion cultivated and in what ways do students participate?)
Component 3c: Engaging Students in Learning (What are the activities and assignments given to students, and what are the resources provided to them to complete them? What is the structure and pace of the activities and assignments provided to students ?)
What Effective Coaching Looks Like: Domain 3 Instruction
Component 3d: Use Assessment in Instruction (How can students self-assess their mastery of new content? What are the criteria used to assess student learning and what is the feedback given to students on that criteria? How is student learning monitored?)
Component 3e: Demonstrating Flexibility & Responsiveness (How does the lesson get adjusted when students are not learning well? In what ways does the teacher respond to students and encourage persistence?)
What coaching behaviors and strategies would push and/or maintain a teacher to exhibit proficient attributes?


What Effective Coaching Looks Like:
Domain 3 Instruction
DISTINGUISHED BEHAVIORS
PROFICIENT BEHAVIORS
BASIC BEHAVIORS
What Effective Coaching Looks Like:
Domain 4 Professional Responsibilities
Component 4a: Reflecting on Teaching (In what ways is the reflection on the lesson accurate to the ways in which students learned? What are the lessons learned from the lesson to use in the future?)
Component 4e: Growing and Developing Professionally (In what ways does the teacher grow in their content and pedagogy? In what ways is feedback from colleagues received in an effective way?)
Should other components be added besides 4a and 4e? If so, which components and why?
What coaching behaviors and strategies would push and/or maintain a teacher to exhibit proficient attributes?

What Effective Coaching Looks Like: Domain 4 Professional Responsibilities

DISTINGUISHED BEHAVIORS

PROFICIENT BEHAVIORS

BASIC BEHAVIORS

BREAK!


Principal Expectations:
Connecting the Vision & Partnership To Moves
Based on yesterday's brainstorm, Chalk Talk, and the created IC Vision,
let's finalize Principal expectations for an IC
Final Reflections: Your Thoughts
THANK YOU for your:
✓ Time
✓ Commitment
✓ Energy
✓ Trust
✓ Collaboration and Partnership
Please complete the electronic summative evaluation. See you soon! Happy coaching!

Day 3 PowerPoint Presentation Notes

Slide 1: This slide will be projected during breakfast and networking

- Welcome the participants back to Day 3
- Recap Day 2—
    - Major takeaways from yesterday's learning? (Popcorn-style responses)
    - Ask a volunteer for the 6 models for instructional coaching
    - Seek thoughts/feelings on chalk talk

Slide 2: Seek a volunteer to summarize the 3 session outcomes for today's session

Slide 3: Review focused components of Domain 1

- What coaching behaviors and strategies would push/maintain a teacher to exhibit proficient attributes?

Slide 4: What coaching behaviors and strategies would push/maintain a teacher to exhibit proficient attributes?

- Distinguished coaching behaviors?
- Basic coaching behaviors?

Slide 5: Review focused components of Domain 2

- What coaching behaviors and strategies would push/maintain a teacher to exhibit proficient attributes?

Slide 6: What coaching behaviors and strategies would push/maintain a teacher to exhibit proficient attributes?

- Distinguished coaching behaviors?
- Basic coaching behaviors?

Slides 7-8: Review focused components of Domain 3

- What coaching behaviors and strategies would push/maintain a teacher to exhibit proficient attributes?

Slide 9: What coaching behaviors and strategies would push/maintain a teacher to exhibit proficient attributes?

- Distinguished coaching behaviors?
- Basic coaching behaviors?

Slide 10: Lunch

Slide 11: Review focused components of Domain 4

- What coaching behaviors and strategies would push/maintain a teacher to exhibit proficient attributes?

Slide 12: What coaching behaviors and strategies would push/maintain a teacher to exhibit proficient attributes?

- Distinguished coaching behaviors?
- Basic coaching behaviors?

Slide 13: Break

Slide 14: Review of yesterday's principal brainstormed expectations to finalize

Slide 15: Thank participants for time, commitment, energy, partnership and collaboration. Ask to
complete the electronic summative evaluation

Appendix B: Interview Protocol

- Greet the participant and thank them for participation
- Introductions
- Review purpose of study and ability to stop participation at any time for any reason
- Remind participant of recording and note taking of interview
- Provide participant with a copy of the interview questions
- Record responses via note taking
- Maintain the conversation
- Pause if required to deepen the information I have gathered
- Ask if participant if he or she would like to add anything to their response(s)
- Conclude interview and thank again for participation
- Confirm via device that the interview was recorded

Appendix C: Principal Interview Questions

Interview Question 1: In what ways does a building principal denote and identify coach influence, specifically when a teacher improves (or declines) on informal classroom visits, formal observations, and/or end-of-year teacher evaluations?

Interview Question 2: In what ways do middle school building principals interact with his or her instructional coach to qualify and identify change in coached mathematics teachers?

Interview Question 3: What do you perceive to be the most critical experiences of middle school mathematics teachers working with an instructional coach that lead to or maintain effective teaching and learning practices?

Interview Question 4: In what ways does a principal work with an instructional coach when the strategies employed in coaching are seeming to be ineffective towards teacher change?

Appendix D: Thematic Analysis Approach for Identified Study Themes

Excerpts from Interviews	Open Codes	Axial Codes	Category	Theme alignment
"But our coach meets with our math team twice a cycle, every single cycle. And I attend those meetings as much as I can... We're gonna kind of back off a little bit [be]cause he's been working with this, he's been working with our math team for two years now." (Participant B) "She has presented to our staff. She is involved in our, not only presenting to our staff at each staff, at each building [be]cause we have three buildings." (Participant A) "So I'll have to be very, very careful not to break that relationship, that competence relationship that	IC participation voluntary; IC in leads and supports PD; IC facilitates teacher meetings; IC work confidential	IC perceived teacher leader	Principal-IC Partnership	Theme 1: Principals perceive the IC as a Partner

he's built with the teachers. So he can't be my tattletale..." (Participant B)				
"Some other ways that I have implemented is we have developed teacher feedback systems so that teachers could actually share feedback at the end of a particular cycle around coaching." (Participant D) "So oftentimes for math professional development, we collaborate on what that, what that professional development should look like." (Participant A) "And then sometimes I'll have some ideas because I'll give him feedback on what I see, what I'm seeing in the classroom, because while he can go in and do observations…"	Collaborate to PL goals/plans; Collaborate to set IC goals; Meet formally and informally; Meet with a purpose	IC perceived as a collaborator		

(Participant B) "We have an open dialogue. She knows she'd come to me and you know, share any concerns …And she knows that I'm here to help her." (Participant A) "…I went to my coach and asked, you know, what was the planning like around this particular unit because I'm noticing variances. So those are some of the informal conversations that happen" (Participant D) "Eric [a pseudonym] and I need, we had a time set aside…We meet if not once a week, once every two weeks…and when [we do meet, it's with] a list." (Participant B)				

"She really developed a focus on helping [math] teachers to look at data and using that to drive instruction." (Participant A) "[O]ne of my coaches, was able to identify just recently that in seventh grade, looking at the, we just did our last or most recent Study Island benchmark and we had so many kids who before the open ended response were proficient and after the open ended response were below basic. So clearly there is a huge gap in that open-ended response portion, and she was able to actually drill it down even to some specific skills so we know where to target." (Participant C) "We organize the	Data analysis and next step planning; Identify, develop, and execute teacher support	IC Perceived as direction setter		

work in team of cycles of coaching and therefore there is documentation of informal observations, planning notes, emails, instructional support plans that outline the focus area of the work, the type of work, the type of coaching that the will be engaged in." (Participant D) "We'll review data, I'll ask him what he needs." (Participant B)				
"I'm just going to say that now because a lot of the support that she's provided or has been on instructional strategies" (Participant A) "You're looking for application, same message, consistency, um, and follow through from what you're seeing is the message transferring from	Uptick in strategy usage; Buy-In PL translates to classrooms; Fidelity to strategies	Learning transfer from IC practices to teacher practices	IC perceived to influence teaching strategies	Theme 2: ICs influence fidelity to instructional practices of mathematics teachers

what we do in the twice during the math cycle and then whatever he's doing individually with coaching into the classroom" (Participant B) "I think there was, I think there's more buy in when it comes from her and it seems like less of a directive than when it comes from me." (Participant A) "I have absolutely had definitive situations in which a teacher has improved because of the work of the coach. [B]ecause… I know that because there are no other sources of development for that teacher." (Participant D)				
"[T]he coaches tend to have a really good success rate of helping them [the teachers], like I said, figure out	Students more engaged; Students more responsive; Benchmarks improved; Students	Working with IC impacts student engagement		

how to get the kids engaged." (Participant C) "So just, it's, it's more than just the data, but how are students responding to what ..[the IC has been] teaching the math team…" (Participant B) "You can walk in; the classrooms are side by side and you can walk into those two classrooms and see a very stark difference in the children's motivation for what they're doing." (Participant C) "Engagement, questioning, assessment, you know, prompting higher level thinking, you know, gradual release, you name it. If teachers are using that and they're doing it right." (Participant A)	performing better			

"We're probably around like 90% of, of my math teachers have had some interaction with, with our instructional coach." (Participant A" "[The IC] knows every single math teacher's need here. Like he really knows where they need support." (Participant B) "[T]he coaches tend to have a really good success rate of helping them [the teachers], like I said, figure out how to get the kids engaged, make their lessons more engaging, and then also make them cross curricular and relevant." (Participant C) "[W]hatever pushback they gave him on something, he came back with another resource to help them."	Heavy teacher-IC interaction; IC has answers; IC solution-oriented; Teacher IC feedback is positive; Not intimidated by pushback	Teachers seek IC support	IC perceived as solution oriented	

(Participant B) "I can tell you that I've gotten feedback from teachers about how helpful it was." (Participant C)				
"[W]e have biweekly coaches' meetings where I specifically build their capacity around coaching, where we read articles, we discuss coaching practices, we discuss scenarios and how to provide feedback, what does effective feedback look like and how you actually participate in this coaching cycle." (Participant D) "So, what I try to do is coach her through ways of dealing with those difficult personalities. You know, I help her to craft questions or reply to emails or prepare for meetings with	IC improvement; IC PD; Navigate IC challenges	Principal is IC capacity builder	IC perceived as one to grow	Theme 3: ICs are championed by the principal

those people." (Participant A) "So it's just very important that he and I meet and talk about what's working, what's not, what do you need, that type of thing." (Participant B) "What, how, you know, what level of support do you need for me?" (Participant A) "I review the coaches notebooks at the end of each coaching cycle to identify the work and impact of the coach." (Participant D)				
"I do go do the walk throughs; I'm seeing what it is that he's been coaching us on." (Participant B) "Coaches tend to have a really good success rate of helping them." (Participant C) "And either they're sharing with me, they	Trust IC work; Confident in IC; Teacher feedback indicates IC effective	IC makes impact	IC perceived as impactful	

plan on meeting with her or meeting with her again." (Participant A) "I've never, I've never gotten an impression that they weren't effective." (Participant C)				
"So, I require my coaches to keep binders, notebooks that are organized by coaching cycles." (Participant D) "I review the coaches' notebooks at the end of each coaching cycle to identify the work and impact of the coach." (Participant D) "[W]e have biweekly coaches' meetings where I specifically build their capacity around a coaching, where we read articles, we discuss coaching practices, we discuss scenarios	Accountability; Specific IC PD; Focused meetings; IC evaluated; Principal and IC reflect	Principal assesses impact of IC effectiveness	Principal has clear structures for IC work with teachers to denote impact	Theme 4: Principal perceptions depict lack of a coherent structure for instructional coaching with mathematics teachers

and how to provide feedback, what does effective feedback look like and how you actually participate in this coaching cycle." (Participant D) "When strategies are not working, we haven't drilled down to the root cause of what the teacher issue needs, or coaches may be going in at very high levels of engagement... But you haven't done, you know, some of the low-level types of culture." (Participant D)				
"But our coach meets with our math team twice a cycle, every single cycle. I attend those meetings as much as I can." (Participant B) "Oftentimes for math professional development, we collaborate on what that professional	Principal attends some/most meetings; Structure for PD delivery; IC effectiveness through teacher change	Some IC structures in place for work with teachers	Principal IC effectiveness perceptions are from some tangible evidence	

development should look like…And she, over the course of the year, she has helped to lead that professional development." (Participant A) "I qualify the work that she is doing is if I see a change in the strategies that they're using." (Participant A)				