Instructional Coaching: The Importance of Clarity for All Stakeholders

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Instructional coaches have the potential to improve teaching practices that directly impact the quality of teaching that students receive. Thus, they are a valuable resource to schools that use them wisely. Unexamined, the work of an instructional coach may not add to program quality and therefore drain resources of budget and time. Research from literacy coaching and math coaching elucidates the challenges and hindrances obstructing coaches' effectiveness. While my school has been using instructional coaches in math and science since 2018, interviews with coaches, teachers, and administrators in our school show the realities of the challenges in our context and demonstrate that we lack a shared understanding of the role of instructional coaches. To address this problem, two interventions, creating a job description and disseminating it along with information about the history and purpose of the role, were implemented with the goal of creating clarity that would support the development of a shared understanding. Data collected before, during, and after the interventions show improved clarity and aligned understandings about the role of instructional coaches. Continued monitoring of the engagement of the faculty with the instructional coach will determine if the shared understanding leads to improved collaboration and the prudent use of resources

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Acknowledgments

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Once the decision to start on a journey is made, the courage to continue the journey comes from those beside you, always ready to help, comfort, and encourage. For this reason, I am grateful to my cohort of school leaders (Charissa, Rachel, Jacob, Angela, Amy, and Jenn), my friends, and my family.

The love, support, and encouragement of my family is central to all that I do. I would like to acknowledge my children, Tricia and Jacob, who taught me that risks are worth taking and to not let fear make decisions for me. Although my mother has passed, her joy when I became a teacher, is forever etched in my mind. The rocking chair she bought for me to use when reading to children is a symbol of how deeply she cared for children, and how much she cared about the ways

adults can positively impact their lives. I cannot overstate the importance that my father plays in my life. As someone who taught me leadership, professionalism, and the value of hard work, his pride in me means the world. Ever ready to share in my struggles, or my successes, my sisters provide emotional support that is so needed

And to my partner in life, my husband, I am deeply thankful for bringing mugs of coffee or tea during long virtual classes, and for providing comic relief to lighten the load when times felt heavy. I always know that he supports me in following my dreams.

Finally, diving into this improvement study could not have happened without the trust and collaboration of the instructional coaches at my school. Their willingness to support this study came from deep care and concern for the students in the school, and a trust that we are all working towards a common goal. They are absolutely amazing educators!

1.0 Introduction: Naming and Framing the Problem of Practice

The problem instructional coaches have with impacting teachers' teaching practices in my school is an accumulation of many possible causes, past and present. As Bryk et al. (2015) point out, “Coaching is by its very nature a complex intervention” (p. 41). My problem of practice is that the instructional coaches struggle to impact classroom teaching practices. Research in educational settings sheds light on effective coaching strategies and skills. This research could inform how the coaches work with teachers to impact classroom teaching practices effectively.

While research on instructional coaching in math and science is beginning to emerge, research on literacy coaching can provide insight into the challenges of instructional coaching. Matsumura et al. (2009) state that researchers found the enactment of instructional coaching in schools is influenced by variation in organizational and social factors, such as a district’s policy for determining who is qualified to serve as a coach, the way the coaching job is interpreted, the existing norms for teachers’ professional community and the principal’s leadership (p. 657). They report that the following is necessary regarding a principal’s leadership: Public endorsement of the coach, granting the coach professional autonomy, and active participation in the reform (Matsumura et al., 2009, p. 685). As an administrator, I have done all these things with the instructional coaches. The coaches report some success with a few teachers. Despite the few successes reported by coaches, recently raised parent concerns, administrators’ classroom observations, and a review of lesson plans point to a lack of differentiated instructional practices.

1.1 Organization Description

As a laboratory school that serves children in grades kindergarten through eighth, trains future teachers, and contributes to professional knowledge about education, my school sits within two broad educational systems. One is the education system of the U.S. that includes standards of learning for the children, and the other is the teacher education system. These complex systems interconnect and align to support student achievement by focusing on educational excellence. The mission statement of the U.S. Department of Education is "to promote student achievement and preparation for global competitiveness by fostering educational excellence and ensuring equal access" (U.S. Department of Education, 2021). And in working with those who inform educational practices through research and those who teach or will teach in schools, the mission of the University of Pittsburgh's School of Education (2021) states: promote student achievement and preparation for global competitiveness by fostering educational excellence and ensuring equal access" (U.S. Department of Education, 2021). And, in working with those who inform educational practices through research and those who teach or will teach in schools, the mission of the University of Pittsburgh's School of Education (2021) states:

> We ignite learning. We strive for well-being for all. We teach. We commit to student, family, and community success. We commit to educational equity. We advocate. We work for justice. We cultivate relationships. We forge engaged partnerships. We collaborate. We learn with and from communities. We innovate and agitate. We pursue and produce knowledge. We research. We disrupt and transform inequitable educational structures. We approach learning as intertwined with health, wellness, and human development. We address how national, global, social, and technological change impacts

> learning. We shape practice and policy. We teach with and for dignity. We think. We dream. We lead with integrity. We are the School of Education at the University of Pittsburgh.

My organization lives in the overlap of these two systems. My school trains approximately 20 student teachers and educates around 430 students annually. Our mission is to do both– educate students and educate future teachers:

> My school's mission is to be a progressive, experimental, and demonstration elementary school. Therefore we:
>
> - Educate students in grades K-8 using instructional methods and materials that promote inquiry, actively engage students in their learning, and respond to individual students' interests and needs.
> - Provide opportunities for pre-service/student teachers to observe and work with experienced, innovative master teachers (Falk Laboratory School, 2021).

The focus on increasing the expertise of teachers to provide excellence in educational experiences for students unites my school's work with the School of Education and the Department of Education.

The emphasis on learning is the common thread that weaves through all the systems. However, the purpose for learning differs depending upon the user. Children are learning to seek individual achievement, teachers are learning to improve the quality of their teaching, student teachers are learning to understand the profession, and the university is learning to inform and

change the educational systems. Recognizing that there are many purposes for learning, my organization spells out what this means for us:

> Educational theory at Falk School conceives of the school as a center of inquiry where learning takes place at every level. Children, teacher trainees, faculty, parents, and administrators all engage in the quest for knowledge.
>
> Such an instructional focus is most effective in an environment where teachers are empowered and accountable. To these ends, the faculty engages in an ongoing professional dialogue that is the impetus for instruction. Teaming strategies are employed to convene meetings that engage teachers in substantive professional conversations designed to generate new knowledge about teaching, support the intellectual growth of teachers, and develop inquiring attitudes in students. As a result, teachers make instructional decisions, discard ineffective teaching practices, create new lesson structures and processes, and participate in decisions pertinent to the school's organization, instruction, curriculum, and management (Falk Laboratory School, 2022).

As a school, we value reflecting on and refining our practices to support the growth of our teachers and the achievement of our students.

These values and our mission played an essential role in the history of my problem of practice. When the enrollment numbers increased in my school, more personnel were needed to teach additional classes. However, the need was not so great as to demand full-time personnel. At the same time, my school was adopting a new math curriculum and writing a science curriculum. Seeking to maintain teaming strategies that support teachers' intellectual growth and inform instructional decisions, the administrators saw an opportunity to use the unscheduled time

of the additional teachers to provide expert knowledge in math and science. Meanwhile, instructional coaching grew outside our school as a strategy to inform and improve teaching (Knight & van Nieuwerburgh, 2012).

Although the math and science instructional coaches started simultaneously and for what seemed like similar reasons, the origin of their needs differed. The school adopted a curriculum that provided a framework for teachers to use in math. The challenge was extending and enriching the curriculum to respond to students with high aptitudes and parents with high expectations and achievement goals. Science, however, did not have a curriculum that provided a standard framework but was in the process of writing its own. The science coach needed to ensure vertical alignment of the curriculum and science instruction that meshed with the school's progressive philosophies. The origin of roles in response to different needs results in variation with coaching tasks such as time allocation and who the work is with (see Figure 1).

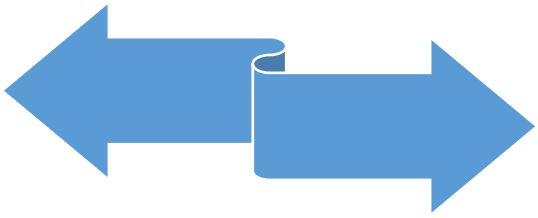

Figure 1 Map of Instructional Coaching Focus

Initial discussions and data collection led to an awareness of the choices made regarding time allocation. The findings underscore one of many variations in implementing instructional coaching in my school. In a personal interview with the science coach, she reflected on prioritizing her time. She expressed several factors that weigh on her decisions (see Figure 2). She stated that she does not spend time with teachers who she feels "know what they are doing"

or use a previously developed and refined unit. Instead, she devotes her time to working with teachers who are developing a new unit or who she feels resist teaching science.

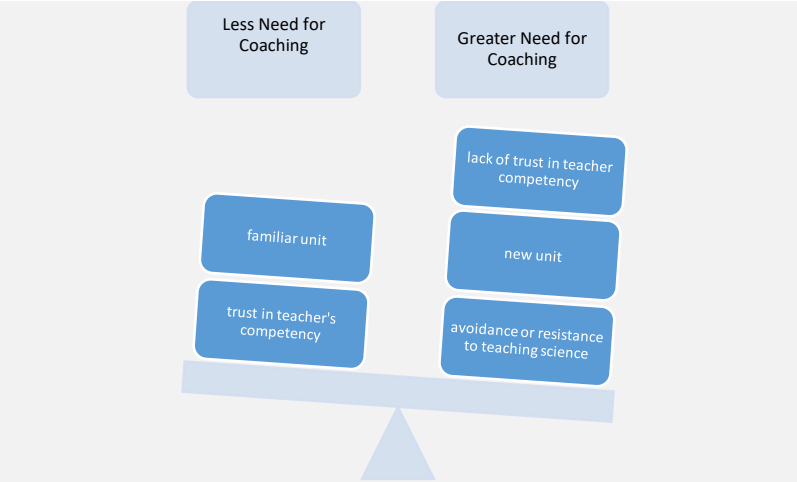

Figure 2 Decision Factors for Science Coach's Allocation of Time

In comparison, the math coach divides his time equally among the grades. While the science coach may spend more time with a particular teacher and no time with other teachers, the math coach works with grade-level teaching teams for a month and with students in small groups, math clubs, and math lunches for scheduled times throughout the year (see Figure 3).

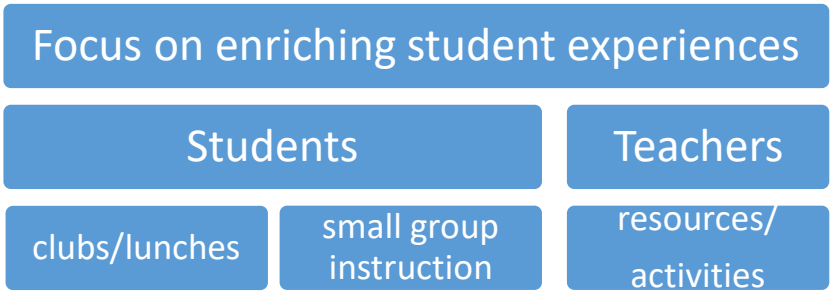

Figure 3 Decision Factors for Math Coach's Allocation of Time

Another point of divergence with instructional coaching happens regarding the training of student teachers. The science coach explicitly stated that ensuring our student teachers are training alongside teachers who follow national standards is a priority. The point of alignment in the mission of the U.S. Department of Education, the School of Education, and my school regarding educational excellence profoundly impacts the science coach's purpose. Figure 4 illustrates the intersection of influences on the science coach's work.

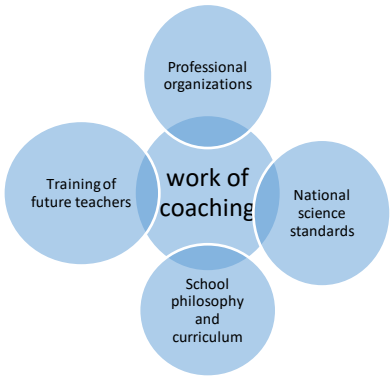

Figure 4 Influences on Science Coacing Work

Contrarily, the math coach made no mention of working with student teachers. The clear emphasis of his work was to provide enriching experiences for students that go beyond what the curriculum offers and serve the requests of families who want more for their children.

Investigating how my organization has developed instructional coaching illuminates that it has taken two different paths. Bryk et al. (2015) state that "behind the deceptively simple title of 'instructional coaching' stands a complex solution system needing to be developed" (p. 83). My school has developed two solution systems, each with its processes and priorities. I continue to work through my problem of practice with Bryk's (2015) question in mind, "how is our organization (policies, procedures, practices, priorities, personnel) contributing to the problem of practice (intentionally or unintentionally)?" (p. 94). One immediate answer is that I and others in

my school lump instructional coaching into one activity. A close look into the history and the processes of instructional coaching in my organization reveals the error in this thinking.

1.2 User Description

My school is an independent, kindergarten to 8th grade elementary and middle school. The school has three levels: Primary, which covers kindergarten to 2nd, intermediate or 3rd to 5th grade, and middle school, 6th to 8th grade. The teachers are considered a team at each level and represented by a team leader at administrative meetings. While the team leaders meet regularly with the administrators, they are not responsible for evaluating teachers. The classrooms in grades k to 5 are self-contained. Teachers teach four main content areas: math, language arts, science, and social studies. The middle school teachers are specialists in the content areas and teach one content to an entire grade. Each middle school grade has three sections of students. Both instructional coaches are middle school teachers, one in math and the other in science. However, instead of teaching two middle school grades, they teach one. Therefore, they spend a half of their day teaching middle school and a half performing

instructional coaching duties. The administrative structure consists of a director and two division directors, one for grades k to 5 and the other for middle school.

Understanding the users, specifically, how they are impacted by and influence the problem, is essential for the entire Improvement Science process. Bryson et al. (2011) propose a broad definition of stakeholders that includes “individuals, groups, or organizations that can affect or are affected by an evaluation process and/or its findings” (p. 1). Using this definition, my problem of

practice users includes administrators, teachers, instructional coaches, team leaders, curricular chairs, parents, and students. Although these groups can all be considered users, they do not have the same power or interest to affect my problem. A power versus interest grid (see Figure 5) outlines the users with the most power and interest in instructional coaching practices.

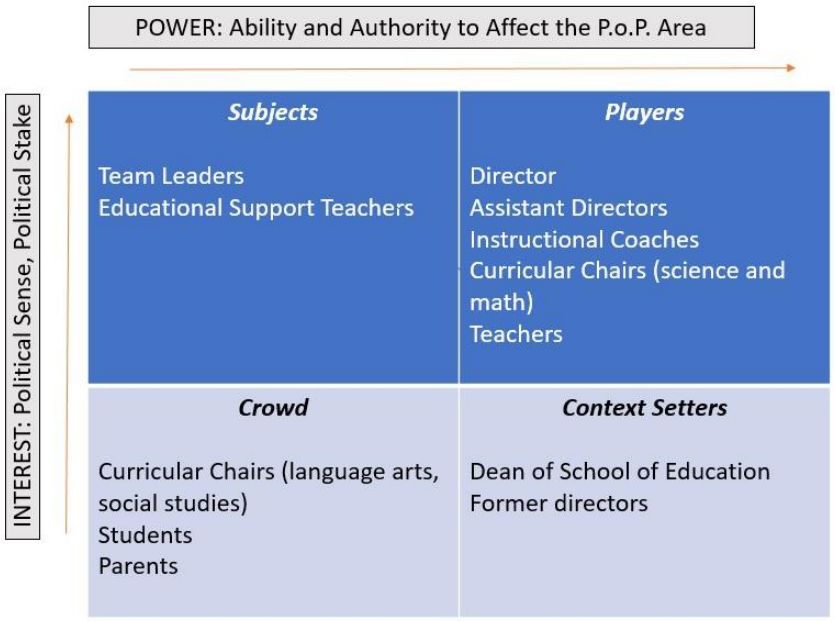

Figure 5 Power Versus Interest Grid

As noted in the grid, the director, division directors, instructional coaches, and teachers have the most power and interest in instructional coaching and therefore are the players in my problem of practice. Research on coaching emphasizes school leaders' power on instructional coaching (Coburn & Russell, 2008; Matsumura et al., 2009). The director and division directors' power comes from their ability to hire, develop job descriptions, and communicate expectations. The coaches' and teachers' power comes from their ability to enact or hinder the tasks needed for coaching to be successful. Matsumura et al. (2009) state, "teachers are generally the ultimate decision-makers regarding whether they will work with a coach or not" (p. 686). Even so, school leadership influences teachers' decisions (Matsumura, 2009).

The subjects, team leaders and educational support teachers, have considerable interest, but limited power,on the impact of instructional coaching. Team leaders are responsible for cohesiveness and collaboration among the teachers of their levels but are not responsible for teacher evaluations. The three educational support teachers, we have one for each level, have an interest in the educational experiences and environments of the students they serve. As teachers' practices improve and align, students are better served.

1.3 Players' Background

Neither of the administrators responsible for creating the role of a math and a science instructional coach still work at my school. Their perspectives would add to my understanding of the problem, especially regarding the purpose of the roles. Although the administrators are no longer present, current users continue to interpret previous administrators' intentions, which impacts how they see instructional coaches' role.

When the previous administration hired the instructional coaches, all current administrators were teachers, one in kindergarten, one in fifth grade, and the other in educational support. Now, two are in their fourth year as school leaders, and the third is beginning her first year leading a division.

The instructional coaches began their roles in 2016. They also serve as curricular chairs for their respective content areas. The science coach started in 1997 and had 16 years of teaching before adding instructional coaching duties to her job. The math coach began in 2015 and had one year of teaching before adding instructional coaching to his job

1.4 Players' Perspectives

As I listened to the players' perspectives, I noticed common themes around challenges regarding job clarity, time, relationships, training, and accountability. Although some users have taken measures to address the challenges, they report significant barriers still exist.

All the players interviewed expressed a lack of understanding of the purpose and role of the instructional coach at our school. In an illuminating statement, one coach voiced that she did not even know her job's correct title. She said, "We are still coming up with the right term that makes the most sense." Likewise, a teacher stated, "Coach was never really defined exactly, which made the transition difficult because no one understood what the purpose was or didn't understand what their role was when they would come into the room." Furthermore, an administrator said, "There wasn't a clear idea about what the coaches do, either for the teachers or the actual coach themselves." The lack of clarity also prevents the current administration from knowing how to evaluate the work of the coaches.

Coaches report having no feedback or guidance on what they need to improve. A comment from one coach sums this up, "I think I'm doing what I'm supposed to be doing." Adding to this confusion are the conflicting messages given by previous administrators. A current administrator reported, "The coaches were given different messages at different times." Similarly, a teacher said that one previous administrator wanted to focus on theory and a deep understanding of the content, while the other administrator preferred to focus on teaching practices. The coaches report not knowing how to navigate between the competing demands. Users at every level, those closest to the problem and those further removed, remain puzzled about the role.

Despite the lack of clarity, the instructional coaches report that they accepted the job and began seeking training in content areas and leadership skills. However, neither one expected to

face resistance. One coach remarked, "I did not anticipate the defensiveness and the negativity." As they continued in their roles, both coaches strived to understand the resistance and find ways to resolve it. They report seeking guidance from administrators, talking with each other, reading, and attending professional development sessions to address this problem.

While they are instructional coaches, they are also teachers. Having a dual assignment lessens their time to devote to instructional coaching. One teacher remarked,

> And the timing, [the science coach] was like meet, meet, meet. And we are so busy, and she would get mad about it. And she was only available at this time. And [the math coach] was only available at this time. The timing was a problem. Their inability to just focus on us. It didn't really feel like true coaching because they could only do so much. I felt bad for them.

Contrary to this statement, another teacher appreciated that the coaches are also teachers. She felt it helped them understand the many demands teachers face daily. Additionally, an administrator, who served as the first STEM coach in her previous district, expressed a similar sentiment. She said, "It was easier going from peer to coach because a lot of people I was going into class with, I had done work with in the past, so we already had that established relationship."

However, not everyone thinks of the coaches as equals, even though they hold teaching assignments. One primary level teacher expressed,

> If I'm being candid, it has not always been positive, and I think that's because it felt sometimes as though they are the experts of what they teach but not of early childhood education. So, I think there can be, at times, a lack of awareness or understanding about how things work.

This teacher felt the instructional coaches expected things that were impossible given the needs of the younger children, specifically regarding how much time the coaches expected the teachers to spend teaching the content.

One of the teachers I interviewed also serves as a co-chair of the math curriculum committee and as a team leader for her level. From her interview, I heard about the general perception of instructional coaching. She stated,

> If you asked my team, they would say something similar to 'Oh, we have to meet with them and talk about what we are doing in our content area.' Which isn't what it's supposed to be. It's not like they are keeping tabs on us. And from what I've heard from [the math coach] and the resistance he's faced, I think there are teachers at other levels who feel that way, almost like a spy, which isn't helping his cause.

She also revealed long-standing resentment that may contribute to the relational challenges between coaches and teachers. Her comments reflect the hurt inflicted: "When it came about, I was slightly offended, and I don't know that I would have taken it, but it's kind of offensive that [the previous administrator] just asked him to do it. I've been here longer."

COVID adds additional challenges for the players. One instructional coach felt it interrupted the positive impact with two teachers. She stated, "I felt like before COVID, we were on a roll with those two teachers. I have a feeling we might have to start over, but I think the momentum can build once I'm back in the [same] building." Additionally, two administrators and teachers mentioned the stagnation because of COVID. One said, "Stagnation now is because things aren't happening." COVID adds a layer to the problem that I will need to consider.

1.5 Subjects' Perspectives

The educational support teacher I interviewed expressed the need for curricular cohesion. She started in 2019 after serving in an integrated co-teaching classroom, a classroom where a learning support specialist co-teaches with a general education teacher, in New York City. Her comments centered around her previous experiences with instructional coaches and the need for teachers to have clarity with curricular expectations. She said instructional coaches were consultants from curriculum companies whose jobs ensured teachers implemented the curriculum with fidelity. She felt this enabled specialists who move across classrooms to know expectations for particular grades. She thinks that a lack of clarity means that different things are happening in various classrooms, which makes her job more challenging.

1.6 Fishboone Analysis

My problem of practice is that instructional coaches struggle to impact the teachers' teaching practices in my school. Hinnant-Crawford (2020), suggests using a fishbone diagram to illustrate the systems that contribute to the problem. To compose my fishbone, I utilized both the user description and the organizational analysis of my system (see Figure 6). By doing so, I identified the root causes which include policy causes, organizational causes, capacity issues, historical issues, resource causes, pedagogical causes, and COVID.

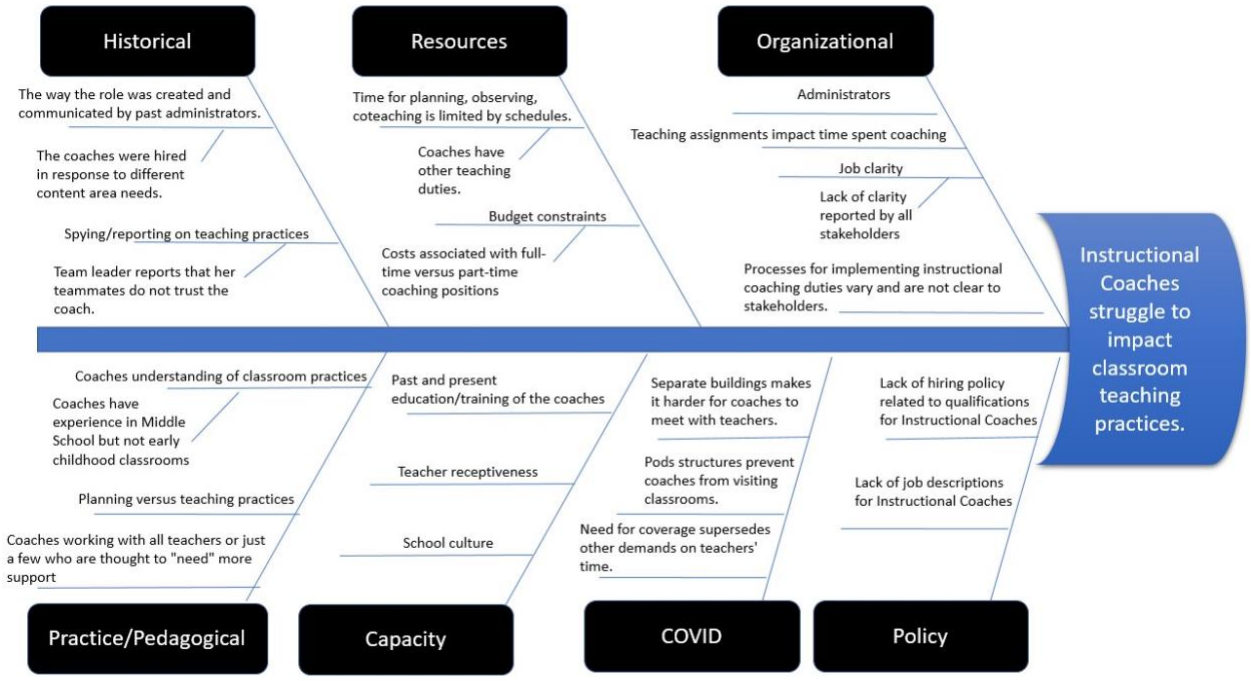

Figure 6 Fishbone Diagram

Under policy, I list hiring policies and job descriptions as minor causes. The lack of a hiring policy leads to hiring practices for instructional coaches that involve promoting highly effective teachers because of their proven teaching skills that demonstrate content and pedagogical knowledge (Russell et al., 2020). But being a good teacher does not mean that the person will have the skills needed to work with adult learners. When the instructional coach role began at my school, two current teachers were promoted to the positions with no qualifications other than being skilled in their disciplines. The instructional coaches at my school report their lack of skills in working with adults hinders their abilities. Another minor cause under policy is that the coaches did not have job descriptions during their hiring. Job descriptions define the parameters of the work and determine the criteria used for evaluation. Without a job description, there is no way to assess the work and establish goals. A lack of a job description also impacts the community's understanding of the role, explored further in organizational causes.

Hinnant-Crawford (2020) explains that organizational causes are those that "deal with the organizational structure that may create or maintain the problem of practice" (p.54). I list job clarity, administrators, teaching assignments, and processes for implementing instructional coaching as contributing factors under organizational causes within my fishbone. Job clarity is a factor because the instructional coaches at my school regularly report that they are unsure of the expectations for their work. Likewise, the teachers also ask questions to understand the boundaries of the coaches working with them. Jay (2009) contends that teacher resistance can come from discomfort concerning misunderstandings about why the coach is in the classroom, discomfort due to a lack of clarity about responsibilities and roles, and discomfort due to a fear of change. School leadership can help alleviate resistance by clarifying the role of instructional coaches (Matsumura et al., 2009).

Administrators can contribute to the problem by setting the tone and defining the work of the coaches within the school. The conflicting expectations of previous administrators confused the coaches and teachers. The current administration has yet to clarify the expectations and, because of COVID mitigation efforts, has not pursued doing so. Another contributing factor concerns the teaching assignments of the coaches. Currently, the two instructional coaches in my school spend half their day teaching middle school content classes, limiting their time to devote to coaching. This contributing factor relates to time as a resource issue, which I will address later.

Within the organizational structure lie the systems and processes used to implement the work of instructional coaching. Personal interviews with the instructional coaches revealed differences in their strategies to make decisions about their work, such as how they allocate their time, who they spend time working with, and the work activities. Further investigation into the

history of the roles and the needs the coaches were meant to serve lends insight into why their processes vary.

When considering capacity as a root cause, I draw upon Beaver and Weinbaum's (2012) breakdown of the four elements contributing to a school's capacity: human capital, social capital, program coherence, and resources. Human capital refers to the "knowledge, skills, commitment, disposition, and intellectual ability of the members of the school staff" (Beaver & Weinbaum, 2012, p. 3). Therefore, the education of the coaches is a capacity issue, both their previous education and current professional development opportunities. Neither of my coaches has the training to be an instructional coach, and their professional development centers on content and pedagogical knowledge. They have not had opportunities to develop their skills to work with adult learners.

Also under capacity is social capital which Beaver and Weinbaum (2012) define as "the intangible network of relationships that fosters unity and trust within a school's staff" (p. 3). A school culture that values learning, collaboration, and feedback may welcome the work of coaches. However, when the coaches report on teachers' practices to the administration, the school culture changes to mistrust which negatively impacts the ability of coaches to work with teachers by diminishing teachers' receptiveness. Research on instructional coaching from literacy coaching and math coaching stresses that teachers' receptiveness affects a coach's effectiveness (Jay, 2009; Knight, 2009; Matsumura et al., 2010; Polly et al., 2013). Even though trust falls within social capital, it is impacted by other root causes, including historical, policy, organizational, and practice causes. Therefore, it will be essential to consider the many factors that influence it.

Despite resources being a capacity component, I chose to list resources as another major factor and break them down into time and finances. Time is a considerable resource that impacts

the work of the coaches. The coaches need time to co-plan with teachers, observe, co-teach, and lead professional development sessions. Our coaches are limited in their available time to do these activities because they are responsible for teaching three middle school classes. Financial resources directly impact the time coaches have to do instructional coaching work. Budget concerns drive the decision to have coaches teaching part-time and coaching part-time rather than hiring full-time teachers and full-time coaches.

Historically, my problem stems from the initial implementation of instructional coaching and how its utilization over time impacts the current understanding of the role. The instructional coaching role, created when the school transitioned to a new schedule, had two middle school teachers teaching only 50% of the day. In seeking to fill their time, the administration imagined that these skilled teachers could work with kindergarten through 5th-grade teachers on deepening knowledge and improving practices. Ideally, the sharing of expertise of content-specific teachers would help improve the knowledge of the generalist teachers in the lower grades. However, the previous administration did not clarify the role to either the newly promoted coaches or the teachers. Without knowing why the coach was coming into classrooms, teachers worried that the administration thought their teaching was incompetent.

Furthermore, the administration set regular meetings with the coaches that focused on coaches reporting on the teachers, which eroded trust and led to many teachers refusing to make time for the coaches. Some simply said that they did not want the coach to help. Others would schedule meetings or observations and then not attend or change the class schedule and not tell the coach. When the coach came to the class expecting to see a math lesson, the teacher would be doing something else and excuse it by blaming a sudden need to change. In their synthesis of research on literacy coaching that provides guiding principles for school leaders, L'Allier et al.

(2010) stress the importance of a collaborative relationship between the instructional coach and the teacher, noting that at the core, the relationship needs to be built on establishing trust and maintaining confidentiality. When teachers feel that a coach is there to help, not judge, they are more open to working with the coach. More recent guidance offered by Ippolito and Bean (2019) recommends that school leaders do not "conflate supervision and support" (p. 70). They advise that principals avoid asking the coaches to report on individual teachers. Despite attempts by current administrators to change their conversations with coaches, the history of this problem lies in the memories of the faculty. It creates barriers to the work as I seek to change it.

Another important historical factor is that although instructional coaching for math and science began simultaneously, the two roles began by serving different needs. The math coaching role was established to enrich students' math experiences beyond the standard curriculum. The science coach was established to ensure the development of a vertically aligned science curriculum. Because of these needs, the individuals implementing coaching duties diverged on the operationalization of coaching, which I explore further under practice issues. This divergence adds to the lack of clarity about what the coach should do. Teachers engaging with the science coach to plan units wonder why the math coach chooses to work with children instead of curriculum development.

The final major cause of my problem is practice or pedagogical issues. This cause is related to the capacity cause, except I explore whether the coaches *know* how to do what they need to do under capacity. In this category, I want to consider what they are doing and how they are doing it. The two instructional coaches have different approaches to their work. One tries to meet regularly with teachers to help plan units, while the other devotes a defined period of time to working with small groups of students. Research has found that of the many roles and responsibilities

instructional coaches have, providing time to work directly with teachers is the most effective (Coburn and Russell, 2008; Hopkins et al., 2017; Polly, 2012).

1.7 Statement of the Problem of Practice

My problem of practice is that despite my school's decision to begin using instructional coaches to support classroom instructional practices, instructional coaches struggle to make gains. Research on coaching in educational settings sheds light on effective coaching strategies and skills. This research could inform how my school designs and implements instructional coaching to increase the impact on classroom instructional practices.

Math instruction is one area where teachers need help differentiating their instructional practices. Debates over math instruction are a common problem for any school administration, and my school is not immune. In my 26 years at this school, we have fluctuated between using and not using ability classes, also known as tracking, in math. Our most recent position to keep students in heterogeneous ability classes was made after careful consideration of parent concerns about the effects tracking had on their child, a desire to ensure our practices align with our mission of providing a challenging academic curriculum for all students, and a review of the research highlighting the inequities that tracking perpetuates (Gamoran, 1992; Spina, 2019).

Recognizing that our decision would require teachers to learn strategies that enabled them to teach to a wide range of abilities within the same class, we invested in a variety of professional development, including training offered by the math curriculum company and training in differentiated instruction. Past experiences with professional development have demonstrated that providing the training is not enough to ensure translation into practice. Therefore, we also invested

in a new faculty position to provide one-on-one support to teachers by a peer with math content expertise. This instructional coach is now in his third year. Park and Datnow's (2017) research into the use of differentiated instruction notes that while DI is considered something that is done at the teacher level, administration plays a significant role in setting the conditions for implementation. So, I am left wondering why the steps we have taken are not producing the effects we had hoped they would.

One possible answer comes from research on literacy coaching. Matsumura et al. (2009) state that researchers found the enactment of instructional coaching in schools is influenced by variation in organizational and social factors, such as a district's policy for determining who is qualified to serve as a coach, the way the coaching job is interpreted, the existing norms for teachers' professional community and the principal's leadership (p. 657). She reports that with regards to a principal's leadership, the following is necessary: Public endorsement of the coach, granting the coach professional autonomy, and active participation in the reform (Matsumura et al., 2009, p. 685). I have done all these things in my work with the instructional coaches. After a series of meetings addressing the teachers' lack of receptiveness to the coach's guidance, I attempted to support the coaches by arranging a schedule for teachers that provided time for them to meet with coaches during the school day. I attended the initial meetings to state my support and provide my vision for the collaboration. I sent the coach to differentiated instruction workshops explicitly designed for instructional coaches, and I provided articles to the coaches about having difficult conversations. We continued to meet weekly to discuss progress. The coaches reported some success with a few teachers. However, recently raised parent concerns, my classroom observations, and a review of lesson plans point to the fact that instruction is not differentiated in many classrooms.

Additionally, the number of students referred to support services for math is increasing. The increase may be related to teachers feeling they cannot help these students in class, and because previous instruction did not meet the needs of these students, therefore the students are now considered below grade level in their skills. Thus, I am left to ask again, what more must be done? Why have attempts to improve continued to fail?

Perhaps it is because we have failed to diagnose this problem as an adaptive challenge. According to Heifetz et al. (2009), a cycle of failure and a persistent dependence on authority are two characteristics of adaptive challenges (p. 71). Adaptive challenges require more than authoritative expertise. They "can only be addressed through changes in people's priorities, beliefs, habits, and loyalties" (Heifetz et al., 2009). My school has done many things to support the conditions for change, but it will not happen without the teachers' motivation to change their practices.

Interestingly, Matsumura's research on literacy coaching offers a similar insight. In response to her finding that principals setting aside time for coaches to meet with teachers and helping coaches deal with reluctant teachers were not associated with greater teacher participation, she explains, "Teachers are generally the ultimate decision-makers regarding whether they will work with a coach or not" (Matsumura et al., 2009, p. 686). As I work to ensure instruction is differentiated, considering the adaptive nature of the problem will be necessary. Teachers must be willing to change and be given the skills to do so.

Our current model of tasking instructional coaches with helping teachers change their practices is met with passivity and resistance. Investigating how the coaching role is interpreted could help me define areas for change. A more extensive literature review may reveal coaching models and provide insights, cautions, and possible interventions that can help me strengthen the

ability of the instructional coaches to affect change, thereby increasing the teachers' use of differentiated instructional practices in their lessons.

2.0 Review of Supporting Scholarship

Two primary goals of education are ensuring individual opportunity and national competitiveness. Our nation's competitiveness depends on the STEM workforce (National Science Board [NSB], 2015). "STEM knowledge and skills are used in many more occupations than those traditionally thought of as science and engineering" (NSB, 2015). Enabling pathways by removing roadblocks that prevent student access to STEM careers is a priority for schools (NSB, 2015). These pathways begin with pivotal experiences in middle school and in math classes (Almeda, 2020; Kang et al., 2019; Speilhagen, 2010). Meaningful experiences can potentially keep students engaged and interested in pursuing more. Differentiation provides meaningful engagement by considering the students' interests, readiness, and experiences (Tomlinson et al., 2003). The Every Student Succeeds Act (ESSA, 2015) recommends using instructional coaches to support teachers in planning differentiated instruction, developing assessments, and interpreting student data. By working with teachers to create deeply engaging learning experiences, instructional coaches impact the pathways to STEM careers.

Given the vital role middle school math experiences have in supporting student pathways to STEM careers, research has examined the engagement and achievement of students in middle school. To facilitate the study, researchers consider the affective, behavioral, and cognitive dimensions of engagement (Fung et al., 2018; Sciarra & Seirup, 2008). In studying student engagement in math, Fung et al. (2018) found that student interest and active cognitive engagement positively impacted student performance. They surmise that these two components constitute productive engagement (Fung et al., 2018). Productive engagement involves "activities that require active learning and sustained activation of working memory, long-term memory, and other

executive processes" (Park et al., 2014, p. 104). Earlier research investigating the impact of engagement on achievement concerning race also found that student performance improves when students are actively engaged (Sciarra & Seirup, 2008). Therefore, productive engagement in learning math leads to improved student performance., 2008). Therefore, productive engagement in learning math leads to improved student performance.

One way that schools try to meet the demands of active engagement is to use ability groups. The assumption is that grouping students of similar abilities allows teachers to plan instruction that aligns with the students' cognitive skills and provides the right level of challenge for the students to maintain their interest (Hollifield, 1987). While some of the research on the use of ability groups and achievement shows that high-achieving students benefit from ability grouping, other research shows no net gains for any ability level (Gamoran, 2009; Hoffer, 1992; Slavin, 1993). Yet, some studies of ability grouping suggest that grouping benefits all students when it is based on criteria relevant to the subject area, particularly in math and reading, students move based on their progress, and differentiated instruction meets the needs of the groups (Gamoran, 2009). Issues with ability grouping arise regarding teacher expectations and student efficacy (Spina, 2019). These issues have the potential to impact student achievement., some studies of ability grouping suggest that grouping benefits all students when it is based on criteria relevant to the subject area particularly in math and reading, students move based on their progress, and differentiated instruction meets the needs of the groups (Gamoran, 2009). Issues with ability grouping arise regarding teacher expectations and student efficacy (Spina, 2019). These issues have the potential to impact the student achievement.

As researchers continue to study the connections between ability grouping and achievement, a concerning pattern emerges: Overall achievement levels in schools do not increase

with the use of ability groups (Gamoran, 2009; Slavin, 1993; Spina, 2019). Despite the gains students in the high-level groups may show, students in the low-level groups achieve less than their counterparts in heterogeneous ability groups (Gamoran, 2009). In his synthesis of research, Gamoran (2009) reports that an increasing body of international and cross-national studies "are consistent with numerous single-nation studies showing that tracking tends to reinforce inequality" (p. 9). This spurs questions about the inequity of ability grouping, especially when the ability groups remain fixed, as is typical during middle school (Boaler, 2013). Before eliminating ability groups to reduce inequities, it is important to note that moving to mixed ability groups may harm high-achieving minority students the most (Gamoran, 2009). Schools that utilize heterogeneous ability groupings to serve all students need to keep this in mind. a move to mixed ability groups may harm high-achieving minority students the most (Gamoran, 2009). Schools that utilize heterogenous ability groupings to serve all students will need to keep this in mind.

Multiple studies show that achievement improves when schools use heterogeneous or mixed ability grouping. In their study of math students in New York, Burris et al. (2006) found "that probability of completion of advanced math courses increased significantly and markedly in all groups, including minority students, students of low socioeconomic status, and students at all initial achievement levels," after the district moved to mixed ability math classes in middle school (p. 105). Similarly, Boaler (2013) reports in her longitudinal studies of 700 students in California and 500 students in England that she found "the students who worked in schools in mixed ability groups performed at higher levels overall than those who worked in a set or tracked groups" (p. 148). She concludes that schools should encourage growth mindset practices, including moving away from ability groupings that label abilities as fixed, noting that these practices harm minority students and girls (Boaler, 2013). In short, the evidence supports theof mixed ability groups to help

all students achieve. practices including moving away from ability groupings that label abilities as fixed noting that these practices are particularly harmful for minority students and girls (Boaler, 2013). In short, the evidence supports the use of mixed ability groups to help all students achieve.

Utilizing mixed ability groupings enables opportunities for all students and provides a pathway to STEM careers. However, simply eliminating ability groups does not do enough. Mixed group settings demand differentiated and engaging instruction. The Every Student Succeeds Act of 2015 (ESSA, 2015) prompts schools to utilize instructional coaches to support teachers' abilities to differentiate instruction. Understanding the role and the skills of instructional coaching can help school leaders hire and support effective instructional coaches. Therefore, this literature review will examine differentiated instructional practices in mixed ability classes, the role of instructional coaches in improving differentiated instruction in mixed ability classes, and the skills instructional coaches need to be effective in helping teachers differentiate instruction in mixed ability classes.

2.1 Definition of Terms

Mixed ability grouping - The term mixed ability group refers to grouping practices between and within classrooms that involve placing students with diverse levels of ability together to learn a content area.

Differentiated instruction - Researchers define differentiated instruction in varied ways. This paper defines it as a means of employing instructional strategies that address a broad range of learners' readiness levels, interests, and modes of learning (Tomlinson et al., 2003). Address a broad range of learners' readiness levels, interests, and modes of learning (Tomlinson et al., 2003).

Instructional coach - Increasingly, schools employ professionals with expert content knowledge and teaching skills to support colleagues in developing their practices (Denton & Hasbrouck, 2009; Kowal & Steiner, 2007). With this new role, several new terms have emerged: literacy coach, reading coach, math coach, academic coach, and instructional coach (Denton & Hasbrouck, 2009; Kowal & Steiner, 2007). For this review, an instructional coach means a professional responsible for supporting teachers' instructional practices in specific or all academic areas.means a professional responsible for supporting teachers' instructional practices in specific or in all academic areas.

Using these definitions, this literature review will focus on differentiated instructional practices in mixed ability classes and the role of instructional coaches.

2.2 Differentiated Instructional Practices in Mixed Ability Classes

Research points to differentiated instruction as having the potential to meet varied student needs without the inequities of ability grouping in math and reading classes (Gamoran, 2009). Tomlinson's 1995 case study of middle school teachers responding to a district initiative to differentiate instruction for students in heterogeneous classrooms led to some key findings: teachers do not automatically know how to differentiate instruction, educational leaders should be aware of teacher's perceived barriers to implementing differentiated instruction, and teachers more skilled at differentiating can be models for others. Perceived barriers to implementing differentiation include lack of knowing how, lack of time, and lack of administrative support (VanTassel-Baska & Stambaugh, 2005).

As more researchers attempt to study the link between differentiated practices and achievement, the lack of clarity about what constitutes differentiated instructional practices becomes challenging. In 2018, Deunk et al. spoke about the ambiguity in their meta-analysis of 21 studies on language and mathematics in primary education post-1995. They state, "When it is unclear how differentiation took form within the classroom and what teachers actually did in order to differentiate, its effects in terms of higher test performance are difficult to interpret and of less theoretical and practical value" (Deunk et al., 2018, p. 44).

Despite the barriers, some studies are finding positive impacts. Valiandes' 2015 study results show that "in classrooms where differentiated instruction methods were systematically employed, students made better progress compared to students in classrooms where differentiated instruction methods were not employed" (p. 17). While Valiandes' study focused on reading, another study, Goddard et al. (2015), addresses both reading and math. They found that school culture supporting differentiated instructional practices positively impacts students' math and reading achievement. However, their study did not track teachers' actual practices, just the teachers' perceptions of differentiated instruction.

Though research is unclear about what constitutes a differentiated practice and, therefore, which practices are effective and which are not, it does support helping teachers understand that their instruction needs to consider the uniqueness of students' abilities, interests, and experiences. Furthermore, it suggests that professional development helps.

2.3 Role of Instructional Coaches in Differentiating Instruction

Recent studies have explored the effects of professional development in differentiated instruction on student achievement. In a large-scale study, Prast et al. (2018) investigated professional development in the form of workshops and trainings led by educational consultants paired with sustained training via instructional coaches. They found that professional development "had a significant small positive effect on student achievement growth" for all achievement levels (Prast et al., 2018, p. 22). Although this study found a positive impact on student achievement, it does little to illuminate the specific ways in which the instructional coaches worked with individual teachers that may have led to the student achievement or to delineate the effective teaching practices utilized by teachers. Professional development must provide teachers with specific practices to overcome the barrier of not knowing how to differentiate. For instance, when Eysink et al. (2017) provided a specific model for differentiation, they found that it resulted in more differentiation and that children learned more than the students in classes where teachers did not use the approach. The specific model they used included six science modules developed by primary teachers and experts in differentiation. Teachers were trained in teaching using the modules provided. Unfortunately, the teachers' use of differentiation practices did not extend beyond the teaching of these modules to other regular lessons.

Similarly, Valiandes (2015) also references the importance of professional development for differentiated instruction. Her study found that "differentiated instruction in mixed ability classrooms was possible through systematic, focused and continuous teacher training and support" (Valiandes, 2015, p. 22). In conclusion, specific and focused professional development positively impacts differentiated instruction model they used included six science modules developed by primary teachers and experts in differentiation. Teachers were trained in teaching using the

modules provided. Unfortunately, the teachers' use of differentiation practices did not extend beyond the teaching of these modules to other regular lessons. Similarly, Valiandes (2015) also references the importance of professional development for differentiated instruction. Her study found that "differentiated instruction in mixed ability classrooms was possible through systematic, focused and continuous teacher training and support" (Valiandes, 2015, p. 22). In conclusion, specific and focused professional development positively impacts differentiated instruction.

School leaders can support teachers' differentiated instruction by providing specific and focused professional development. Research shows that instructional coaching meets the criteria of effective professional development while being specifically focused on teaching practices in content areas (Desimone & Pak, 2017; Kowal & Steiner, 2007; Stoetzel & Shedrow, 2020). Furthermore, the Every Student Succeeds Act (ESSA, 2015) recommends instructional coaching to help teachers improve their teaching practices (Desimone & Pak, 2017). Understanding how instructional coaches can be utilized effectively to support teachers involves understanding the role of an instructional coach and the skills a coach needs to be effective.

2.4 Roles and Responsibilities of Instructional Coach

Defining the role of the instructional coach affects how administrators, teachers, and coaches structure the work. In a study of 32 math coaches in 21 districts in Tennessee, Russell et al. (2020) report that coaches have multiple responsibilities associated with their role, including: "direct support for teacher development through observing and providing feedback, co-teaching, orchestrating professional development sessions, intervention support for students, curriculum and assessment development, data analysis and management, as well as general administrative tasks"

(p. 173). These tasks fit within the four fundamental roles of coaches: content expert, promoter of reflective instruction, professional development facilitator, and supporter of a school-wide learning community (Polly et al., 2013).

Of the many roles and responsibilities instructional coaches have, those that provide time for the coach to work directly with teachers are the most effective. As noted by Desimone and Pak (2017), "Whenever possible, coaching should facilitate shared learning" (p. 8). Because the role of a coach involves working directly with teachers, it should be rooted in elements of partnership (Knight, 2011; L'Allier et al., 2010). A partnership model "is about shared learning as much as it is about shared power" (Knight, 2011, p. 18). Embedded in a partnership model are Knowles' principles of andragogy, specifically that adult learners have an accumulation of knowledge, that they need to be shown respect, and that they should actively participate in the learning process (Knowles et al., 2020). A key barrier to the coach and teacher partnership is teacher resistance (Jacobs et al., 2018; Jay, 2009; Knight, 2009). In fact, research on instructional coaching from the fields of literacy coaching and math coaching stress that teachers' receptiveness impacts a coach's effectiveness (Jay, 2009; Knight, 2009; Matsumara et al., 2010; Polly et al., 2013). Jay (2009) contends that teacher resistance can come from discomfort in relation to misunderstandings about why the coach is in the classroom, discomfort due to a lack of clarity about responsibilities and roles, and discomfort due to a fear of change. School leadership can help alleviate resistance by clarifying the role of instructional coaches (Matsumara et al., 2009).

Given all the roles that coaches may have, one important consideration is that they are not in an evaluative or supervisory role (Polly, 2012). While Polly's research focused on instructional coaching in math, the research on literacy coaching adds support to the statement. In their synthesis of research on literacy coaching that provides guiding principles for school leaders, L'Allier et al.

(2010) stress the importance of a collaborative relationship between the instructional coach and the teacher, noting that at the core, the relationship needs to be built on establishing trust and maintaining confidentiality. When teachers feel that a coach is there to help, not judge, they are more open to working with the coach. More recent guidance offered by Ippolito and Bean (2019) recommends that school leaders do not "conflate supervision and support" (p. 70). They advise that principals avoid asking the coaches to report on individual teachers in meetings with instructional coaches. Instead, conversations between principals and coaches should focus on progress towards overarching goals and the support needed to accomplish them. By understanding the difference between supervision and support, principals empower coaches and teachers to work together.

Research has also found that coaches are more effective when their direct work with teachers takes priority over other tasks like coordinating testing, managing student data, or working with small groups of students (Coburn and Russell, 2008; Hopkins et al., 2017; Polly, 2012). One explanation for this comes from the work of Bean et al. (2010), who found that "spending time on school management or administrative tasks seemed to diminish the value of the coach in the eyes of the teachers" (p. 110). They suggest that teachers are less likely to value a coach's input when they believe the coach is disconnected from the classroom.

The role of a coach, as seen through the eyes of an administrator and teacher, is important. An administrator influences the organizational aspects of the role, and teachers impact the relational aspects. More important is the way coaches define the roles for themselves. In their study of why coaches sought professional development and what they needed from it, Stoetzel & Shedrow (2020) found that clarifying and communicating the coaching position—to oneself, administration, and teachers as partners—was often referenced as an overarching need and

outcome of participating in the online coaching certificate. The next section of this paper examines the skills instructional coaches need to do the work of supporting teachers.

2.5 Skills of Instructional Coaches

This section reports on the literature concerning the skills instructional coaches need to be effective. Research suggests that effective coaches have skills in three areas: pedagogical knowledge, content expertise, and interpersonal skills (Frost & Bean, 2006; Hopkins et al., 2017; Kowal & Steiner, 2007; L'Allier et al., 2010; Polly et al., 2013). In fact, Campbell, and Malkus (2011) found that after coaches participated in extensive training in content, pedagogy, and coaching skills, they were more likely to increase student achievement. Furthermore, the Association of Mathematics Teacher Educators (AMTE, 2013) emphasizes the same three areas in its Standards for Developing Elementary Mathematics Specialists. And the same three areas are addressed within the seven overarching standards of the International Literacy Association's Standards for the Preparation of Literacy Professionals (Bean & Kern, 2018). In sum, the literature on coaching skills agrees that coaches need skills in content knowledge, pedagogical knowledge, and interpersonal skills.

When ranking the importance of the three skill sets, instructional coaches selected interpersonal skills as the most important (Kowal & Steiner, 2007). Kowal and Steiner (2007) report that the coaches "believed they could improve their content expertise through training, but people skills would be more difficult to acquire" (p. 4). Considering that Desimone and Pak (2017) found that the interpersonal nature of coaching is what makes it an effective form of professional development, the coaches' recognition of the importance of improving their interpersonal skills

makes sense. Russell et al. (2020) sought to dive deeper into interpersonal skills to understand the implementation challenges when scaling up instructional interventions. While investigating how coaches adapt to their diverse relational contexts, Russell et al. (2020) found that coaches responded by becoming more directive or more responsive in their approaches to teachers. Directive approaches include having shorter conversations that provide clear, specific directions on ways to improve teaching practices. Responsive approaches involve extended discussions that dive deeper into the teacher's mathematical reasoning and understanding.

Interestingly, Russell et al. (2020) note that rather than advocate for one approach over the other, it is more important for the coach to be able to adapt based on their assessment of teacher receptiveness. They state that the direct approach sets the stage for future conversations to become more responsive over time and could be a necessary first step (Russell et al., 2020). Their study highlights the nuances of the interpersonal skills coaches need and provides essential information for the training of instructional coaches.

Instructional coaching requires that coaches have content knowledge, pedagogical knowledge, and interpersonal skills. The Association of Mathematics Teacher Educators and the International Literacy Association recommend that any program designed to train coaches focus on these three areas. Other researchers suggest that training includes time in settings where the coaches can develop interpersonal skills (Ippolito, 2010; Polly et al., 2013). Schools and districts seeking to hire coaches or to offer professional development for their coaches should focus on these three areas.

Of the three skill areas instructional coaches need- content knowledge, pedagogical knowledge, and interpersonal skills- interpersonal skills are the most ambiguous. As Russell et al. (2020) point out in their study, school leaders hire coaches because of the coaches' proven teaching

skills, which demonstrate content and pedagogical knowledge but being a good teacher does not mean that the person will have skills in working with adult learners. Some even argue that focusing on interpersonal skills should precede content-specific knowledge (Stoetzel & Shedrow, 2020). They worry that focusing too much on "the *what* of coaching content might leave little room to address the *how* of coaching practices." (Stoetzel & Shedrow, 2020, p. 2). Furthermore, little is known about the specific techniques that compose the effective interpersonal skills coaches need. Considering the impact instructional coaches have on teachers' instructional practices in math, their role, and the skills required to be an effective coach, several questions remain that could help schools understand the necessary interpersonal skills coaches need. Answers to these questions could provide a focus for the professional development and training of instructional coaches.

2.6 Summary of Findings

Student achievement increases when teachers have adequate professional development that supports the teachers' capacity to differentiate instruction. Research shows that instructional coaching meets the criteria for effective professional development but also shows the importance of clearly defining the coach's role. To do their work effectively, instructional coaches need content knowledge, pedagogical knowledge, and, more importantly, interpersonal skills. Additionally, research documents the need for teacher buy-in. If teachers are not receptive to working with an instructional coach, the coach's effectiveness is diminished. The way coaches and teachers view the coaching role and the emphasis school administration place on the importance of working with coaches impact teacher receptiveness to coaching.

3.0 Theory of Improvement and Implementation Plan

Because instructional coaches can improve teaching practices that directly impact the quality of teaching students receive, they are a valuable resource to schools that use them wisely. Unexamined, the work of an instructional coach may not add to program quality and therefore drain resources of budget and time. Research from literacy coaching and math coaching elucidates the challenges and hindrances obstructing coaches' effectiveness. The school began using instructional coaches in 2018 in math and science. Interviews with coaches, teachers, and administrators in the school show the realities of the challenges in context and demonstrate the lack of a shared understanding of the role of instructional coaches. Addressing these challenges can lead to more effective collaboration, ensure prudent use of resources, and, most importantly, impact student achievement. Therefore, the hope is to have teachers, administrators, and instructional coaches report a robust and shared understanding of the role of instructional coaches by the beginning of the 2024 academic year.

3.1 Driver Diagram

Driver diagrams map a theory of improvement by showing desired outcomes, crucial parts of the system that influence the outcome, and possible changes (Hinnant-Crawford, 2020). The purpose of the driver diagram is to determine how best to promote change considering the inherent drivers or “levers” within the current setting. Figure 7 illustrates a driver diagram informed by research on instructional coaching and empathy interviews conducted in my context with the

teachers, administrators, and instructional coaches. My context's three primary levers are interactional, personal, and organizational/operational factors.

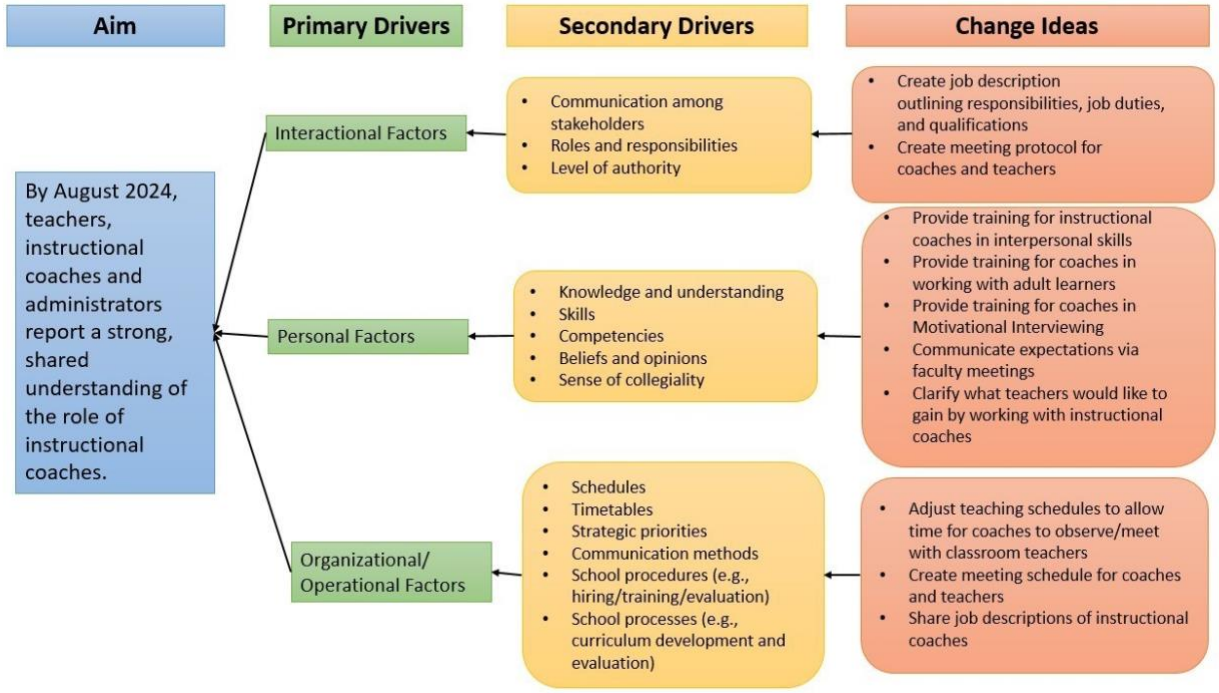

Figure 7 Driver Diagram

The primary driver of interactional factors comprises several secondary drivers, including communication among stakeholders, roles and responsibilities, and level of authority. Making a change that influences these drivers is supported by research on coaching that emphasizes the importance of a collaborative relationship. L'Allier et al. (2010) stress that, at the core, the relationship needs to be built on establishing trust and maintaining confidentiality. Communication, clearly defined roles and responsibilities, and clearly defined levels of authority impact trust and confidentiality. Further, Ippolito and Bean (2019) recommend that school leaders do not "conflate supervision and support" because of the negative impact on trust (p. 70). A shared understanding of the role of instructional coaching results from clarity in interactional factors.

The primary driver of personal factors encompasses the secondary drivers of knowledge and understanding, skills, competencies, beliefs and opinions, and a sense of collegiality. Much of

the research on instructional coaching addresses these drivers, especially skills and beliefs (Bean & Kern, 2018; Ippolito, 2010; Matsumura et al., 2009; Polly et al., 2013). As Matsumura et al. (2009) explain in their research on literacy coaching, "teachers are generally the ultimate decision-makers regarding whether they will work with a coach or not" (p. 686). A change that impacts the beliefs and opinions of teachers steers their decision to work with a coach. Establishing a shared understanding through similar beliefs brings consistency of expectations and aligns the collaborative work. Therefore, changes influencing personal factors impact a shared understanding and bring ~~us~~ closer to the aim.

The primary driver of organizational and operational factors can be broken down into secondary drivers, including schedules, timetables, strategic priorities, communication methods, school procedures, and school processes. Changes that impact this driver support a shared understanding because they involve structures that help operationalize the work. In fact, research has found that providing time for instructional coaches to work directly with teachers is one of the most effective changes schools can make (Coburn and Russell, 2008; Hopkins et al., 2017; Polly, 2012). Therefore, considering changes that influence time and resources is another area for potential improvement.

3.2 Inquiry Intervention

Several themes emerged from the empathy interviews, but one particularly salient theme is job clarity. Teachers, administrators, and instructional coaches did not understand the expectations for an instructional coach's role. Further, they shared that they lacked a sense of their role relating to the coaching work. Therefore, the inquiry question that guides the idea for change

is how does knowing the expectations for instructional coaching improve the attitude and actions of an instructional coach, a teacher, and an administrator? An analysis of the system using a driver diagram shows a few places where job clarity can be addressed, providing possibilities for interventions. Thus, for the first intervention, I created a job description for an instructional coach.

3.2.1 PDSA Cycle One

Figure 8 PDSA-1: Creating an Instructional Coach Job Description

Creating the job descriptions involved gathering input, creating a document, and sharing the document, see Figure 8. Stakeholders were engaged throughout the process. Stakeholders, in general, include all the faculty at my school, as they have expectations regarding the work of instructional coaches. Key stakeholders include the people who have power and influence regarding implementing the coaching role, such as administrators, curriculum chairs, teachers, and instructional coaches. The instructional coaches provided essential information about the work

they currently do and hope to do. Administrators and curricular chairs framed the expectations for the job by determining schedules, curriculum, assessments, and priorities for professional development. Teachers control how they engage with the instructional coaches. Gathering information from all key stakeholders was essential in creating a job description that provided clarity and guides work in an agreed-upon fashion.

Information collected via the surveys sent to instructional coaches, teachers, and administrators helped identify general ideas about instructional coaching responsibilities; see Appendix A for survey questions. The data, along with job descriptions gathered from experts in the field and other schools, served as a foundation for a job description draft. Key stakeholders reviewed the draft and offered feedback. Once completed, I sent the final job description and a PowerPoint presentation detailing the history of instructional coaching at the school and clarifying the role to all faculty and staff.

3.2.2 PDSA Cycle Two

Figure 9 PDSA 2: Implementing an Instructional Coach Job Description

The second PDSA cycle, see Figure 9, involved the implementation of the job description. Before sharing the job description with faculty, I gathered data, such as meeting agendas and notes reflecting the current state. After a few weeks of implementation, the instructional coach participated in a check-in interview. Finally, I sent a post-survey to all stakeholders.

3.3 Data Gathering and Analysis

During the implementation of interventions, several data sources captured what transpired, see Figure 10.

Inquiry Question	Sub-questions	Data Collection	Analysis
How does knowing the expectations for instructional coaching change the attitude and actions of an instructional coach, the teachers, and the administrators?	What kinds of activities did the coach engage in prior to and after having a job description?	Survey faculty Semi-structured interviews (selective sampling) Documents (Calendars, meeting agendas, meeting notes)	Likert scales Content analysis Document analysis
	How does the focus of meetings between the instructional coaches and the teachers change?		
	How does the focus of meetings between the instructional coaches and the administrators change?		
	How do teachers' attitudes towards instructional coaches change?	Survey faculty Semi-structured interviews (selective sampling)	Likert scales Content analysis

Figure 10 Measurement Plan

Surveys collected before the job description creation, and the same survey sent again after producing and communicating the job description, served as the primary data source. All faculty,

including instructional coaches and administrators, were invited to take the survey. Comparing the Likert ratings from the pre- and post-intervention surveys highlights the changes in understanding and activities from before and after the intervention.

Another source of data comes from the semi-structured interview transcripts. Analyzing the survey results provided a selective sample of stakeholders representing different perspectives and experiences that required further questioning to understand completely. I chose four participants: the instructional coach, a teacher with less than five years of experience at the school, a leader of the specials teachers, and an early childhood educator. Content analysis helped determine the main themes expressed by participants.

Using document analysis, themes in meeting agendas, calendars, and notes emerged. I noted similarities and differences in themes before and after creating and disseminating the job description and used it to detect any changes in the activities of the instructional coaches.

4.0 Results

Data collected, including pre- and post-intervention survey results, documents such as calendars, emails, meeting notes, and semi-structured interviews, provide answers to the inquiry question and sub-questions. This section reports on the results of the surveys and data collection utilized to gather the answers.

Table 1 Participation in Instructional Coaching Surveys

	Total possible	**Pre-intervention Survey**	**Post-intervention Survey**
Faculty	49/50*	28 (57%)	25 (50%)
Administrators	3	3 (100%)	3 (100%)
Instructional Coaches	2/1*	2 (100%)	1 (100%)
Total	54	33 (62%)	29 (52%)

Note. *The math coach changed roles during the academic year from a coach to a full-time math instructor. Therefore, the total number of faculty increased by one, and the number of coaches decreased by one.

As shown in Table 1, 33 stakeholders participated in the pre-intervention survey, and 29 participated in the post-intervention survey.

4.1 Sub-question 1: What activities did the coach engage in before and after having a job description?

Table 2 captures the activities of the instructional coach reported via surveys, interviews, and documents before and after the intervention implementation.

Table 2 Confirmation of Instructional Coaching Activities

Instructional coaching activities	Semi-structured interview		Instructional Coach Survey		Administrator Survey		Teacher Survey		Calendar		Emails	
	pre	post	pre	post	pre	post	pre	post	pre	post	pre	post
Assist in planning lessons or units	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓
Recommend professional development	✓	✓		✓		✓		✓			✓	✓
Co-teach and/or model lessons	✓	✓		✓		✓		✓	✓	✓		✓
Classroom visit/observations	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓
Leading professional development												
Recommending resources	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓
Reviewing student work and assessments with teachers			✓									

All stakeholders report two activities taking place before and after the intervention: assisting in planning and recommending resources. Following the intervention, all stakeholders include co-teaching, observing, and recommending professional development in the list of activities that occur with the instructional coach.

Of note, leading professional development as one of the coach's activities is non-existent. In the interview with the coach, she reported that this is something she used to do pre-COVID and that she desires to return to doing it soon. Another apparent discrepancy regards reviewing student work and assessments with teachers. As shown in Table 2, the instructional coach's pre-intervention survey reports that she spent time assessing students, yet emails, calendars, interviews, or the faculty survey did not validate this. A follow-up interview revealed that before COVID, she would train teachers to use pre-assessments and post-assessments of students' conceptual understandings but has not done so in the past three years.

4.2 Sub-question 2 and 3: How did the focus of the meetings change?

Analysis of the themes from the semi-structured interviews and agenda notes of meetings reveals a lack of change in the focus of the meetings. The instructional coach reported using meetings to plan lessons and units of instruction and to recommend resources. Her notes from meetings following the intervention show that her focus remained unchanged. Additionally, interviews with faculty affirm that meetings focus on planning and resource recommendations.

4.3 Sub-question 4: How do teachers' attitudes change?

In seeking to measure attitudes, social psychologists assess the behavioral, cognitive, and affective aspects of attitude that, taken together, provide confidence of an accurate view of the subject's attitude (Fishbein & Ajzen,1975; Mahat, 2008; Svenningsson et al., 2021). In this study, behavior measures include reports of teachers' and coaches' interactions and activities. Calendars, meeting notes, emails, interview responses, and surveys provide the data for this aspect. Questions focused on one's understanding of the instructional coach's role asked in the surveys and interviews provided measures of the cognitive element. Finally, affect is measured through questions about the importance of the role.

Table 3 lists responses to survey questions about stakeholders' interactions and activities with instructional coaches.

Table 3 Years of Experience at the School and Interaction with Instructional Coaches

Pre-intervention			Post-intervention		
Years at the School	**Number of respondents**	**Answer to what interactions have you had with the instructional coach?**	**Years at the School**	**Number of respondents**	**Answer to what interactions have you had with the instructional coach?**
Less than 1	6	All report no interaction.	Less than 1	4	All report no interaction.
1 to 5	8	7 report no interaction. 1 reports reviewing units of instruction.	1 to 5	8	3 report no interaction. 5 report reviewing units of instruction.
6 to 10	10	2 report no interaction.	6 to 10	7	3 report no interaction.

		2 report not applicable. 1 reports not having an instructional coach at the school. 1 equated this to working with the research coordinator. 4 report co-planning, gathering resources, and observations.			4 report co-planning, gathering resources, and observations.
More than 10	8	1 reports no interaction. 1 reports they are not sure if they interacted. 6 report co-planning, gathering resources, and observations.	More than 10	10	3 reports no interaction. 7 report co-planning, gathering resources, and observations.

Before the intervention, one instructional coach said that in her attempts to schedule meetings and observations with teachers in one grade, half of the grade-level classroom teachers responded promptly. The other half took a week to respond and then asked to delay the meeting. The coach interpreted the slow response and the request to postpone as resistance. She said, “When I send an email asking to meet, I know who I’ll get a response from and who I won’t.” However, in their surveys and emails, teachers report the delays for several reasons, including that they are not currently teaching science, have too many special events, and are preparing for parent conferences.

An unexpected finding was that teachers at all levels of experience in the school were unclear about interacting with an instructional coach. Before the intervention, some participants with more than five years of experience at the school claimed that the school did not have an instructional coach or did not know if they had ever interacted with one. Following the intervention, no one reported uncertainty. All participants could clearly identify whether they interacted or did not interact with the instructional coach. One participant who did not interact commented, “I have not had any *opportunity* to work with an instructional coach.” Interestingly, all the participants at the school for less than a year report never interacting with the instructional coach both before and after the intervention.

Regarding the understanding of an instructional coach's role, the pre-intervention survey's results affirm a lack of understanding. In fact, 16 reported having “little understanding” or “no understanding”. Contrarily, only one participant said they completely understood the role, see Figure 11.

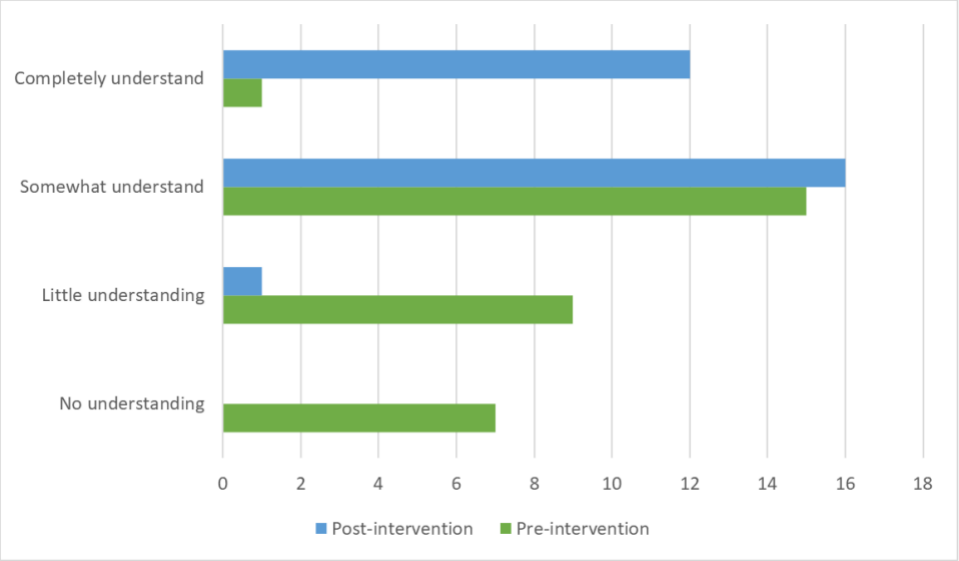

Figure 11 Reported Level of Understanding Pre- and Post-Intervention

Survey results following the creation and communication of the job description reveal that faculty, administrators, and instructional coaches completely understand (n=12) or somewhat

understand (n=16) the role of the instructional coach. One respondent reported having little understanding. The same respondent indicated that they had not reviewed the email or presentation about the job description. No one reported having no understanding.

Questions regarding the importance one gave to the role of instructional coaching served to measure the affective aspect of attitude. Before the intervention, faculty, administrators, and instructional coaches were asked about the importance of the role to the school, see Table 4. Most responses, 78%, indicated that the role was "very important", "important", or "somewhat important". Three responses indicate that the role was not important at all. Notably, two of those three are faculty members with over ten years of experience.

Table 4 Ranking of the Importance of Instructional Coaching for the School

	Pre-intervention **31 responses**	**Post-intervention** **29 responses**
Very Important	13%	21%
Important	39%	34%
Somewhat Important	26%	31%
Slightly Important	13%	14%
Not Important	9%	0

After the intervention, when asked how important the role of instructional coaching is to the school, the majority of respondents, 86%, rated it "very important," "somewhat important" or "important". Four respondents consider it to be "slightly important." No one responded that it was "not important." Four of the six faculty members who rated it "very important" have been at the

school for over ten years. Interestingly, two of the four who said it was “slightly important” have also been at the school for over ten years.

A common theme that emerged as a takeaway from the interventions is that the coaching role is non-evaluative. Following the informational PowerPoint presentation, one faculty member, who previously worked as an instructional coach, emailed:

> For me, the biggest challenges were understanding the role as being evaluative vs. non and administrative vs. non. In fact, I was originally called a quasi-administrator to faculty which really muddied the waters. I only wanted to be a helpful colleague and immediate tension rose. I think that it is excellent that you firmly stated expectations to all teachers. It will make a complete difference on how people work with each other (especially those who feel like they are under pressure). (M. Yalch, personal communication, February 22, 2023)

Another faculty member shared in a survey response that they felt the most important part of instructional coaching is “Building relationships with the teachers so that the teachers feel supported and not surveilled and see the coach as an ally, resource, and fellow searcher."

This was echoed by another participant’s response:

> I think the non-evaluative help in planning and implementing lessons is most valuable. It lets you try new things and worry about the teaching while someone else collects the data and it also give you someone to bounce ideas off of.

5.0 Discussion and Recommendations

Based on the results reported in Section 4, several key findings emerge. This section discusses the key findings and their implications for future practice and investigation.

5.1 Key Findings

5.1.1 Intervention Supported Improved Clarity

All stakeholders benefit from the clarity created by sharing the expectations and responsibilities of the instructional coach. Publishing the job description and creating a short informational PowerPoint to discuss the role are two ways that effectively created clarity. The 16% of responses that were unclear, not sure, or thought that the coach's work was not applicable to them in the pre-intervention survey, dropped to zero percent in the post-intervention survey. Faculty were no longer in the dark but could clearly determine whether they had engaged. Moreover, results from the post-intervention show that 55% engaged with the instructional coach after as opposed to 34% previously.

Attitudes Change Positively with Improved Clarity

Once clarity was created, teachers' attitude towards the position of an instructional coach at the school changed. Besides having a clearer understanding and engaging more, they also attributed a greater importance to the role. The percentage of participants who reported the role as slightly or not important dropped from 21% in the pre-intervention to 16% in the post-intervention.

5.1.2 Instructional Coach as Thought Partner

Educators report that having a thought partner and someone to go to for help that is not evaluating their work, is a valuable support. Every response in the post-intervention uses synonyms for "help," like "support," "guide," and "provide." Four of the 29 responses mention the importance of non-evaluative nature of the role. Keeping this in mind, administrators and instructional coaches should ensure their activities reinforce this message, not undermine it.

5.1.3 New Faculty Need More

Interestingly, all the participants at the school for less than a year reported never interacting with the instructional coach either before and after the intervention. This may be due to the nature of the first year where most seasoned educators try to give space to newer teachers knowing that new teachers are often overwhelmed. Investigating this may reveal assumptions underlying the lack of interaction and provide ideas for possible changes. This should be a priority for the future as the instructional coach provides mentoring that could support the new teacher.

5.2 Limitations of the Study

While the key findings of this study are informative, it is important to note the limitations. One limitation involves garnering information from the missing voices. Another one concerns the timing of the study.

Although over 60% of the stakeholders participated in the pre-intervention survey, and over 50% in the post-intervention survey, there are a number of missing voices that would help to create a clearer picture. Did others choose not to participate because they did feel this was important to them? If so, their attitudes will continue to impact the effectiveness of the instructional coach.

Another limitation is the timing of the study. At the time of this intervention, the instructional coach began a new initiative to bring a Science Olympiad to the school. This undertaking involved a significant portion of her time that impacted her ability to work with teachers. Even so, there was still an increase in the number of participants who engaged with the coach. More information is needed to know if the increase is due to the clarity created by the intervention, or if it is due to the natural flow of the academic year. Most teachers do not engage with the coach in September when their focus of instruction is establishing rules and routines. However, as time passes and they dive into their content, the opportunity to engage naturally increases. By phrasing the question so that participants could consider any interactions in their time at the school, I intended to account for this timing. However, new faculty responses would only be based on a short time at my school.

5.3 Recommendations for Future Practice

To ensure that an instructional coach continues to be a valuable professional resource to all faculty, schools should find ways to connect new faculty to the instructional coach. Further, schools can continue to support the coach's role by messaging the expectations, and following through with actions that match the stated expectations. For instance, when administrators meet

with the coach, they should keep the focus of the meetings on ways to help the coach develop her skills rather than reporting on teachers' competence. Additional clarification should be communicated about how and when to bring concerns forward to both the coach and the faculty. And, administrators should hold themselves and the coach accountable to all the duties and responsibilities contained in the job description. This study revealed that reviewing student assessments and leading professional development are two tasks that the coach is not currently fulfilling. Administrators need to be involved in providing the space on professional development days for this to happen.

5.4 Recommendations for Further Investigation

Continuous improvement involves implementing iterative PDSA cycles that track the progress of improvement over time. Therefore, building upon the improvement of this intervention should continue beyond the completion of this dissertation-in-practice. Possible next steps include refining the change ideas included in this study or returning to the driver diagram to explore other change ideas.

The change idea tested here was communication of the expectations for instructional coaching with the goal to improve the attitude and actions of an instructional coach, a teacher, and an administrator. A refinement of this idea is to work with the instructional coach in her messaging to teachers. An example of a possible communication is sending out to faculty a "Coaching Services Menu" where she lists all the possible ways to engage and asks faculty to respond with their choice.

Returning to the driver diagram in Figure 7, other change ideas for my context that impact a shared understanding include addressing the training of the instructional coach related to working with adult learners and coaching practices. Building off the research by Russell et al. (2020) and Stoetzel & Shedrow (2020), training that focuses on interpersonal skills is rated by coaches as the most needed for their own professional development.

Another possible intervention may be to address the challenges that the instructional coach has with the misalignment of her teaching schedule and the classroom teacher's schedules. Since administrator's have the power to influence the organizational aspects of the job, it falls to them to ensure the coach's schedule aligns with the teachers with whom she works.

6.0 Conclusion

This study stemmed from a recognition that the instructional coaches in my school struggled to impact classroom teaching practices. The aim was to create a shared understanding of the role of instructional coaching among teachers, administrators, and instructional coaches. To accomplish this, I focused my change interventions on improving clarity by creating a job description and publicly sharing the job description via a PowerPoint presentation.

The creation and sharing of the job description created clarity for the administrators, the coaches, and a majority of the faculty. The clarity, in turn, positively impacted attitudes towards the instructional coaches. Additional changes that support the ability of the instructional coach to adhere to the tasks identified in the job description could lead to further improved impact on classroom teaching practices.

Appendix A Survey Questions

Appendix Table 1 Survey for Instructional Coaches

Questions	Responses
In regard to coaching, how are you feeling?	Not well at all (1) to Extremely well (5)
To what extent do you understand your duties as an instructional coach?	I am uncertain (1) to I completely understand (5)
How would you rate teacher's understanding of your role?	I do not know, They do not understand (1) to They completely understand (5)
How would you rate the alignment of your expectations for instructional coaching with the teachers' expectations of instructional coaching?	I do not know, They are misaligned (1) to They are completely aligned (5)
How would you rate the alignment of your expectations for instructional coaching with the administrators' expectations of instructional coaching?	I do not know, They are misaligned (1) to They are completely aligned (5)
What do you feel are the most important components of instructional coaching?	Text entry
In your role as instructional coach, what kinds of activities do you do?	Text entry
How much of your time during a school year is spent:	

-**Meeting with teachers to plan lessons and units of instruction?**	No time at all (1) to A significant amount of time (5)
-**Meeting with teachers to reflect on lessons and units?**	No time at all (1) to A significant amount of time (5)
-**Co-teaching with classroom teachers?**	No time at all (1) to A significant amount of time (5)
-**Observing teachers?**	No time at all (1) to A significant amount of time (5)
-**Teaching a demonstration lesson?**	No time at all (1) to A significant amount of time (5)
-**Working with students in small groups?**	No time at all (1) to A significant amount of time (5)
-**Assessing students?**	No time at all (1) to A significant amount of time (5)
-**Writing curriculum?**	No time at all (1) to A significant amount of time (5)
-**Meeting with administrators?**	No time at all (1) to A significant amount of time (5)
-**Working with student teachers?**	No time at all (1) to A significant amount of time (5)
-**Attending professional development?**	No time at all (1) to A significant amount of time (5)
-**Providing professional development?**	No time at all (1) to A significant amount of time (5)
During a school year, how much priority should the following activities have?	
- **Meeting with teachers to plan lessons and units of instruction?**	Low priority (1) to high priority (5)
- **Meeting with teachers to reflect on lessons and units?**	Low priority (1) to high priority (5)
- **Co-teaching with classroom teachers?**	Low priority (1) to high priority (5)
- **Observing teachers?**	Low priority (1) to high priority (5)
- **Teaching a demonstration lesson?**	Low priority (1) to high priority (5)

- **Working with students in small groups?**	Low priority (1) to high priority (5)
- **Assessing students?**	Low priority (1) to high priority (5)
- **Writing curriculum?**	Low priority (1) to high priority (5)
- **Meeting with administrators?**	Low priority (1) to high priority (5)
- **Working with student teachers?**	Low priority (1) to high priority (5)
- **Attending professional development?**	Low priority (1) to high priority (5)
- **Providing professional development?**	Low priority (1) to high priority (5)

Appendix Table 2 Survey for Teachers

Questions	Responses
How long have you worked at the school	Less than a year, 1 to 5 years, 6 to 10 years, over 10 years
Please select the grades that you teach.	Kindergarten (a), 1st (b), 2nd (c), 3rd (d), 4th (e), 5th (f), 6th (g), 7th (h), 8th (i)
Please select the content areas you teach.	Language Arts (a), Math (b), science (c), Social Studies (d)
How would you rate your understanding of the role of an instructional coach?	I do not know, I do not understand (1) to I completely understand (5)
What do you feel are the most important components of instructional coaching?	Text entry
During your time at the school, what kinds of activities have you done with an instructional coach?	Text entry

During a school year, how much priority should the instructional coaching role devote to the following activities?	
-**Meeting with teachers to plan lessons and units of instruction?**	Low priority (1) to high priority (5)
-**Meeting with teachers to reflect on lessons and units?**	Low priority (1) to high priority (5)
-**Co-teaching with classroom teachers?**	Low priority (1) to high priority (5)
-**Observing teachers?**	Low priority (1) to high priority (5)
-**Teaching a demonstration lesson?**	Low priority (1) to high priority (5)
-**Working with students in small groups?**	Low priority (1) to high priority (5)
-**Assessing students?**	Low priority (1) to high priority (5)
-**Writing curriculum?**	Low priority (1) to high priority (5)
-**Meeting with administrators?**	Low priority (1) to high priority (5)
-**Working with student teachers?**	Low priority (1) to high priority (5)
-**Attending professional development?**	Low priority (1) to high priority (5)
-**Providing professional development?**	Low priority (1) to high priority (5)

Appendix Table 3 Survey for Administrators

Questions	Responses
How long have you worked at the school?	Less than a year, 1 to 5 years, 6 to 10 years, over 10 years

How would you rate your understanding of the role of an instructional coach?	I do not know, I do not understand (1) to I completely understand (5)
What do you feel are the most important components of instructional coaching?	Text entry
During your time at the school, what kinds of activities have you done with an instructional coach?	Text entry
During a school year, how much priority should the instructional coaching role devote to the following activities?	
-**Meeting with teachers to plan lessons and units of instruction?**	Low priority (1) to high priority (5)
-**Meeting with teachers to reflect on lessons and units?**	Low priority (1) to high priority (5)
-**Co-teaching with classroom teachers?**	Low priority (1) to high priority (5)
-**Observing teachers?**	Low priority (1) to high priority (5)
-**Teaching a demonstration lesson?**	Low priority (1) to high priority (5)
-**Working with students in small groups?**	Low priority (1) to high priority (5)
-**Assessing students?**	Low priority (1) to high priority (5)
-**Writing curriculum?**	Low priority (1) to high priority (5)
-**Meeting with administrators?**	Low priority (1) to high priority (5)
-**Working with student teachers?**	Low priority (1) to high priority (5)
-**Attending professional development?**	Low priority (1) to high priority (5)

-**Providing professional development?**	Low priority (1) to high priority (5)

Appendix Table 4 Additional Questions on Post-Intervention Survey

Question	Response
Did you watch the Powerpoint presentation about instructional coaching?	Yes, no
Did you review the job description for an instructional coach	Yes, no

Appendix B Interview Questions

Interview questions with instructional coaches:

1. How are you doing today?
2. Please describe your educational background.
3. You are serving as the _____ instructional coach. Can you walk me through how you came to be in this role?
4. What would you say are the most challenging aspects of your job?
5. Can you describe your experiences with working with teachers?
6. What has been successful?
7. What do you feel your priorities should be as an instructional coach?
8. In your survey response to _____, you responded _____, can you elaborate?

Interview questions with teachers:

1. Please describe your current role at the school.
2. Please tell me about your history at the school.
3. How often do you interact with the instructional coaches?
4. Can you describe the ways you interact with the instructional coaches?
5. What do you hope to get professionally from the instructional coach?
6. Do you feel your meetings are productive? Why or why not, in what ways?
7. What would make a meeting with an instructional coach feel productive?
8. To what extent does your work with an instructional coach support or influence your practice?
9. What do you feel are the priorities for the instructional coaches?
10. In your survey response to _____, you responded _____, can you elaborate?

Interview questions with administrators:

1. Please describe your current role at the school.
2. Please tell me about your history at the school.
3. Please describe your experiences of working with the school's instructional coaches.
4. Can you describe your expectations for the instructional coach?
5. Can you describe what you feel are the strengths of having instructional coaches? How about the strengths of the coaches at the school?
6. Can you describe the problems with instructional coaches? What do you feel are the problems facing the coaches at the school?
7. What should the priorities be for the instructional coaches?
8. In your survey response, you said _____, can you elaborate?

Appendix C Instructional Coaching Job Description

Position Title: Science Coach

Position Summary:
The instructional coach for science focuses on professional growth in area of science for K-8 teachers by pushing into the classroom setting and providing teachers with support and guidance needed to implement various research-based instructional programs and practices aligned with the school's vision and philosophy.

Essential Job Functions:
The essential function of the Science Coach is to coach K-8 teachers by building knowledge and skills related to effective science instruction. A core component of the work involves meeting with teachers to provide on-going support for professional growth. Coaching activities include but are not limited to:

- Support with planning units/lessons
- Coteaching and/or modeling science lessons
- Classroom visits/observations
- Leading, recommending, and connecting teachers to professional development in science education
- Resource recommendations
- Reviewing student work and assessments with teachers
- Other individualized instructional goals regarding science teaching

Additionally, the Science Coach is expected to work with the science curricular chairs to coordinate curriculum development, reflection, and refinement.

Supervisory Requirements:
N/A

Education/Experience Level Requirements:
Bachelor's degree in science education or a science field
Master's degree in science education, elementary education, or secondary education, or a science field

Licenses/Certifications:
PA instructional certification or equivalent
Adherence to requirements for Act 48 professional development hours

Knowledge, Skills, and Abilities:
Knowledge of science content and pedagogy
Knowledge of science standards: AAAS, NGSS, STEELSS
Desire to continue learning about science concepts, coaching strategies, and instructional strategies

Ability to effectively communicate with students, colleagues, and families
Ability to work collaboratively with others

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