

2020

Instructional Leadership Practices of Middle School Principals Regarding Specialized Training in Mathematics

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Walden University

College of Education

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Sherry A. Schock

has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
the review committee have been made.

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Walden University

2020

Abstract

Instructional Leadership Practices of Middle School Principals Regarding Specialized
Training in Mathematics

by

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EdS, Saginaw Valley State University, 2009

MA, Central Michigan University, 2003

MA, Central Michigan University, 1999

BS, Central Michigan University, 1992

Dissertation Submitted in Partial Fulfillment
of the Requirements for the Degree of
Doctor of Education

Walden University

November 2020

Abstract

The research problem addressed in this study centered on middle school principals who were inconsistently implementing instructional leadership practices to support teachers teaching mathematics even though they received middle-grades leadership development (MLD) training. The purpose of this basic qualitative research was to understand why middle school principals, trained in MLD, were inconsistently implementing instructional leadership practices to support teachers teaching mathematics. The research question asked how middle school principals, trained in MLD, implement instructional leadership practices to support teachers teaching mathematics to improve student academic outcomes. The conceptual framework was Vygotsky's learning and development theory used within MLD training to support school principals who, in turn, support mathematics teachers for students to construct new knowledge by making connections with their mathematical experiences. Semistructured interviews were conducted with 6 middle school principals to gather information about middle school principals' instructional leadership practices as they supported teachers teaching mathematics. A thematic analysis was conducted. The participants identified the importance of school leaders engaging in unique practices with middle school mathematics teachers including supporting mathematics teachers, building strong relationships, specific instructional practice in the mathematics classroom, and engaging in professional development. The findings have implications for positive social change by helping middle school principals to better apply instructional leadership practices to support teachers teaching mathematics to improve student academic outcomes.

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Dedication

I have been blessed by God to have a caring family. The work is dedicated to my parents Bob and Cindy who have always loved me and have taught me to chase my passion with love and hard work. The work is also dedicated to my children Meagan, Matthew and Armoni who have brought endless joy to my life. You each have spirit and independence that motivate me to be the best parent I can be. May you share my lifelong love for learning in whatever form that takes; advanced degrees, travel, or personal journeys. And to my sister Shelly, who teaches me how to have fun in life. I love you all! Thanks for loving me on this long and bumpy journey called life and through this degree.

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Chapter 1: Introduction to the Research

In this study, I examined how middle school principals, who were trained in the middle school concept in a training called middle grades leadership development (MLD), enacted the role of instructional leadership to support teachers teaching mathematics to improve student academic outcomes. The research problem was that middle school principals, trained in MLD, were inconsistently implementing instructional leadership practices to support teachers teaching mathematics, resulting in low scores on standardized tests in mathematics. The purpose of this basic qualitative research design was to understand why middle school principals, trained in MLD, were inconsistently implementing instructional leadership practices to support teachers teaching mathematics to improve student academic outcomes. In this chapter, I present background information and the research problem, and I explain the purpose of the research, identify the research question, and explain the conceptual framework. I explain the nature of the study, provide definitions, explain assumptions, and review the scope and delimitations, as well as the limitations of the study. I provide details regarding the significance of the study.

Background

The middle school years are pivotal to the long-term academic and social success of young adolescents. The middle school time period may be the last best chance to ensure that students are on target for graduation (Nash et al., 2014). Middle school principals have an understanding of the middle school concept and instructional leadership in schools where students thrive academically (Youngs et al., 2015). MLD is a 3-year training process for middle school principals and teacher leaders. Middle school

principals receive middle school training, coaching, and networking opportunities to improve student academic outcomes in all content areas. MLD training focuses on instructional leadership practices with special attention on the needs, characteristics, and programing specific to young adolescents.

In this study, I include a comprehensive literature review of the role of the middle school principal as the instructional leader and the need for specific training of middle school principals. Middle school principals support teachers teaching mathematics to influence student academic outcomes (Schaefer et al., 2016). Middle school principals support teachers to improve their teaching practice (Boston et al., 2017). Middle school principals engaged in MLD training that focused on instructional leadership and middle school practices (Flowers et al., 2018). A gap exists in middle school research pertaining to middle school principal instructional leadership practices and student achievement (Bickmore, 2016). There is a gap in the research that links specific middle school principal instructional leadership practices with student academic outcomes. It is unclear which instructional leadership strategies principals engage in that support teachers teaching mathematics to improve student academic outcomes. The findings from this research may inform middle school principals about how to enact instructional leadership practices to best support teachers teaching mathematics.

Problem Statement

The research problem was that middle school principals, trained in MLD, were inconsistently implementing instructional leadership practices that support teachers teaching mathematics resulting in little improvement in student academic outcomes on

standardized test. After 3 years of MLD training, only two schools exceeded the state average on state standardized mathematics assessments, leaving 10 of the 12 participating schools scoring below the state average (Flowers, Carpenter, & Begum, 2018). Middle school principals engaged in a variety of activities identified as instructional leadership including climate building, curriculum supervision, and teacher evaluation. VAL-ED principal effectiveness scores of all middle school principals trained in MLD indicated that the average scores ranked below distinguished for High Standards for Student Learning and Rigorous Curriculum in all areas including planning, implementing, supporting, advocating, communicating, and monitoring. In the areas of quality instruction, middle school principals were ranked as distinguished only in supporting and in culture of learning. And in professional behavior principals were ranked as distinguished only in implementing and supporting (Flowers et al, 2018).

The instructional leadership practices of middle school principals trained in MLD have not been examined to determine which instructional leadership practices they perceived to be most effective in supporting teachers teaching mathematics to improve student academic outcomes. A gap exists in middle school research pertaining to middle school principal instructional leadership practices and students' academic achievement (Bickmore, 2016). There is a gap in the research to specifically identify the instructional leadership practices middle school principals employ that support teachers teaching mathematics to improve student academic outcomes. Nationally, middle school students demonstrated little change in proficiency scores in mathematics from 2015 to 2017 (The Nation's Report Card, n.d.). Principal instructional leadership practices were paramount

to creating a positive learning environment (Bickmore, 2016). Instructional leadership practices were applied through a collaboration between the school principal and the teachers (Mertens, Caskey, & Flowers, 2016). A relationship exists between instructional leadership practices and student academic outcomes (Vogel, 2018). The principal's role in students' academic achievement is important (Sheng et al., 2017). The principal advocates for strong academic outcomes (Bickmore, 2016).

Middle school principals focus on creating a learning environment that is specific to the needs and characteristics of students ages 10 to 14 years (Brinegar, 2015). Young adolescents have academic needs that require specific school programming (Brinegar, 2015). Middle school programming requires principals and teachers to be engaged in specific learning experiences to deepen their understanding of the needs of young adolescents (State Department of Education, 2017).

The research site for this study was located in the midwestern United States. School leaders were required to have knowledge about the middle school concept (State Department of Education, 2017). Senior district administrators implemented a program called MLD training in 2013 for school principals to support teachers to help students to improve state standardized test scores (senior district administrator, personal communication, January 23, 2015). MLD training uniquely prepared administrators for middle school instructional leadership (superintendent of schools, personal communication, January 25, 2015). MLD training is mandatory for all middle school principals and was designed to improve principals' instructional leadership practices (school district office of accountability, personal communication, March 3, 2016).

Teachers and senior school administrators participated in surveys to generate information about the principals' instructional leadership practices. Principals were scored in instructional leadership subgroups (personal communication January 23, 2015). During the evaluation, senior administrators revealed that principals struggled to implement their instructional leadership practices in mathematics based on self-reflection of the principals and perceptions of teachers and supervisors (district associate superintendent, personal communication, January 23, 2015). At the research site, middle school principals, trained in MLD, were inconsistently implementing instructional leadership practices to support teachers teaching mathematics (superintendent of schools, personal communication, January 14, 2020). Middle school principals engage in a variety of activities that are labeled as instructional leadership. It is unclear which of the principal instructional leadership activities best supported teachers teaching mathematics to improve student academic outcomes, resulting in inconsistency of implementation of instructional practices.

Purpose of the Research

The purpose of this research, in which I used a basic qualitative research design, was to understand why middle school principals, trained in MLD, were inconsistently implementing instructional leadership practices to support teachers teaching mathematics. The school principal held responsibility for applying instructional leadership practices for students' academic performance (Allensworth & Hart, 2018). A need existed to understand the relationship between principal's instructional leadership practices and students' academic performance (Bickmore, 2016; Mertens et al., 2016). Instructional

leadership practices contributed to student academic performance (Allensworth & Hart, 2018). According to Bickmore (2016), it is the relationship between principals training and student outcomes that determined how to best to prepare middle grades principals.

Research Question

Middle school principals use knowledge of the middle school concept to effectively shape the culture of the school (National Middle School Association [NMSA], 2010). Principals serve as the instructional leaders of the school building (Nash et al., 2014). Principals use pedagogical knowledge of mathematics to effectively support teachers teaching mathematics (Katterfeld, 2014). Middle school principals learn about instructional leadership and middle school concept in the MLD training to support teachers teaching mathematics (Flowers et al., 2018). The research question that guided this research was:

How did middle school principals, trained in MLD, implement instructional leadership practices to support teaching mathematics to improve student academic outcomes?

Conceptual Framework

The conceptual framework for this research was Vygotsky's learning and development theory used within the implementation of MLD training program to support middle school principals who, in turn, support mathematics teachers for students to construct new knowledge by making connections with their mathematical experiences. Vygotsky's posited, in his theory known as the zone of proximal development (ZPD), that individuals learn through experiential learning in collaboration with an expert (Eun,

2019). Vygotsky theorized that human interactions are vital to new learning. While individuals worked together, they engage in assistance, collaboration, and mediation, which are the precursors to internalizing the learning and using the new knowledge independently (Eun, 2019).

MLD trainers established a collaborative structure, which established collaborative learning between middle school principals and mathematics teachers under the expert support of the MLD project team. Vygotsky's learning and development theory applied to the interactions between (a) the principal and the professional development provider, (b) the principal and the teachers, and (c) the teachers and the students. The learning and development theory is a foundational component of MLD training. I applied ZPD to create the interview questions to understand middle school principals and how they applied instructional leadership practices to support teacher teaching mathematics to improve student academic outcomes. I conducted a data analysis using the ZPD theory as a guide to understand the relationship between middle school principal instructional leadership and student academic outcomes. I present a comprehensive description of ZPD and its application to this research in Chapter 2.

Nature of the Research

I used a basic qualitative research design to understand how middle school principals apply instructional leadership practices to support teachers teaching mathematics to improve student academic outcomes. Middle school students demonstrated little change in mathematics proficiency scores between 2015 and 2017 on the National Assessment of Educational Progress (NAEP) (The Nation's Report Card,

n.d.). Further, students who worked in pairs everyday scored higher on the NAEP in mathematics than those who did not (The Nation's Report Card, n.d.). The setting of the project site consists of 33 middle schools.

I used semistructured interviews to gather information about the instructional practices of middle school principals who engaged in the MLD training. Semistructured interviews allow for guided questions and flexibility to dive deeply into the topic (Rubin & Rubin, 2012). In semistructured interviews, the researcher asks open-ended questions that provide opportunities for the respondents to respond in ways that are authentic to them (Brown & Danaher, 2019). Semistructured interviews allowed for the interview to occur in varied format including face to face, telephone, and online (Brown & Danaher, 2019). In this study, I extracted reliable and comparable data from semistructured interviews (Brown & Danaher, 2019).

I studied the phenomenon of the relationship between middle school principal instructional leadership practices and student academic outcomes. The middle school principals eligible for participation work in schools that had similar demographics and achievement state scores. The research included middle school principals in schools in two states with free-and-reduced-price lunch rates of 40% or greater. The population was 33 middle school principals. The sample included six middle school principals. I used purposeful sampling to identify middle school principals who were state certified, in the role of principal, for at least 2 years, and had completed MLD. I informed each potential participant of their rights as human subjects. I interviewed middle school principals who signed informed consent forms. I developed an interview protocol, and I conducted the

interviews with each participant. Each interview was approximately 1 hour and was conducted virtually using Zoom due to COVID-19. I used thematic coding to analyze the qualitative data.

Definitions of Key Terms

Key definitions that needed clarity for this research were as follows:

Instructional leadership practices of middle school principals: Instructional leadership takes a comprehensive approach to leadership responsibility of the school building. *Instructional leadership* is defined as the influence the school leader has on academic outcomes (Urlick, 2016). Specifically, and for this research, instructional leadership required the principal to focus on the improvement of instruction through observation, data use, and professional learning as well as establishing a climate suitable for learning (U.S. Department of Education [USDOE], 2019). The definition of *middle school* was important in this research because it is both the location where the principals practice their work and the concepts that are required to be understood to be an effective middle school leader. *Middle schools* are defined as school buildings that educate young adolescent students between the ages of 10 and 14 years (Teague et al., 2012). Middle school principals employ developmentally appropriate practices, such as ensuring a deep understanding of the needs and characteristics of young adolescents, in-school decision making, teaming, and curriculum discussions (Schaefer et al., 2016).

MLD-specialized training in mathematics: MLD-specialized training in mathematics is defined as the training provided to middle school principals in the form of

seminars, coaching, and networking called MLD. The MLD topics are central to the middle school concept (Flowers et al., 2018).

Middle school concept: The middle school concept is the idea that schools that serve student ages 10 to 14 years should provide specialized environments and programs that best meet the needs of this age group of students. The ideal of middle school concept included educators who are specifically trained to work in the middle school along with integrated curriculum, engaging instruction, and cooperative learning. Middle schools should be developmentally appropriate, challenging, equitable, and empowering (NMSA, 2010).

Zone of Proximal Development (ZPD): The zone of proximal development is a theory developed by Vygotsky that describes the way in which individuals learn and develop as humans. Learning requires two people to engage in a social construct in which a more knowledgeable person coached a less knowledgeable person to new understanding (Murphy et al., 2015).

Assumptions

I assumed that the sixth-grade curriculum at one school district was similar in content, scope, and rigor as another school district. This assumption was validated because the school districts are located in two mid-west states and the school districts within the state's share the same state standards. I also assumed that the middle school principals supported teachers of mathematics by implementing the skills and knowledge obtained through the MLD training. Another assumption was that the principals possessed the state required qualifications to serve as school administrators. The

assumption was validated through MLD documents that indicated the principal's level of qualifications (Flowers et al., 2018). I assumed that middle school principals responded honestly and truthfully. I also assumed that the sample is large enough to reach data saturation. Finally, I assumed the principals participating in the interviews were representative of the larger population engaged in the MLD project and that the findings apply to other school districts.

Scope and Delimitations

The scope of the project was middle schools located in school districts that participated in the MLD project in two midwestern states. Middle school principals, trained in MLD and who supported teachers teaching mathematics, were the focus in my study because middle school students have low mathematics proficiency scores. The population was 33 middle school principals. I selected middle school principal participants to participate in this research due to the instructional leadership practices and middle school training they experienced in the MLD seminar. Middle school principals who engaged in the research participated in the MLD project and received knowledge about instructional leadership practices and middle school practices. Participation in the MLD training was limited to two midwestern states. Middle school principals who participated in the research possess an administrator license in their respective state.

Delimitations included the fact that only middle school principals who have participated in the MLD training are eligible participants in the research. I did not interview teachers, parents, and students to determine how middle school principals are

supporting teachers teaching mathematics. Other delimitations included the inability to guarantee transferability and confirmability of the findings.

Limitations

The research has limitations that must be considered. One such limitation is the size of the sample. The research was limited to middle school principals who engaged in the MLD project limiting the sample size to six. A small sample limited transferability and dependability. Limits to transferability and dependability limited the generalizability of the findings. I mitigated the sample size limitation through rich description. A second limitation was that middle school principals self-reported during the interview process. Self-reporting produced perception data. The quality of the potential responses is a potential limitation. I monitored and mitigated the quality of the responses by in depth questioning during the interview. I recognized the limitations and minimized the generalizations.

As a novice researcher, I possessed potential researcher bias. The personal bias may have arisen in the interviewing process or in the analysis process. To avoid potential researcher bias, I practiced interviewing with family members prior to conducting the data collection interviews. I reported my thematic coding processes to the research committee. I used member checking to have middle school principal participants verify the data for accuracy.

Significance

The findings provided an original contribution about the middle school instructional leadership practices to support teachers teaching mathematics to improve

student academic outcomes. University researchers and professors may use the findings to inform leadership development programming while specifically planning to prepare principals to serve middle schools. The findings from this research may inform policy makers and school district superintendents, principals, and teachers to address specific needs of middle school principals through required MLD training in instructional leadership practices and the middle school concept. District leaders may use the findings to support middle school principals with the application of instructional leadership practices to support teachers teaching mathematics. The findings indicate the importance of school leaders having an understanding of the practices associated with middle school teachers who teach mathematics. Middle school leaders may have a better understanding of how to apply instructional leadership practices to support teachers who teach mathematics.

The findings have significant implications in the area of social change. The needs and characteristics of young adolescents are often not addressed due to lack of knowledge and understanding of the educators who serve them. Middle school students lack access to educators specifically trained to meet their unique learning needs (Mertens et al., 2016). The research has the potential to raise the collective understanding of middle school principals of the vital importance of applying instructional leadership practices to support teachers teaching mathematics and potentially have a positive influence on student academic outcomes so they are better prepared to meet future academic challenges in high school, college, or the workplace.

Summary

In this study, I examined why middle school principals, trained in MLD, were inconsistently implementing instructional leadership practices to support teachers teaching mathematics. The purpose of this basic qualitative research design was to understand why middle school principals, trained in MLD, were inconsistently implementing instructional leadership practices to support teachers teaching mathematics. Vygotsky's learning and development theory served as a conceptual framework for this research, and I used the theory within the implementation of MLD training to support school principals, who, in turn, support mathematics teachers in order for students to construct new knowledge by making connections with their mathematical experiences. The nature of the research was a basic qualitative research design. In Chapter 1, I provided definitions for key terms such as *instructional leadership practices of middle school principals*, *MLD specialized training in mathematics*, *Middle school concept*, and *ZPD*. I identified assumptions about participating schools. I also presented the scope of the project. I then identified delimitations and limitations. I also explained the significance of the research.

I conducted a comprehensive literature review to explore current practices in instructional leadership in middle schools. The instructional leadership responsibilities of the middle school principal focused on enacting the mission of the school by building a positive school climate. The middle school principal influenced student academic outcomes indirectly by supporting the teachers and directly by meeting with parents and

students. Middle school principals need middle school specific knowledge to support teachers.

I collected data using semistructured interviews. The findings of this study indicate the importance of school leaders having an understanding of the unique practices associated with middle school teachers who teach mathematics. The findings have significant implications in the area of social change by helping middle school principals to better apply instructional leadership practices to support teachers teaching mathematics. In Chapter 2, I present the literature review.

Chapter 2: Literature Review

The research problem that I addressed in this study was that middle school principals, trained in MLD, were inconsistently implementing instructional leadership practices to support teachers teaching mathematics. The inconsistencies were identified through self-reporting of the principals and the perceptions of teachers and superintendent. The purpose of this basic qualitative research design was to understand why middle school principals, trained in MLD, were inconsistently implementing instructional leadership practices to support teachers teaching mathematics.

Current literature relevant to the research on school leadership theories indicated that principals use a leadership style to enact principal responsibilities as instructional leaders (Allen et al., 2015). Middle school programming, practices, preparation, and research are important elements for middle school principals to consider when focusing on student academic outcomes (NMSA, 2010). The comprehensive literature review revealed a connection between the work of middle school principals as the instructional leaders of the school building and student academic outcomes. Principals who served as instructional leaders by focusing on school climate and culture and job satisfaction have a positive influence on student academic outcomes (Allen et al., 2015). There is a gap in the literature to explain the lack of improvement of student academic outcomes despite middle school principal engagement in MLD training.

Chapter 2 includes details of the literature search strategy, the conceptual framework, and a presentation of the literature review, which includes subtopics of principal as the instructional leader, leadership styles, principal as the leader, principal

dual effects on student academic outcomes, principal-teacher interactions and the impact on student academic outcomes, understanding young adolescents and the middle school concept, middle school instructional engagement to improve student academic outcomes, middle school climate and culture to create a developmentally appropriate school, teacher supervision and creating a middle school culture, and middle school mathematics leadership and instruction.

Literature Search Strategy

A comprehensive literature review required the use of library databases, search engines, and key terms that support the research. The primary research tool that I used was the library at Walden University with Google Scholar serving as a secondary research tool. Databases included both EBSCO and ERIC. Initial key term searches including *middle school developmental responsiveness* and *middle school social equity* yielded outdated articles. The key terms searches needed to be refined to include *middle-grades, middle school, instructional leadership, and principal leadership, young adolescent characteristics, young adolescent learning needs, middle school principals, principal professional development, and principal support for teachers*. Additional key terms included *young adolescents, middle school student engagement, middle school student engagement, principals instructional support, and principal instruction mathematics*. Key terms associated with the conceptual framework included *Vygotsky, zone of proximal development (ZPD)* and *learning and development theory*.

Conceptual Framework

I conducted a comprehensive literature review of Vygotsky and the theory of the ZPD. The literature defined ZPD, explained the connection between learning and development, and expanded the application of ZPD to children and adults. I explain through the literature how ZPD is pertinent to this research, including the development of the interview protocol.

The ZPD is the distance between an individual's performance unassisted and the performance that can be obtained through assistance by someone who is more skilled and knowledgeable about a topic (Eun, 2019). In this definition, learning occurs in a social context (Esteban-Guitart, 2018; Levykh, 2008). The ZPD theory posits that learning is a two-person process that occurs with time (Murphy et al., 2015). The two-person process assumes that the teacher is more knowledgeable and the student is less knowledgeable. The teacher is charged with doing several things to assist the student to create new meaning. The teacher needs to understand that learning is individualized and learning starts at the individual student's readiness level (Levykh, 2008). The teacher needs to provide scaffolded opportunities for students to move from one point in the zone to the other (Valderama et al., 2018; Walshaw, 2017).

Vygotsky's theory indicates that there is a symbiotic connection between cognition and emotion (Levykh, 2008). The two elements of the psyche cannot be separated if learning and development are to occur. The collaborative context of the relationship between the student and the teacher affects the learning and development of the student (Levykh, 2008). Vygotsky theorized that educators need to understand the

importance of relationship building with those they teach, and they need to recognize the importance of establishing a culture of high expectations for learning. The symbiotic relationships between the teacher and the student presents guidelines for instructional practice that served as a basis for this research.

Vygotsky used his writing to explain the connection between learning and development. Vygotsky believed and presented in the ZPD theory that learning and development occur in a social context (Eun, 2019; Levykh, 2008). The connection between learning and development creates a symbiotic relationship between self and the social context (Eun, 2019). Vygotsky's examples demonstrate that learning and development occur in a cyclical nature rather than in a linear fashion. Responsibility falls on the teacher to use cultural tools such as gestures, observational protocols, language, and emotions, all elements of culture to mediate the thinking of the student (Abtahi, 2018; Levykh, 2008). The outcome results in a new understanding for the student that permeates every old personal system and ultimately changes how the student behaves personally and engages culturally (Levykh, 2008). Learning and development are connected through this process. ZPD reveals that learning occurs, then human development progresses, whereby teaching leads development (Guseva & Solomonovich, 2017; Levykh, 2008).

The development of the interview protocol reflects components of the ZPD theory. The middle school principal, trained in MLD, as the instructional leader was considered the more knowledgeable person, whereas the teacher the less knowledgeable. I used the interview questions to ask middle school principals what actions or tasks they

took to specifically change instructional practices of teachers of mathematics. As the middle school principal participants responded to the questions, middle school principal participants were asked to consider how the social context effected the learning and development of the teacher teaching mathematics. Middle school principal participants were asked to consider how their influence effected the teacher to influence the students.

I examined the practice of principals as they related to student academic outcomes. The theory applied to (a) the principal and the professional development provider, (b) the principal and the teachers, and (c) the teachers and the students. The more knowledgeable person in the collaborative environment must possess professional agility to meet the learner at their individual readiness level (Drake, 2017). The more knowledgeable person moved the student through the ZPD by (a) understanding the readiness level, (b) promoting mindfulness in the student, and (c) observing the application of the new understanding (Drake, 2017). Much of the research applied to child development. However, the ZPD can be applied to individual development at any level (Drake, 2017; Eun, 2019; Wass & Golding, 2014). In this study, I examined the relationship between the principal and the teacher.

Literature Review Related to Key Concepts

Principal as the Instructional Leader

I used the literature review to understand the connections between middle school principals and student academic outcomes. Student academic outcomes are a priority of any school. During the past decade, there has been an increase in research that links principal leadership styles and practices to student academic outcomes. I used the

literature to describe how middle school principals affected student academic outcomes through their enacted leadership style, their enacted responsibilities, their influence on school climate, and their interactions with teachers and with students. Federal legislations such as The No Child Left Behind Act of 2001 and The Every Child Succeeds Act of 2015 requires schools to demonstrate academic improvement on standardized assessments (Grissom et al., 2015). The passing of such legislation that mandates high stakes testing has created urgency to deepen understanding of the connection between the middle school principal as the instructional leader, the middle school principals' influence on teacher and student academic outcomes. Researchers have explored the elements that linked these variables but have not explored the specific instructional leadership practices conducted by principals that influence mathematics teachers and lead to improvements in student academic outcomes.

Leadership Styles

In an attempt to deepen understanding of instructional leadership practices, I researched the topic of leadership style. Principals practice school leadership in multiple ways that reflect various leadership theories (Allen et al., 2015). Principals use different approaches as they enact duties associated with operations (Allen et al., 2015). Transactional leadership and transformational leadership are two theories in current research discussions of the relationship between principal leadership and student academic outcomes.

Transactional leadership focuses on the exchange of things that are of value (Allen et al., 2015). Transactional leadership represents a top-down approach to

management (Dutta & Sahney, 2016). Principals are directive when they use the transactional model of leadership (Allen et al., 2015). Principals using a transactional leadership style pay detailed attention to operational issues such as schedules, procedures, and materials allocation (Allen et al., 2015). Transactional leaders focus on the operations of the school.

Transformational leadership, or bottom-up leadership, is nearly opposite of transactional leadership (Dutta & Sahney, 2016). Transformational leadership is also referred to as *distributed leadership* in the literature (Karadağ et al., 2015).

Transformational leaders focus on the people in the school building to effectively manage the school (Karadağ et al., 2015). Transformational leadership characterizes leadership as a reward system, whereby principals recognize and award teachers who do as the principal desires (Urlick, 2016).

Early research about transformational leadership has characterized transformational leaders as charismatic and inspirational (Sebastian, Allensworth, Wiedermann, Hochbein, & Cunningham, 2019). Allen et al. (2015) described transformational leaders as those who motivate others to perform. Principals who enact transformational leadership value an individual's abilities and potential skills (Allen et al., 2015). The use of transformational leadership by principals affects teachers' willingness to change. Leaders who use transformational leadership invest in collaboration among teachers and students and encourage participation from teachers, students, and parents.

Researchers indicated that transformational leadership affects student academic outcomes (Karadağ et al., 2015). Transformational leaders build positive relationships with all teachers, students, and parents. Principals who use transformational leadership seek input from teachers, students, and parents (Sebastian et al., 2019).

Transactional and transformational leadership styles are not mutually exclusive (Dutta & Sahney, 2016). Allen et al. (2015) noted no significant findings in their study linking transformational leadership and student academic outcomes. A balance between transactional and transformational affects student academic outcomes (Dutta & Sahney, 2016). Strong principals use skills of leadership and management to enact the mission of the school (McGuinness, 2009). Successful school leaders possess an array of attributes (Dutta & Sahney, 2016). The examination of leadership style was a central element of the research and applied directly to the research question.

Principal as the Leader

Transactional and transformational leadership, in the aforementioned literature, represented two approaches to school leadership (Allen et al., 2015). Principals approach responsibilities based on their leadership style, transactional, transformational, or a blend of the two (Allen et al., 2015). Principal's responsibilities are defined by researchers in order to deepen the knowledge base about how principals effected academic outcomes in the buildings they served (Sebastian, Allensworth, & Huang, 2016). One such responsibility is that of serving as the instructional leader of the building (Sebastian et al., 2016). Instructional leadership is defined as including the responsibilities within the school building to set goals and set the mission, encourage trust, and build collaboration

among the teachers (Tan, 2018). Principals focus on: (a) the schools mission, (b) the curriculum, and (c) systematic data driven feedback (Vogel, 2018). According to Bastian and Henry (2015), principals were responsible for five broad domains including: instructional management, organizational management, internal relations, external relations and administrative duties. Dutta and Sahney (2016) presented these responsibilities as principal attributes which include focusing on the academic mission and vision, goal setting, and promoting professional development. Allen et al. (2015) defined the responsibilities of the principal as building motivation, developing goals and a vision. According to my findings in the literature review, principals provide opportunities to set goals and then guided the teachers and students toward fulfilling the mission as part of the principal's instructional leadership responsibilities.

Principals are trained in the area of instructional leadership. Professional development for principals focuses on five areas of competency including direction, powerful organization, data, student-driven vision and action, and a focus on learning (Nash et al., 2014). The areas identified for learning are the areas of required expertise for a principal to be a successful instructional leader (Nash et al., 2014). The definition of instructional leadership in the reviewed studies identify common elements including aligning the school's vision and mission, aligning school programs and practices, and maintaining a focus on academics (Nash et al., 2014). Elements of instructional leadership are important descriptions of school culture which is identified as pivotal to student academic success (Dutta & Sahney, 2016). The principals leadership style,

transactional, transformational, or a combination of both, influences how the principal approached the responsibility of instructional leadership (Nash et al., 2014).

Principals confidently lead the school toward a shared vision. Kalman and Arslan (2016) indicated that principals' perceptions of their instructional leadership practices were often misaligned with best practices. Versland and Erickson (2017) identified that the principal's level of confidence effected the teachers in the school and ultimately the instructional focus of the building. The individual and collective efficacy of the stakeholders in the school effects student academic outcomes. The responsibility of the principal to serve as the instructional leader is demonstrated through their leadership of the development of the schools' vision, mission, and goals. The application of strategies which support the school in obtaining the schools vision, mission and goals is also a central responsibility of the principal as the instructional leader.

Effects of School Climate

A primary responsibility of the principal as the instructional leader of the building is to create a positive and safe school environment (Dutta & Sahney, 2016). The environment is called the school climate. School climate refers to the interactions of the principal, the teachers, and the students in a positive or negative manner.

School climate is defined in many of the studies as the affective environment of the adults in the school or overall job satisfaction. The affective and physical environment are considered when examining the school climate (Dutta & Sahney, 2016). Job satisfaction is defined as the favorable or unfavorable feelings held by teachers about their work (Dutta & Sahney, 2016). Teachers who have a positive job satisfaction yield

higher academic outcomes. Teachers with lower job satisfaction yield lower academic results (Dutta & Sahney, 2016). A positive school climate, as defined by job satisfaction, is the responsibility of the principal and yields positive student academic outcomes.

Teachers have a mediating effect on student academic outcomes based on teacher job satisfaction and teacher perceptions of school climate (Dutta & Sahney, 2016). Principals, when enacting instructional leadership responsibilities, have a direct influence on school climate and job satisfaction (Allen et al., 2015). The most effective way for the principal to positively effect student academic outcomes is to empower teachers and to engage teachers in developing policies that influenced school climate (Sebastian et al., 2016). When teachers engage in school reform, change occurs (Sebastian et al., 2016). When teachers are not engaged in school reform, it does not occur (Sebastian et al., 2016). School climate is linked to organizational factors such as class size and teaching conditions (Dutta & Sahney, 2016). Collaboration and engagement increase teacher job satisfaction and improve school climate which is linked to positive student academic outcomes.

Principal Dual Effect on Student Academic Outcomes

Understanding how principals directly and indirectly effect student academic outcomes is difficult. Sebastian et al. (2016) identified the dual effect of the principal, affecting student outcomes indirectly by supporting the teacher and affecting student outcomes directly by working with students and families. As stated in the aforementioned literature, principals who blended two styles of leadership, transactional and transformational had the best effect (Dutta & Sahney, 2016). Leaders who combine

transactional and transformational leadership use two simultaneous pathways to effect student academic outcomes (Dutta & Sahney, 2016). Principal leadership indirectly effects school climate, which increases teacher job satisfaction. The teachers with high levels of job satisfaction mediate student academic outcomes (Dutta & Sahney, 2016). The pathway of principal to teacher to student represents the indirect influence of principals on student academic outcomes (Dutta & Sahney, 2016). The principal's indirect influence on the school climate and thereby teacher job satisfaction has an influence on student academic outcomes.

Combined with the responsibility of creating positive school climate is the responsibility of the school leader to engage in the academic work of the school such as leading data conversations, and engaging parents (Sebastian et al., 2016). When principals lead data conversations and engage parents, principals had a direct influence on student academic outcomes (Sebastian et al., 2016). I address the task of leading data reviews as a task of the school principal. According to Sebastian et al. (2016), the dual approach of influencing the climate and interacting directly with parents and students connected principal instructional practices to student academic outcomes. School principals had both direct and indirect influence on student academic outcomes.

Principal-Teacher Interactions and the Effect on Student Academic Outcomes

Scholars indicate a relationship between principal leadership and student academic outcomes. The relationship between principal leadership and student academic outcomes requires consideration of the influence of teachers on student learning (Grissom et al., 2015). Research clarifies the connection between teacher practice and student

academic outcomes. Researchers examined in this literature review, focused on what was known about the relationship between the principal and the teacher.

The relationship between the principal and teachers is an important factor (Dutta & Sahney, 2016). A gap in the literature exists concerning the relationship between the principal and teachers (Dutta & Sahney, 2016). The principal moves from generally creating a positive school climate and increasing job satisfaction to having a specific and positive influence on student academic outcomes by performing specific tasks, such as leading data conversations and meeting with parents (Olsen & Huang, 2019).

Principals demonstrate life-long learning skills. Teachers want to be appreciated and recognized. When principals engage in activities that appreciate and recognize teachers, then principals build positive relationships with teachers (Olsen & Huang, 2019). When principals establish the expectation for and support of professional development for teachers, then principals improve teachers' job satisfaction (Olsen & Huang, 2019). Principals are responsible for establishing the professional development plan for the teachers in the school (Reeves, 2009). Professional learning experiences are strongest when they are, co-constructed, on-going, and job embedded (Dewitt, 2017). Providing teachers with training in the classroom is the best support (Reeves, 2009). These findings compliment the idea that change, in the form of student academic outcomes, happens in a school when teachers are engaged in the decision-making process.

Teachers value a school culture that is collaborative and holds high expectations (Olsen & Huang, 2019). When principals create a culture that values learning, create a

solid teaching environment and provide operational structures, job satisfaction increases (Olsen & Huang, 2019). Teachers value the opportunity to have voice, or to co-construct meaning in the schools they serve (Dewitt, 2017).

School climate is prevalent throughout the literature as the responsibility of the principal and an element of improving student academic outcomes (Dutta & Sahney, 2016). Researchers indicate that trust is a significant factor in influencing the culture of a school. The level of trust between the principal and teacher increases when principals and teachers engage in scheduled and unscheduled conversations (Hallam et al., 2015). Principals are recognized as the stakeholder most able to affect the level of trust in a school building (Hallam et al., 2015). Teacher perceptions also effect the level of trust in a school building. The teacher's perceived level of confidence, the teachers' view of leadership and the teachers' perception of professionalism all influence the level of trust in a building and all are mediated by the principal (Hallam et al., 2015).

The level of emotional support the principal provides teachers is a component of a school climate. Berkovich and Eyal (2018) indicated that when principals provided high levels of emotional support to teachers, teacher burnout was reduced. Successful principals support teachers which increases teacher confidence and reduces or eliminates teacher stress (Berkovich & Eyal, 2018). Principals provide emotional support through three specific strategies (Berkovich & Eyal, 2018). The strategies are empathic listening, or active listening, supporting teacher's belief that they are listened to, and the belief that their voices matter (Berkovich & Eyal, 2018). Supportive principals use empowerment messaging to build teachers' beliefs in themselves and improve efficacy (Berkovich &

Eyal, 2018). Principals use messages to help teachers reframe extenuating circumstances as shared and normal experiences (Berkovich & Eyal, 2018). The ability to provide positive emotional support is an important skill of the principal focused on building positive relationships with teachers, thereby effecting student academic outcomes.

Principals in schools with strong student academic outcomes foster recognition and appreciation among the staff at the school (Olsen & Huang, 2019). Principals recognize teacher success and commitment to students (Olsen & Huang, 2019). Principals leading schools with strong student academic outcomes acknowledge the hard work and professionalism of the teachers (Sowell, 2018). Recognition and acknowledgment increase teacher efficacy or belief in teachers' abilities to make a difference in the lives of the students they serve which is important to teachers' abilities to mediate student academic outcomes.

A culture of learning is an element of schools with strong student academic outcomes. The principal holds the responsibility to establish expectations which creates a culture of learning. Professional development participation is a characteristic of principals in schools with a focus on learning. Principals provide support for teachers who value personal growth (Olsen & Huang, 2019). Collaborative professional learning opportunities curated by the principal demonstrate a commitment to a culture of learning (Silva et al., 2017; Sowell, 2018). Principals knowledgeable about adult learning focus on improving teacher professional development to create a culture of learning in a school building. Principals engage in professional development about curriculum, adult learning theories, alignment of building goals to district goals, school culture and climate, and in

networking opportunities with other principals (Kooncen et al., 2019). When principals engage in the structuring of the learning activities, they are better equipped to shape teacher professional learning.

The principal is responsible for fulfilling the mission of the school to successfully educate students. Principals set expectations of achievement in the school to influence student academic outcomes (Olsen & Huang, 2019). Classroom visits and data analysis are two tasks in which principals in schools with strong student academic outcomes engage (Sowell, 2018).

Classroom visits provide principals with the opportunity to see how teachers engage in the act of teaching, which is the principals' responsibility as an instructional leader to support teachers teaching mathematics (Dewitt, 2017). Visiting classrooms on a consistent basis allows principals to observe instruction and provide meaningful feedback to teachers by which teachers improve instruction (Sowell, 2018; Whitaker et al., 2019). Classroom visits allow the principal to be visible to the teachers and students which influences the school culture and ultimately the student academic outcomes (Sowell, 2018). Through feedback, principals use what was observed during classroom visits to assist teachers in the development of rigorous instructional practices to influence student academic outcomes (Boston et al., 2017). Principals possess skills to identify high- and low-quality instruction within the core academic subjects to provide effective feedback which facilitated the development of rigorous instructional practices to provide support for teachers teaching mathematics (Boston et al., 2017). Principals in schools with high student academic outcomes communicate expectations that instruction be rigorous to

improve student academic outcomes (Boston et al., 2017). Principals monitor the level of rigor through classroom visits (Boston et al., 2017).

School principals demonstrate strong data analysis processes in schools with high student academic outcomes. Dewitt (2017) reported that strong principals engaged teachers in data conversations that examined instruction to determine what worked and what did not work. Principals help teachers analyze data and use the analysis to influence and change instruction (Sowell, 2018). Principals model data use and analysis at the school level. Principals train and support teachers to use data at the classroom level. The findings from the analysis allow teachers to mediate student academic outcomes.

I examined the literature about the principal as an instructional leader. The researchers describe common themes in that the principal has a direct and an indirect influence on student academic outcomes by creating a safe learning environment, a positive school climate and a focus on job satisfaction for teachers. Researchers use various methodologies to conduct studies many of them utilizing quantitative research methodologies to identify the connection between principal leadership and student academic outcomes. Weaknesses in the studies include methodology bias as a large number of the studies are correlational. Self-reporting of principals also presents a weakness of the several studies. Resoundingly, throughout the studies, the mitigating effects of teachers is recognized in the findings. Thereby it is important to conduct research which examines the variable of middle school principals' instructional practices as a means to better understand how middle school principals support teachers teaching mathematics to improve student academic outcomes.

Understanding Young Adolescents and the Middle School Concept

Young adolescents, children ages 10 to 14, experience developmental challenges that are often overlooked in the professional preparation of school principals. These challenges may influence the students' abilities to learn. Young adolescents experience rapid and drastic changes during the ages of 10 to 14, more than in any other time of their lives (Robinson, 2017). Young adolescents experience changes in their brain which significantly impact their response to their environment (Robinson, 2017). Young adolescents respond emotionally to their peers, family, and environment (Robinson, 2017). Children in this age group experience rapid changes in hormones, patterns of thinking, physical growth and self-awareness (NMSA, 2010). Young adolescents experience significant changes in their brain function (Robinson, 2017). Middle school students have significant shifts in their self-concept which has the potential to influence their learning (Onetti et al., 2019). Middle school students need to experience learning that is meaningful and appropriate for their age level (Cook et al., 2016).

The middle school concept is a philosophical approach to educating young adolescents that is embraced by researchers, teachers, school leaders, and young adolescent advocates (NMSA, 2010). Providing students in this age group with traditional elementary or secondary education does not meet the challenges brought on by the rapid growth (NMSA, 2010). A history exists of researchers calling for a student-centered approach to educating young adolescents (Teague et al., 2012). Middle school principals need to create middle school programs which meet young adolescent needs and provide supportive learning environments for young adolescents (NMSA, 2010).

Advocates of the middle school concept seek schools that are challenging, empowering, and equitable for all students (Sowell, 2018).

Middle School principals who wish to meet the needs of young adolescents create learning environments that use the middle school concept, which includes practices such as teaming, block scheduling, advising, high levels of student engagement, and interdisciplinary curricula (Schaefer et al., 2016). Middle school principals understand that middle school teachers shift from content focused instruction to interdisciplinary instruction (Robinson, 2017). Principals in successful middle schools provide students with voice or the opportunity to co-create their learning experiences (Vizenor & Matuska, 2018).

Principals and teachers in middle schools with strong learning environments provide students with developmentally responsive experiences, challenging curriculum that empower the student to have a voice in their learning, and provide equitable access to learning experiences for all students (NMSA, 2010). Principals and teachers in successful middle school environments include interdisciplinary instruction and enrichment through the arts (Robinson, 2017). Middle school principals and teachers pay attention to competition, providing healthy experiences (Robinson, 2017). Unhealthy competition in middle schools has an adverse effect on middle school student collaboration (Huyder et al., 2017). Young adolescent learning is adversely affected by peer conflicts and aggression (Huyder et al., 2017). Successful middle school principals and teachers provide service-learning opportunities and specific training in social emotional skills (Robinson, 2017). Clear expectations exist about how middle school principals and

teachers use the middle school concept to create high quality learning environments for young adolescents.

Middle School Professional Learning to Address Needs of Young Adolescents

Middle school principals who serve young adolescents, are specifically trained in the needs and characteristics of young adolescents and of the components of the middle school concept (NMSA, 2010). Middle school principals who earn a middle school certification are more likely to implement practices associated with the middle school concept in middle schools (Flowers, Mertens, & Mulhall, 2007). Further, long-term use of the middle school concept has a positive effect on student academic outcomes as defined by higher reading and mathematics achievement scores (Flowers et al., 2007). Middle school principals are knowledgeable about the age group, research, and middle school best practices (NMSA, 2010). Brinegar (2015) identified a gap in the literature as only 4% of all middle grades research articles focused on middle school leadership.

Traditional educator preparation programs prepare educators to serve in elementary schools or high schools (NMSA, 2010). Middle school advocates foster a philosophy that educators, principals and teachers, who work in middle schools need to be prepared to provide quality instruction and programming specific to young adolescents (NMSA, 2010). Middle school principals who lead middle schools need to be experts in relationship building with 10 to 14-year-old students to create an appropriate climate and culture in a middle school and instructional engagement for middle school students.

When middle school principals engage in professional development processes the climate and culture of teaching and learning is positively influenced (Koonce et al.,

2019). Through the literature review I established that school climate influenced student academic outcomes and the principal was the lead influencer of school climate. One way the principal influences school climate is through engagement in professional development.

Professional development opportunities that support the development of instructional leadership skills and teach the elements of the middle school concept use common professional development practices. Principals learn from observing the experiences of others (Aas & Paulsen, 2019). Aas and Paulsen (2019) reported that principals who first observed other leaders, then engaged in dialogue with peers and finally, applied the observations to their own unique context were able to apply the learning in the school building. According to Gumus (2019), mentorship was a critical support for middle school principals. Mentorship provides a systematic way for principals to share common experiences allowing new principals to learn from more experienced principals (Gumus, 2019). Mentors indicate that they assist mentees in building positive relationships with teachers and creating a collaborative environment (Gumus, 2019). Building relationships with teachers and creating collaborative environments are both factors in creating a positive school climate as mentioned previously. Collaborative inquiry is used by middle level leaders to increase skills and knowledge (LaPointe-McEwan et al., 2017).

Job embedded coaching is a research-based practice that supported middle school principal professional learning. Expert coaches are hired from outside the organization to

work one on one with school leaders to improve their leadership skills (Hackman & Johnson, 2009). Coaching is successful when principal behaviors change (Reeves, 2009).

Specialized trainings like conferences, workshops, and seminars provide opportunities for leaders to deepen their knowledge of the middle school concept. The Middle Grades Institute is a 1-week summer experience focused on providing middle school principals with expertise in middle grades curriculum, middle grades organization, middle grades literacy, technology and other middle school topics (Downes et al., 2017). In addition to MLD, middle school principals may have attended the Schools To Watch conference to learn the criteria for high performance including academic excellence, developmental responsiveness, social equity, and organizational structure (Parke et al., 2017). Middle school principals who engage in the MLD training become connected to the School To Watch network, collaborative learning walks, and middle school best practices (Flowers et al., 2018).

Leading a middle school is a challenging task which is compounded when the middle school has a large free and reduced-price lunch population (Sanchez, et al., 2019). The MLD seminars deepen middle school principals' knowledge about young adolescents (Flowers et al., 2018). Middle school principals engage in the MLD training increase professional commitment to developmentally appropriate middle school practices (Flowers et al., 2018). This increase in professional commitment to middle grades practices is enacted through consistent support of middle school teachers teaching mathematics. Middle school principals develop expertise through professional learning

experiences such as MLD training which focuses on the needs, characteristic, and programming specific to young adolescents.

Middle School Instructional Engagement to Improve Student Academic Outcomes

Student academic outcomes for middle school students are directly connected to student motivation and engagement. When students are motivated to participate in classroom activities student engagement increases (Carrabba & Farmer, 2018). Schools with a positive school climate are more likely to have teachers who vary instructional strategies (Silva et al., 2017). The concept of motivation is particularly pressing at middle school because middle school is a time at which motivation diminishes and diminished motivation may serve as a barrier to achievement (Alley, 2019; Mustafaa et al., 2017). Practices which promoted motivation for middle school students has been researched (Carrabba & Farmer, 2018). Practices include involving students in classroom decisions (voice or co-creation of the learning) such as norm setting or instructional activities and encouraging the students to be intrinsically motivated to improve their cognitive abilities, while building their passion to become life-long learners (Carrabba & Farmer, 2018). The principals are responsible for strong teacher and student relationships which is a factor in middle school student motivation (Mustafaa et al., 2017). Middle school principals and teachers who teach mathematics understand the effect they have on student motivation and engagement in instructional activities.

Specific instructional practice that increase motivation and engagement for students exist. The teaching approach, project-based learning increases motivation (Carrabba & Farmer, 2018). Alley (2019) indicated that middle school student motivation

is promoted with autonomous teaching that engages students in learning and learning decisions by creating social environments. Collaborative learning experiences, opportunities for students to talk, and integrated technology are also factors influencing student motivation (Alley, 2019). Teacher focused or controlled teaching diminishes middle grades student motivation (Alley, 2019). Clear strategies to increase middle school student motivation are identified. The lack of knowledge about effective strategies is a gap in the literature, but will not be addressed in this research.

Connecting the importance of developmentally appropriate learning experiences for middle grades students back to the leadership theories in the aforementioned literature is important. When the principal models a leadership style that was a blend of transactional and transformational, teachers better understand how to serve as facilitators in the classroom (Dutta & Sahney, 2016). Facilitating learning rather than directing learning created a style of learning that was a better fit for young adolescents (Carrabba & Farmer, 2018). The principal modeled a blend of transactional and transformational leadership had an indirect influence on student academic outcomes as mentioned previously in the literature review (Sebastian et al., 2016).

A focus on specific instructional practices as a means to improve the motivation of middle grades students is a requirement of instructional leadership. The principal is responsible for creating the instructional environment (Bickmore, 2016). Middle school principals, familiar with the motivating factors specific to middle school students, are able to effectively create the instructional environment and provide meaningful feedback to the teachers (Carrabba & Farmer, 2018).

Middle School Climate and Culture to Create a Developmentally Appropriate School

The principal holds the responsibility of creating a positive school climate as a manner of promoting teacher instructional strategies and improving student academic outcomes (Sebastian et al., 2016). Middle school principals provide a school climate, which is developmentally appropriate to the needs and characteristics of young adolescents in order to influence student academic outcomes (NMSA, 2010). Conderman et al. (2013) identified a connection between school climate and middle school student academic outcomes in school. Middle school principals who engage in reform-advocacy build a positive school climate (DeMink-Carthew & Bishop, 2017). According to Schneider and Duran (2010) student demographics had an impact on student perceptions of school climate. Middle school principals and teachers advocate on behalf of students on multiple topics including curriculum, scheduling, teaming and other middle school topics (DeMink-Carthew & Bishop, 2017). Middle school principals possess an understanding of the middle school concept, how the elements of the concept influence 10 to 14-year old students, and how to advocate for the elements of middle school programming. Curriculum, scheduling, teaming and other middle school topics are the foundation of a positive middle school climate about which middle school principals are knowledgeable so they can advocate and lead.

Middle school climate and culture is defined in the literature. A positive middle school climate focuses on building rapport, providing education that was not intimidating, anticipating concerns, reflecting before reacting, and establishing

communication (DeMink-Carthew & Bishop, 2017). Flowers, Begum, Carpenter, and Mulhall (2017) reported that strong middle school principals served as curriculum leaders, modeled appropriate practices for teachers, and exhibited trust for teachers. Conderman et al. (2013) defined school climate as the quality and frequency of personal interactions. Students perceive the climate of a school to be positive when teachers are friendly and respectful (Conderman et al., 2013). According to Wang et al. (2010) students who held a perception of a positive school climate were less likely to engage in behaviors that would disrupt the school climate. When the principal and the teachers demonstrate positive perceptions about the school climate, there are better social and academic outcomes (Kim, Schwartz, Cappella, & Seidman, 2014). Kim et al. (2014) examined middle school grade level configuration and reported no connection between the school grade span and the school climate.

Relationships among principals, teachers and students in a school community is important (Mustafaa et al., 2017; NMSA, 2010; Wang et al., 2010). Principals, teachers, and students all work together to create the school climate (Mustafaa et al., 2017; NMSA, 2010; Wang et al., 2010). Educators support the developmental and social needs of the students in order to foster a positive school climate (Kim et al., 2014).

The principal is responsible for creating an environment where strong teacher-student relationships lead to high levels of student engagement (Mustafaa et al., 2017). Strong relationships are an element of a positive middle school climate (NMSA, 2010). Establishing a perceived positive middle school climate supports middle school

instruction that is motivating and yields student academic outcomes.

Middle Grades Professional Learning for Middle School Principals

Understanding that young adolescents have needs and characteristics specific to their age group and understanding the tenets of the middle school concept, it is almost inconceivable that middle school principals are not required to have specialized training to lead middle schools. According to Gumus (2015), principals were required to have a master's degree in administration and an administration certificate. Middle school principals demonstrate competencies in middle school concept to effectively solve problems as problems arise in the context of leading a middle school (DiGaudio & Bickmore, 2019). Middle schools led by principals who are skilled and knowledgeable about the middle school concept demonstrate higher student academic outcomes (DiGaudio & Bickmore, 2019). The state of Ohio is the only state that holds a requirement for specialized middle school training (DiGaudio & Bickmore, 2019). DiGaudio and Bickmore (2019) reported that the lack of middle school principal training programs pointed to the need for other means to appropriately train middle school principals to effectively lead middle schools. The problem is compounded by the variability of the middle school teacher training across the country (Howell et al., 2018). Howell et al. (2018) reported variability across states in name, grades served, overlapping grades, competency requirements, and field experience requirements. Knowledgeable middle school principals who effectively lead middle schools where students demonstrate strong student academic outcomes are lacking. Bowers and White (2014) reported that principal training is weakly connected to student outcomes.

Middle school principals need to receive specialized training in the practices of high-quality middle schools either through professional preparation programs or through post baccalaureate professional learning programs. Principals who receive specialized training persist in dealing with middle school challenges over educators prepared only for elementary or secondary schools (Bishop & Nagle, 2016). Principals who are not exposed to the middle school concept during their training feel overwhelmed by young adolescent behavior and struggle to plan appropriate lessons (Ochanji et al., 2016). There is a need for middle school principals committed to and knowledgeable about young adolescent, educational research, and best practices for this age group to meet the demands of leading a middle school (Faulkner et al., 2017). Middle school leaders need to be taught critical areas of instructional leadership (Nash et al., 2014). Focus on direction, build a powerful organization, give life to data, ensure student-focused vision and action and lead learning are critical to middle school principal instructional leadership (Nash et al., 2014). Middle school principals and teachers who receive specialized middle school preparation have a strong understanding of young adolescents which address social, emotional, physical, and cognitive development (Ochanji et al., 2016). The middle school principal requires specialized training to effectively lead instruction that is developmentally appropriate for young adolescents.

Teacher Supervision and Creating a Middle School Culture

Challenges arise for middle school principals acting as instructional leaders, as they seek to provide support and supervision which has conflicting purposes (Reid, 2020). Principals who are active in the hiring and supervising of the teachers in their

school building are influencing the culture by the teachers they hire and the feedback they provide to the teachers they supervise to improve student academic outcomes (Reid, 2020). Middle school principals indicate that they preferred to hire teachers who possess middle school certification despite the fact that principals indicate that they did not know if the teachers were competent in their content area (Mee & Rogers Haverback, 2017). Middle school principals selected teachers who were specifically trained to work with young adolescents, who desired to work in a middle school, and who were familiar with the needs and characteristics of young adolescents (Mee & Rogers Haverback, 2017). Principals place emphasis on the knowledge of the middle school concept over that of content area knowledge implying that teachers could learn content pedagogy and knowledge. Middle school principals prefer teachers who have strong understanding of the middle school concept.

Supervision of new middle school teachers requires specific supports from the middle school principal to maintain a positive attitude. Middle school principal support positively affects teachers' negative feelings (Berkovich & Eyal, 2018). Beginning middle school teachers experience multiple challenges including managing student discipline, learning new curriculum, and preparing students for testing (Youngs et al., 2015). Middle school principals support novice teachers by assigning an experienced mentor teacher (Van Overschelde et al., 2017). Supervision is defined as ongoing support, teacher improvement, and teacher growth (Mette, et al., 2017). Middle school principals support new teachers in all of these endeavors including managing student behaviors and providing strong instructional leadership demonstrated by building

collaboration and trust (Youngs et al., 2015). Middle school principals play an important role in supporting novice teachers to meet the demands of the classroom. Middle school principals support new teachers through other processes such as assigning mentors, reducing isolation, supporting strong classroom management, allowing new teachers to refuse additional tasks, and prioritizing time (Whitaker et al., 2019). Middle school principals enact supervision to support teachers early in the teacher's career.

Experienced and new teachers experience rigorous evaluation processes. Middle school principals are charged with providing feedback that provides opportunities for professional growth and teacher accountability (Reid, 2020). The middle school principal holds the responsibility for balancing these two seemingly competing purposes for evaluation. Reid (2020) indicated that when the needs of district administrators were in competition with teacher needs, principals tended to lean toward the needs of the teacher. Teacher evaluation brought together the competing goals of accountability and improvement (Reid, 2020). Through the evaluation process, the middle school principal provides formative and summative feedback fulfilling the role of supervision (Mette et al., 2017). Middle school principals who effectively balance supervision and evaluation support and monitor teacher practice, identify target areas for improvement, and develop a building wide collective consensus about instruction balance supervision and support (Mette et al., 2017). Effectively navigating the balance of evaluation and supervision is a skill that middle school principals demonstrated.

The responsibility of the middle school principal to hire and supervise teachers requires many subsets of skills. Principals understand the competencies they are looking

for when they make hiring decisions. Principals understand what good middle school instruction looks like, how middle school students are motivated to learn, and how to best support teachers to facilitate deep learning. Middle school principals effectively support new middle grades teachers as they face challenges associated with student discipline, classroom management and building collaboration and trust. Finally, middle school principals balance supervision and evaluation in order to serve a dual purpose.

Middle School Mathematics Leadership and Instruction

Middle school principals demonstrate instructional leadership through multiple avenues as mentioned previously in the literature. A few studies point directly to mathematical instructional practices which middle school principals support to improve student academic outcomes particularly in mathematics. High-quality mathematics classrooms are created when students work collaboratively to discuss, think, and reason (Boston et al., 2017). High-quality mathematics classrooms are different than traditional mathematics classrooms where the teacher presents information, then the student practice independently (Boston et al., 2017). Boston et al. (2017) reported that in mathematics classrooms, principals needed to be able to identify challenging instructional tasks that required high levels of cognitive demand. Student engagement as reviewed earlier, was important. Boston et al. (2017) indicated that the principal must be able to distinguish between instructional activities that were busy work with low cognitive requirements and rigorous assignment with high cognitive demand which mediated student thinking. The common core curriculum requires that the curriculum contain tasks that are cognitively challenging (Boston et al., 2017). Once a principal recognizes the

level of rigor, the principal provides specific feedback to the teacher through the supervision process. Feedback, as mentioned previously in the literature, serves the dual purpose of supervision and evaluation.

While instructional leadership looks the same across most content areas, mathematics instructional leadership requires a different approach in setting the instructional vision (Katterfeld, 2014). Katterfeld (2014) indicated that there were insufficient measurement tools to examine subject specific instructional leadership. Middle schools that implement the middle school concept, teacher collaboration, and motivational instructional strategies demonstrate significant improvements in mathematics outcomes on standardized tests given in California, Illinois, and North Carolina (Flowers et al., 2017). A need exists for research about instructional leadership in middle school mathematics.

As I examined the literature around middle school leadership, I identified the strength in the alignment of research findings to that of principal leadership in general. Middle school principals like all principals need to focus on culture and climate and teacher supervision. However, I found in the literature that the middle school principal had the added burden of deeply understanding the learning needs and characteristics of young adolescents to improve student academic outcomes. This additional concept knowledge, combined with the MLD experience, which provided middle grades content for participants, leads to the focus of middle school principals specifically.

Summary and Conclusions

I conducted a literature review to examine current literature as it related to the research. Vygotsky's ZPD provides a conceptual model for this research and the literature documents the connection between the theory and the proposed research. The importance of the middle school principal establishing a balanced leadership style which influences how the middle school principal enacts instructional leadership practices is identified through analysis of the literature. The principal enacting the responsibilities of an instructional leader effects student academic outcomes (Sebastian et al., 2016). When the middle school principal embeds an understanding of the middle grades concept into the responsibilities and tasks, the middle school principals fulfill the role of middle school principal and effects student academic outcomes (NMSA, 2010). Instructional leadership enacted by the middle school principals in mathematics classrooms is different than that of other content areas (Katterfeld, 2014).

Principals engaged in the MLD training deepen their understanding of instructional leadership and the middle school concept (Flowers et al., 2018). How principals enact the knowledge and skills learned through MLD to support teachers teaching mathematics to effect student academic outcomes needs to be researched. A gap in the literature exists which describes the specific practices employed by middle school principals who engage in MLD training to support teachers teaching mathematics. Existing literature explored general middle school practices employed by the school faculty and staff. I will provide evidence about specific principal practices which

influence mathematics teacher practices and ultimately student academic outcomes. I present the research methodology in Chapter 3.

Chapter 3: Research Method

The purpose of this basic qualitative research design was to understand why middle school principals, trained in MLD, were inconsistently implementing instructional leadership practices to support teachers teaching mathematics. In Chapter 3, I examine the research methods that I used in this study. I used a basic qualitative research design to answer the research question regarding how middle school principals implement instructional leadership practices to support teachers teaching mathematics to improve student academic outcomes. I served as interviewer in the research process. Qualitative data provided perception data that was appropriate to answer the research question. Therefore, I interviewed middle school principals using a basic qualitative research design. I used purposeful sampling to identify middle school principal participants. I recorded and transcribed the interviews. I used thematic analysis to examine the data to the point of data saturation. The research met standards of trustworthiness, and I followed and documented ethical procedures.

Research Design and Rationale

The research question that guided this research was:

How do middle school principals, trained in MLD, implement instructional leadership practices to support teachers teaching mathematics in order to improve student academic outcomes?

The purpose of this basic qualitative research design was to understand why middle school principals, trained in MLD, were inconsistently implementing instructional leadership practices to support teachers teaching mathematics. As a novice researcher, I

conducted semistructured interviews with each participant. Each interview was approximately 1 hour in length and was conducted virtually via Zoom due to COVID-19. Semistructured interviews are a common research methodology used to gain deep understanding of the human experience (Bearman, 2019). The semistructured interviews were appropriately conducted via an online platform (Brown & Danaher, 2019). This was an important element given the COVID-19 pandemic. Respondents were able to respond in ways that were authentic to them through a semistructured interview (Brown & Danaher, 2019). I extracted reliable and comparable data from the semistructured interviews (Brown & Danaher, 2019).

I prepared a limited number of interview questions in advance of the interview. I planned for follow-up questions. The semistructured interview was appropriate for this research because it provided me with the opportunity to create an interview schedule of topics to guide the interview and provided opportunities to adjust questions as needed to gain further information (Thomas, 2013). I sought to understand on a deeper level why middle school principals, trained in MLD, were inconsistently implementing instructional leadership practices to support teachers teaching mathematics to improve student academic outcomes. Interview questions and follow-up questions were structured around this topic. I am a professional educator with 28 years of experiences as a middle school teacher, middle school principal, trainer, consultant, and university faculty.

Role of the Researcher

I served in the role of novice researcher. I have 28 years of experience as a middle school teacher, middle school principal, and educational consultant. I am the executive

director of an organization that provides educational consulting in the areas of school leadership and content expertise, including mathematics and school improvement. I hold a master's degree in middle level education, a master's degree in educational administration, and an educational specialist degree in administration with a focus on superintendency. My expertise as a practitioner and theoretical background ensured that I was well equipped to conduct these interviews in an unbiased manner. I engaged in the interviewing process as the interviewer. I collected and analyzed the data as I served in the role as novice researcher.

As a member of the MLD implementation project team and as a local educator, I had professional relationships with many of the middle school principals engaged in the interviews. The existing professional relationships did not represent a power structure. The relationships were collegial. Because the middle school principals worked collaboratively with the MLD team, there is the potential for the middle school principals to want to respond to the interview questions in what they perceive to be a positive relationship. The potential bias was managed through a conversation at the onset of the interview explaining that the responses had no bearing on the previous or the future work together.

Methodology

Participant Selection

The setting of the MLD training site consisted of six middle schools. The identified schools had similar demographics and achievement scores. The research included middle school principals in schools in two states with free-and reduced-price

lunch rates of 40% or greater. The population was 33 middle school principals. Research participants were eligible to engage in the research if they participated in the MLD seminar between 2014 and 2017. MLD participants were established from the sign in logs. The sample was six middle school principals.

I used purposeful sampling to identify principals who possessed administrator state certification and were in the role of middle school principal for at least 2 years. I confirmed middle school principal experience prior to establishing an interview appointment via email between me and the middle school principal. I anticipated that I would interview between 12 and 15 middle school principals. The small sample provided me with the opportunity to conduct in-depth interviews with the middle school principals. Middle school principals were difficult to engage due to the current pandemic. MLD leadership team members provided email addresses so that I could contact eligible participants. Middle school principal participants were initially contacted via email, and follow-up emails were sent as necessary, to secure commitments from the middle school principal participants. I informed each potential middle school principal participant of their rights as human subjects. Middle school principals who participated signed informed consent forms, and I interviewed them.

Instrumentation

I developed the interview protocol. Themes included middle school principal leadership style, responsibilities, teacher support, and evaluation all in the context of strong middle school practices as taught through the MLD process. I used the interview protocol to guide the interview (Appendix A).

Questions had a context-specific focus as they addressed principals' instructional leadership and middle school concept knowledge and application skills as applied in the area of mathematics. I asked questions of middle school principals to determine how middle school principals approach leadership. Middle school principal participants were asked about specific behaviors that demonstrated transactional leadership and about specific behaviors that demonstrated transformational leadership.

I asked middle school principal participants questions about how middle school principal participants spent their time indicating a focus of attention on responsibilities that middle school principal participants saw as important to the responsibilities of instructional leadership. I asked middle school principal participants questions about the value middle school principals found and leveraged to affect instructional practices when supporting teachers who teach mathematics.

I asked middle school principal participants questions during the interview regarding perceptions about teacher job satisfaction and school climate. I asked middle school principal participants to share perceptions about how job satisfaction and school climate influence student academic outcomes. I presented interview questions about the engagement of principals in activities directly related to students for example meeting with parents.

I asked middle school principal participants questions during the interview process which required them to explain their understanding of young adolescents. I asked middle school principal participants to clarify specific training about the needs and characteristics of young adolescents which was received from the MLD seminars. I asked

middle school principal participants to discuss middle school practices they employed at the school as part of the instructional leadership responsibilities. I asked middle school principal participants to discuss the MDL training. I asked middle school principal participants to identify key elements of the MLD training that changed their understanding of middle school practices and instructional leadership. Middle school principal participants responded to interview questions about their application of the new learning as an instructional leader.

A focus on specific instructional practices as a means to improve the motivation of middle grades students was an element of instructional leadership. The middle school principal should be familiar with the motivating factors for middle grades students to effectively create the instructional environment and provide meaningful feedback to the teachers. I asked middle school principals questions about middle school principal participants' understanding of middle school best instructional practices and about student motivation and engagement.

Interview questions sufficiently captured data to answer the research question as the questions address each of the important components of the topics including instructional leadership, middle school practices, and student academic outcomes. I developed interview questions based on the literature review and specific factors of the middle school concept. Face validity was used to demonstrate validity of the interview protocol (Thomas, 2013).

Interviewing provides perception data that was appropriate for a qualitative study (Thomas, 2013). Upon IRB approval from Walden University I started the data collection

process. I contacted middle school principals who engaged in the MLD training via email to ask for their participation in the interview for the purposes of this research. I emailed middle school principal participants the informed consent forms and the participants returned the consent forms electronically prior to the interview.

Participating middle school principals engaged in a 1-hour long interview. I digitally recorded interviews with the permission of each participant using the Zoom recording option. At the conclusion of the interview, I discussed exiting procedures with middle school principal participants. I informed middle school principal participants that I would transcribe the interviews and share the transcriptions with them. I shared information with the middle school principal participants about how the interview data would be analyzed and published.

I transcribed interview data immediately after the interview using Amazon Transcribe. I manually finalized the transcriptions making corrections and ensuring accuracy. I confirmed content validity through a member check process. Middle school principal participants received the transcription of the interview for review via email. Participants reviewed the transcriptions to ensure their responses were accurately captured. Middle school principal participants were given 3 days to review the document. I instructed middle school principal participants to email a meeting request if they had changes or corrections. I told middle school principal participants that no response was necessary if they believed the transcription to be accurate. I used thematic analysis to analyze the interview data for emergent themes. I ensured content validity through the

use of thick description. I determined sufficiency of data collection when data saturation was met during the data analysis process.

Data Analysis

I used a seven-step data analysis process (Rubin & Rubin, 2012). I transcribed and summarized the recorded interviews. I coded the transcriptions for themes relevant to the research question. I identified commonalities across interviews. I sorted and resorted findings to compare interviews. I summarized the findings. I combined emerging themes to determine if the findings were generalizable to the research question.

I conducted interviews via Zoom. I conducted the interviews and they were 1-hour in length. I recorded interviews using the recording mechanism available via Zoom. I used the process of conducting interviews via Zoom to capture physical responses to questions as well as verbal responses. I took notes about physical responses during the interview process and checked the accuracy of written notes with the video. I transcribed the recorded interviews and shared the transcriptions were shared so that middle school principal participants could confirm accuracy. I analyzed discrepant data to determine additional factors which may have caused different responses.

Coding was the next stage in the data analysis process. I used Initial coding to focus on recognizing and identifying concepts and themes. I identified themes aligned with the research question by key topics including instructional leadership, middle school concept, teacher support and student academic outcomes. I coded items which connected directly to answering the research question and provided enough data to conduct a comprehensive analysis.

I sorted data to find commonalities across participants. I analyzed and summarized the sorted files. I summarized the findings using rich descriptions to explain the findings. I examined the summarized findings to determine if the findings were generalizable to the answer the research question.

Trustworthiness

The research study met standards of trustworthiness, transferability, dependability and confirmability. I confirmed the trustworthiness of the research through member checks, ensuring interpretive validity aligning participants responses with the perceived meaning (Ravitch & Carl, 2016). Participating middle school principals confirmed their responses by reviewing the transcripts. I confirmed transferability through comprehensive descriptions of the context and the findings. Transferability allows researchers to generalize context to other situations. I determined dependability because the appropriate research methodology was selected to address the research question. I established confirmability through the use of a reflexivity journal by which I recorded my responses to the data collection and analysis processes.

Ethical Procedures

I sought IRB approval once URR approval was given. I sought IRB approval from Walden University and the research site. I began data collection after IRB approval was granted. I recruited middle school principal participants via email from a pool of middle school principals who participated in the MLD seminar. I obtained contact information from eligible principals from the MLD leadership team. I sent follow up emails to ensure receipt of the invitation to participate. Six middle school principal volunteers participated

in the 1-hour interview conducted online via Zoom. I emailed the middle school principal participants the informed consent form (Appendix B). I asked participants to confirm consent with an email reply “I consent.”

At the onset of the interview, I explained that this research was completely separate from my role as Executive Director at the Institute for Excellence in Education (IEE). The schools led by the middle school principal participants occasionally engaged IEE in consulting work. No power differential existed in the relationship between me as the Executive Director of IEE and the principals who led the schools. I clarified that their decision to participate or not had no bearing on the way I interacted with them. The clarification of this was also present in the consent form. I explained that their answers had no influence on the relationship and that all responses were confidential.

I gave middle school principal participants three days to review the transcribed interviews, then asked to participate in a 30-minute review of the transcription if necessary, to confirm accuracy. I conducted the review 7 to 10 days after the initial interview. I maintained the data confidentially. Participant names were removed and a I assigned a unique identifier known only to the researcher. I kept recorded interviews and transcriptions in a password protected file on my computer and on a password protected USB drive. I will keep the USB drive in a locked cabinet for five years.

Summary

In this chapter, I described the proposed research methodology. As a participant observer I used a basic qualitative research design to answer the research question how do middle school principals, trained in MLD, implement instructional leadership

practices to support teachers teaching mathematics to improve student academic outcomes. I used purposeful sampling to identify middle school principal participants. I developed the proposed interview protocol and questions aligned with the research question. I recorded and transcribed interviews. I used thematic analysis to examine the data to the point of data saturation. I followed and documented the proposed research methods standards of trustworthiness and ethical procedures. In Chapter 4, I will present the results of the research.

Chapter 4: Reflections and Conclusions

The purpose of this research was to understand why middle school principals, trained in MLD, were inconsistently implementing instructional leadership practices to support teachers teaching mathematics to improve student academic outcomes. The research question that guided this research was: How did middle school principals, trained in MLD, implement instructional leadership practices to support teaching mathematics to improve student academic outcomes? In Chapter 4, I describe the setting, the data collection and analysis processes and share the findings of the research.

Setting

The setting of the MLD training site consists of 12 to 15 middle schools. The participants led middle schools that had similar demographics and achievement scores. The research included middle school principals in schools in two states with free-and reduced-price lunch rates of 40% or greater. Research participants were eligible to engage in the research if they participated in the MLD training between 2014 and 2017. MLD participants were established from the sign in logs. The sample consisted of six middle school principals. I used purposeful sampling to identify principals who possessed administrator state certified and were in the role of middle school principal for at least 2 years. I confirmed middle school principal experience prior to establishing an interview appointment via email between me and the middle school principal. Due to the COVID-19 pandemic, I conducted the semistructured interviews via Zoom, a video conferencing tool.

Six middle school principal participants responded to the invitation to participate. Because of COVID-19, schools across the country shifted to an online learning platform, which presented many challenges for the middle school principal participants. I directed the middle school principal participants to respond to the interview questions regarding their perceptions and experiences during a traditional model of schooling rather than schooling during COVID-19.

Data Collection

Six middle school principal participants, who were trained in MLD, engaged in a semistructured interview that I conducted. Eligible middle school principal participants were trained in MLD. I conducted online interviews due to COVID-19 and I digitally recorded the interviews with the permission of each participant using Zoom. Each interview lasted between 50 and 60 minutes. I used the interview protocol to guide the interview (Appendix A), which I developed.

I transcribed interview data immediately after the interview using Amazon Transcribe for the initial step of transcription. I then manually completed the transcription sorting the text by speaker and making edits as necessary. I completed the manual review for each transcript taking roughly 2.5 hours per interview. Middle school principal participants received the transcribed interviews via email and were given 3 days to read and respond to any inaccuracies they found in the transcriptions. Middle school principal participants were asked to contact me via email if they found an error. No inaccuracies in the transcripts were reported by the middle school principal participants.

There were technical difficulties with one middle school principal participant, which prevented the recording of the video during the Zoom call. The principal, who stated that he has used Zoom frequently during the past months, was unable to log into the meeting. I used Zoom to record an audio only version of the interview.

Data Analysis

The data analysis process began with coding. I utilized a three-step coding process that included open coding, axial coding, and selective coding (Williams & Moser, 2016). Initial coding used an open approach to focus on recognizing and identifying concepts (Williams & Moser, 2016). I read and reread transcripts to identify patterns. Key terms included *instructional leadership*, *middle school concept*, *teacher support*, and *student academic outcomes*. Initial codes emerged. I then used axial coding and a process of deductive and inductive reasoning to analyze and identify relationships between the terms identified in the open coding process (Williams & Moser, 2016). Through selective coding, I was able to conceptualize the ideas and establish themes (Williams & Moser, 2016). Themes included instructional leadership, relationships, school vision, job satisfaction, MLD best practices and supports and mathematics teachers. I analyzed and reorganized data further, and new key terms and themes emerged. I coded items which connected directly to answering the research question and provided enough data to conduct a comprehensive analysis.

As I conducted the analysis of the data using the open coding process of reading and rereading the text, using colors to identify similar topics and then sort the topics by color, I identified 19 key terms that were common across all interviews. Example key

terms include *mathematics classroom visits, mathematics resources, mathematics coaching, building relationships in mathematics classrooms, student engagement in mathematics, mathematics instruction, coaching in mathematics, professional development for mathematics teachers, professional development for principals, and networking*. I sorted and analyzed the 19 key terms using the axial coding model which uses deductive and inductive reasoning to identify relationships between the key terms (Williams and Moser, 2016). The following concepts emerged through axial coding: actions, personal support, instruction, and adult learning. Through the selective coding process, I examined the key terms and the concepts that emerged in the first two steps of the coding process, open coding, and axial coding. I formed abstract ideas through analysis, which I developed in to four common themes. The themes include

- Principal support for mathematics teachers.
- Instructional practices in the mathematics classroom.
- Professional development.
 - Principals.
 - Mathematics teachers.
- Relationships.
 - Principal and math teacher.
 - Math teacher and students.

Figure 1 demonstrates the themes and the related key terms.

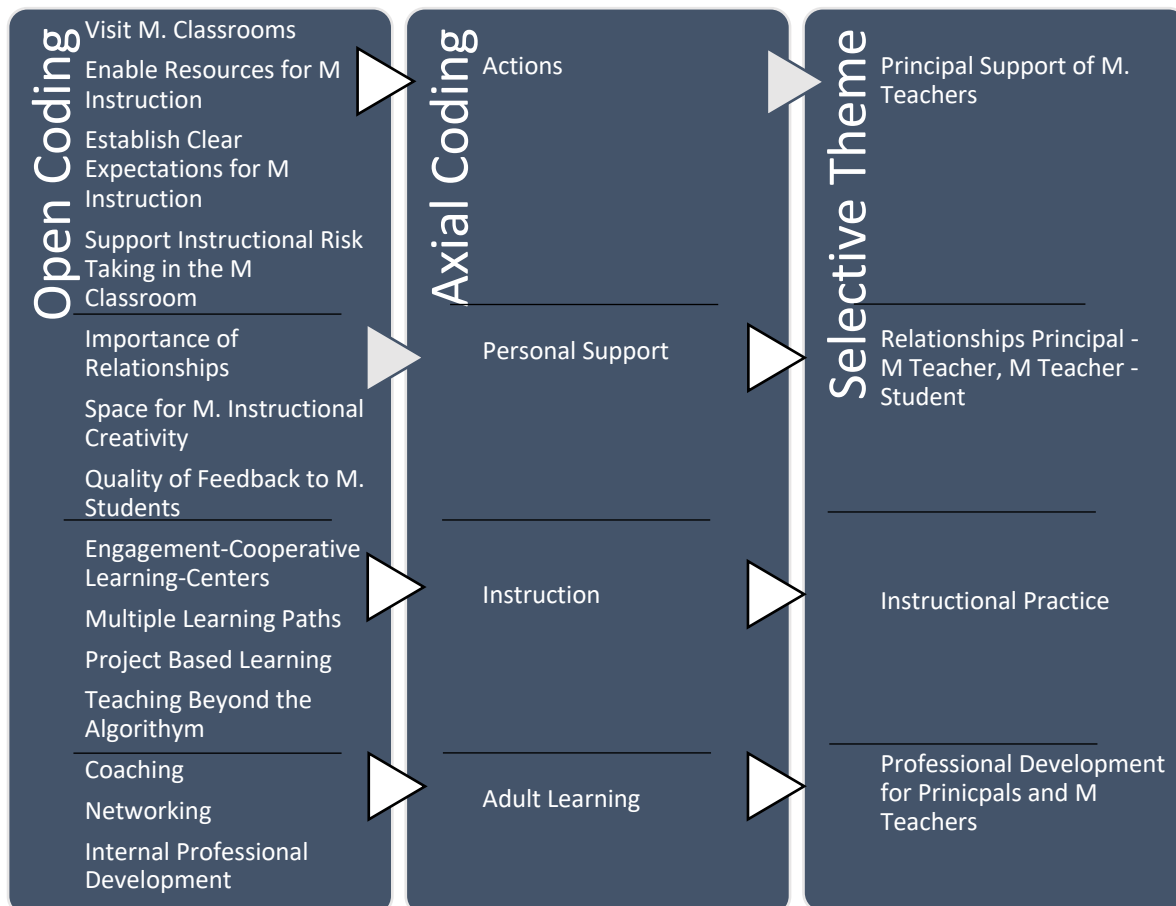


Figure 1. Thematic analysis and coding.

A key discrepancy emerged between middle school principal participants who had formal training in mathematics and middle school principal participants who did not have formal training in mathematics. The discrepancy was around how the middle school principal participant knew what to expect instructionally in the mathematics classroom. Middle school principal participants without formal mathematics training expressed that they learned from the mathematics teachers what to look for instructionally in a mathematics classroom. Those with formal training in mathematics did not express where

they learned what to look for instructionally in a mathematics classroom. This discrepancy did not factor into the analysis because regardless of the manner in which the information was obtained all middle school principal participants described the same instructional components that they look for when visiting a mathematics classroom.

Results

The research question, how do middle school principals, trained in MLD, implement instructional leadership practices to support teachers teaching mathematics to improve student academic outcomes was answered through the emergence of four themes. The themes which address the research question explain how principals (a) take action to support mathematics teachers, (b) build strong relationships principal to mathematics teacher and mathematics teachers to students, (c) focus on instructional practice in the mathematics classroom, (d) providing for and engaging in professional development for principals and mathematics teachers.

Theme 1: Principal Actions to Support Mathematics Teachers

Middle school principals implement instructional leadership practices to support teachers teaching mathematics through several support mechanisms including classroom visits, enabling resources specifically instructional coaching, establishing clear expectations and supporting instructional risk taking. Middle school principal participants recognize the importance of classroom visits to mathematics classrooms to monitor instruction as a key way to support mathematics teachers. One middle school principal participant, P1, stated that she demonstrates a strong focus on curriculum through walkthroughs that have a strong focus on curriculum. Another middle school principal

participant, P2, indicated that the majority of time is spent “getting into the classroom,” or conducting classroom observations. Middle school principal participants recognize the importance of enabling resources, specifically instructional coaching to support teachers teaching mathematics. All middle school principal participants spoke specifically to the value of having a mathematics coach that worked directly in the classroom with teachers. The middle school principal participants identify about the importance and value of supporting teachers by adding content expertise through coaching.

Establishing clear expectations is another way that middle school principals implement instructional leadership practices to support teachers teaching mathematics. Principals describe these expectations as both instructionally focused and relationship focused. Middle school principal participants express that they look for teacher to interact positively with students, building positive relationships in mathematics classrooms. The middle school principal participants also express the expectation that mathematics teachers explain how to solve mathematical problems in multiple ways.

Middle school principal participants implement instructional leadership practices to support teachers teaching mathematics by supporting instructional risk taking in the classroom. Middle school principal participants recognize that teachers need to be free to be creative and approach instruction in new ways. Respondents summarize that mathematics teachers need to feel that their professionalism is honored, that they have input on instructional decisions.

Theme 2: Build Strong Relationships

Middle school principal participants identify the importance of relationships in supporting mathematics teachers and in improving academic outcomes for students in mathematics. The middle school principal participants express the importance of relationships between the principal and the mathematics teacher as well as the importance of the relationship between the mathematics teacher and the students when impacting student academic outcomes.

Middle school principal participants across the board recognize the importance of building positive relationships with the mathematics teachers. Middle school principal participant 1 (P1) said about working with mathematics teachers, "...you can't be progressive and make progress when you don't have a team." P1 stated the importance of building relationships with mathematics teachers, stating that she spent the majority of her time before school started building relationships with teachers. Middle school principal P2 said, "I want to make sure that principals know that relationships are kind of the number one thing they can do to improve their school." The importance of the relationships between the principal and the teachers teaching mathematics is supported by the findings of the literature review connecting job satisfaction to student academic outcomes. When quality relationships were developed between the middle school principal and the teachers teaching mathematics job satisfaction was higher.

The importance of a strong relationship between the middle school principal and the teacher teaching mathematics is emphasized when middle school principal participants explained the factor of instructional creativity and instructional risk taking in

the mathematics classroom. Middle school principal participants share a nontraditional approach to mathematics and recognize that a high level of trust was needed between the principal and the teacher teaching mathematics so the teacher was free to try new strategies. “So, math, to me is about how you are getting there, not necessarily the answer,” is how P2 described the nontraditional approach to mathematics instruction. P1 said, “How are they explaining it (math)? Are they showing them different routes?” The middle school principal participants went on to describe the importance of relationship in this type of mathematical instructional environment. Principals said about teachers teaching mathematics, “as long as they feel safe in their work place to be creative and to explore different teaching techniques.” P3 stated, “I allowed them to try new things. If it failed, it failed.”

Middle school principal participants also spoke about the importance of the relationship between the mathematics teacher and the student. Middle school principal participants note that when mathematics teachers “start off with relationships with the kids” they are better able to provide instruction. The principals further stated, “the kids don’t care what the teacher knows.” Mathematics teachers need to start with relationships and then move to content. Middle school principal participants recognize the importance of student voice in the classroom. A principal noted, that “students want to be heard and they want to be respected and they want to be a part of the solution.” Teachers were able to offer opportunity for student voice in the classroom when trust was established and trust came from building solid relationships.

Middle school principal participants identify strong relationships between principals and teacher and between teachers and students as a way in which middle school principal participants implement instructional leadership practices to support teaching mathematics to improve student academic outcomes. Middle school principal participants support teachers by directly building strong relationships with teachers teaching mathematics and by holding the expectations that teachers teaching mathematics build strong relationships with the students in their classrooms.

Theme 3: Instructional Practice

Middle school principal participants implement instructional leadership practices to support teaching mathematics through monitoring of instructional practices in mathematics. Middle school principal participants look for active learning experiences in the classroom. Student engagement is described using various terms including cooperative learning, Kagan, project-based learning, and centers. Regardless of how the respondent identifies the engagement, the overall expectation is the same. It is expected that students work cooperatively with each other and interact with the content in ways that go beyond worksheets.

Middle school principal participants look for and support differentiated instruction in the classroom. Teachers are expected to teach beyond the algorithm. “They turn math into more of a game experience for kids,” stated one middle school principal participant. Another middle school principal participant stated, “...another thing is looking for those options that the teacher is giving them. How many ways are they showing them to learn math?” Middle school principal participants demonstrate

instructional leadership by expecting teachers teaching mathematics to differentiate instruction.

Theme 4: Professional Development

Middle school principal participants implement instructional leadership practices to support teaching mathematics by participating in meaningful professional development experiences and providing opportunities for teachers teaching mathematics to participate in meaningful professional development. Middle school principal participants identify meaningful professional development experiences as networking, instructional coaching, internal professional development, and leadership coaching.

Engaging in conversation and shared learning with other schools provide networking opportunities which the middle school principal participants identify as valuable. Networking opportunities strengthen middle school principal participant's instructional leadership enabling them to better support teachers teaching mathematics. "Being with other schools that were going through some of the same things and challenges...is really valuable," stated one middle school principal participant, P1. Another middle school principal participant, P3 pointed out the desire to first "see" strategies happening in another school to ensure it was the right direction for mathematics teachers before sharing the new idea or strategy. Networking is identified as a powerful professional development opportunity which supported the instructional leadership abilities of the middle school principal participants.

Coaching as a professional development strategy is identified by middle school principal participants which enables them to implement instructional leadership practices

to support teaching mathematics in two ways. Middle school principal participants recognize the importance of leadership coaching for themselves as well as instructional coaching for the mathematics teachers they support. One middle school principal participant, P1, points out the value of the coach to act as “a sounding board, and a safe place for me to explore ideas.” This middle school principal participant stated, “she would just keep probing me for a deeper level of understanding or thinking.” Another middle school principal participant, P2, expressed the importance of leadership coaching in this statement, “So, I think just bringing in the math coach who helped me, (know) how to evaluate or observe a math teacher.”

Middle school principal participants also recognize the importance of instructional coaching for mathematics teachers. One middle school principal participant, P2, pointed out that mathematics was not his strong point and so he brought in a coach who was stronger than him in mathematics. P2 said, you have to “bring people better than you and (have them) teaching our teachers kind of the power standards.” Another middle school principal participant, P3, pointed out, “We have a title one math specialist (coach) who works with all of our math teachers...and really impacts what we do with math and we grow so much.” Middle school principal participants clearly express the importance of providing professional development through coaching as a professional development strategy to implement instructional leadership practices to support teachers teaching mathematics.

Leveraging the internal expertise of teachers in the building to provide professional development is a strategy used to implement instructional leadership

practices to support teachers teaching mathematics. Middle school principal participants recognize the expertise of those in their building and provide opportunities for mathematics teacher leaders to guide professional learning. One middle school principal participant stated, “Teacher A does this well so she is going to lead. We had really great PD. People don’t cringe when they hear that because they know that they are going to take some things away.” Another middle school principal participant notes the value of mathematics teachers leading the professional development. “Once the teachers see each other achieving, they jump on board.” Internal professional development is seen by the middle school principal participants as a way to implement instructional leadership practices to support middle school teachers teaching mathematics. The themes which address the research questions include: principal actions to support mathematics teachers, build strong relationships, instructional practice in the mathematics classroom, and professional development. Middle school principal participants express the importance of these elements in improving job satisfaction, clarifying school vision and goals and enacting the role of instructional leader as a means to supporting teachers teaching mathematics and improving student academic outcomes.

Evidence of Trustworthiness

Trustworthiness is established in the research using thematical analysis through precise data analysis, accurate recording systems and documentation of application of the methodology (Nowell, Norris, White & Moules, 2017). The research study meets standards of trustworthiness including credibility, transferability, dependability and confirmability. The credibility of the research is confirmed through a member check

process. Member check operationalizes the credibility by ensuring participant intent with the findings (Nowell et al., 2017). The goal is to ensure interpretive validity aligning participants responses with the perceived meaning (Ravitch & Carl, 2016). Participating middle school principals received the transcribed interview via email. Middle school principal participants were given 3 days to review the transcriptions and were directed to respond with an email if they believed a change was necessary. They were informed that no response would indicate that they were satisfied with the validity of the responses. The middle school principal participants did not raise any concerns with the transcriptions.

Transferability is confirmed through comprehensive descriptions of the context and the findings. Thick description ensures that other sites may determine the application of the findings to other sites (Nowell et al., 2017). Transferability is explored in the limitations section to determine if the researcher's findings were generalizable to another context due to the sample size. The small sample size may make transferability a limitation of this research.

Dependability is determined because the appropriate research methodology was selected and documented to address the research question. The documented process of conducting semistructured interviews followed the steps set forth in the methodology for qualitative research using semistructured interviews. Dependability is determined when research is logical, traceable and documented (Nowell, 2017). I conducted semistructured interviews so that participants could provide detailed responses to prompts and have the flexibility to lead the discussion to points where were important to the participants.

Confirmability is established when there is certainty that the findings are a result of the data (Nowell, 2017). The establishment of credibility, transferability and dependability determines confirmability (Nowell, 2017). Confirmability is established through the use of a reflexivity journal by which I recorded my responses to the data collection and analysis processes.

Summary

In Chapter 4, I included a description of the setting. The data collection and analysis processes were explained in connection to the research question. The findings of the research were presented. The findings indicate that middle school principal participants, trained in MLD, implemented instructional leadership practices to support teaching mathematics to improve student academic outcomes by supporting mathematics teachers, building strong relationships, expecting specific instructional practice in the mathematics classroom, and engaging in professional development for principals and providing professional development for mathematics teachers.

Chapter 5: Discussion, Conclusions, and Recommendations

Because middle school principals, trained in MLD, were inconsistently implementing instructional leadership practices, the purpose of this research was to understand why middle school principals, trained in MLD, were inconsistently implementing instructional leadership practices to support teachers teaching mathematics. I used a semistructured interview process to collect qualitative data from middle school principals who were engaged in MLD training. After the interviews, I used thematic coding to conduct an analysis of the data. Through analysis, I discovered that middle school principal participants, trained in MLD, implemented instructional leadership practices to support teaching mathematics to improve student academic outcomes in four ways. Middle School principal participants, trained in MLD, implemented instructional leadership practices to support teachers teaching mathematics by (a) taking specific actions to support mathematics teachers, (b) building strong relationships, (c) expecting specific instructional practices in the mathematics classroom, and (d) engaging in professional development for principals and providing professional development for mathematics teachers.

Interpretation of the Findings

I found that middle school principals who were trained in MLD supported teachers teaching mathematics to improve student academic outcomes by (a) taking specific actions to support mathematics teachers, (b) building strong relationships with mathematics teachers, (c) expecting specific instructional practices in the mathematics classroom and (d) engaging in professional development for principals and providing

professional development for mathematics teachers. The answer to the research question provides direction to school leaders as they seek to implement instructional leadership practices to support mathematics teachers.

Findings 1: Principal Actions to Support Mathematics Teachers

The findings of the research confirm and extend the knowledge in the discipline by examining the concepts through the lens of instructional leadership in mathematics. The aforementioned literature review addressed key elements of instructional leadership to improve student academic outcomes. These elements included principal as instructional leader, principal as leader, principal dual effect on student academic outcomes, and principal and teacher interactions and the effect on student academic outcomes. Through the findings I confirmed the knowledge in the discipline as responses supported the literature. For example, the literature detailed the importance of the role of the principal in creating a positive climate. P5 stated, “I think as the leader, I set the tone (of the building).” P3 and P6 referred to the following quote by an unknown source: “If the principal sneezes the whole school catches cold” to describe the importance of the role the principal plays in building the culture of the school as whole and with the math teachers specifically. Climate is as important in the subsection of the math teachers as it is to the entire climate of the school and that middle school principal participants build this climate through specific actions to support teachers teaching mathematics

Findings 2: Build Strong Relationships

In the literature review, I identified trust between principal and teachers as a key factor in influencing the culture of the building and, thus, the student academic outcomes

(Hallam et al., 2015). P5 pointed out the importance of trust with the mathematics teachers she supervises:

I have the ability and I do several times a year, (hold) individual discussions with each math teacher, and I've really build that relationships so that they feel like they can talk to me about what they are struggling with, that we can talk about how I support them...and I think that's been really key in helping them be willing to move forward. Because if they can't be vulnerable near me then we've got bigger, serious barriers that will keep them from helping kids.

According to P5, a trusting relationship between the principal and the teachers supported by the principal is a key element of student academic outcomes. I identified in the literature the importance of job satisfaction, how the principal shapes that, and why that is important to teachers.

Findings 3: Instructional Practice

In the aforementioned literature review, I shared the importance of student engagement in middle school classrooms. Through the findings, I confirmed the importance of active and engaging learning experiences specific to the middle school mathematics classroom. P6 described the importance of student engagement as students working actively with one another and engaging in a productive struggle. P5 identified real student engagement is a key indicator that a principal should look for when conducting classroom visits in mathematics classrooms. P5 said engagement could be identified by students being engaged in real and authentic dialogue about mathematics.

Findings 4: Professional Development

Professional development was seen by the middle school principal participants as a lever in implementing successful instructional leadership practices. I discovered in the findings that professional development was important on two levels. The middle school principals themselves found value in participating in meaningful professional development including networking with other schools and leadership coaching. Middle school principal participants also found it important to provide meaningful professional development opportunities to math teachers. Middle school principal participants frequently defined *professional development opportunities* as instructional coaching in the areas of mathematics.

Vygotsky's theory of ZPD applied to the learning between (a) the principal and the professional development provider, (b) the principal and the teachers, and (c) the teachers and the students. The ZPD theory was evident throughout the findings. Repeatedly, the middle school principal participants demonstrated how they received support for learning from a more knowledgeable person, a coach, then how they supported teachers' learning, either through their own actions or by providing them with a more knowledgeable person. The middle school principal participants explained how they expected teachers to interact with students to improve student academic outcomes. For example, the ZPD is evident in the responses of the middle school principal participants in that they recognized the importance of (a) the learning they engaged in with the professional development provider, (b) the role the middle school principal participant played in developing strong relationships with the teachers, and (c) the role

the teachers played in developing strong relationships with the students. The importance of trust to student academic outcomes in mathematics is another example that was reflective of the ZPD theory considering the relationship between the principal and the teacher and the teacher and the students.

Limitations of the Study

One limitation of the research was transferability. The number of respondents was small. The sample size of six provided rich content for analysis but represented a relatively small sample size. Due to sample size, researchers should use caution when generalizing context to other situations. The data collected through the semistructured interviews were self-reported and has the potential to demonstrate bias of selective memory, telescoping, attribution or exaggeration. A further area of research would be to examine how middle school principals who have not participated in MLD support teachers teaching mathematics. The research presented provides a comprehensive analysis of middle school principal participants' perceptions about their role as instructional leaders supporting teachers teaching mathematics.

Recommendations

Findings led to several recommendations for consideration. Middle school principals who wish to increase student academic outcomes in mathematics by (a) taking specific actions to support mathematics teachers, (b) focusing on building strong relationships, (c) expecting engaging instructional practices, and (d) engaging in and providing meaningful professional development for themselves and for teachers of mathematics.

Based on the findings, I recommend middle school principal participants take specific actions that demonstrate the implementation of instructional leadership practices, including conducting conversations focused on curriculum, spending significant time in classrooms, providing access to resource in terms of materials learning support, and creating safe opportunities to try new instructional practices without fear of repercussions if the experiment fails.

Based on the importance of building strong relationships, I can recommend that middle school principals engage in specific practices that build trust with mathematics teachers and increase job satisfaction. Instructional leadership practices in which middle school principals may engage that improve job satisfaction included providing opportunities for mathematics teacher leaders to lead professional development. Middle school principals who wish to enact instructional leadership practices should enable resources such as mathematics coaching.

It is recommended that middle school principals place emphasis on relationship building between themselves and the mathematics teachers and between the mathematics teacher and the students. Middle school principal participants repeatedly expressed the importance of relationship building to support teachers teaching mathematics to improve student academic outcomes. I recommend, based on the findings, that middle school principals' support teachers teaching mathematics by setting an expectation of engaging learning activities.

Middle school principals should set expectations for middle school mathematics instruction that offers multiple pathways to learning. Middle school mathematics

instruction should move beyond solving the algorithm as a single strategy to solving a mathematic problem by showing students multiple ways to solve the same problem to better meet the needs of all learners and to improve student academic outcomes. Middle school principals who enact instructional leadership practices that increase student academic outcomes must recognize nontraditional instructional practices and set the expectation of engagement of students with the content and with other students. Networking and coaching improved principal leadership in mathematics supervision and supported teacher in their instructional practice.

Implications

The findings have the potential to impact social change on two levels, specifically the individual and organizationally. The findings may have significant implications in the area of social change by helping middle school principals to better apply instructional leadership practices to support teachers teaching mathematics. When middle school principals are aware of the instructional practices that support teachers teaching mathematics, they can provide more meaningful and effective support to teachers. Organizationally, school systems that understand instructional practices can set expectations for principals to enact the practices that are most effective. Overall, implementing these practices will improve student academic outcomes in mathematics significantly changing student learning.

Conclusion

Middle school principals play a significant role in student academic outcomes in mathematics. The role is enacted through the support middle school principals provide

for teachers teaching mathematics. When principals provide support for teachers teaching mathematics by focusing on principal actions to support mathematics teachers, build strong relationships, create instructional practice in the mathematics classroom, and engage in professional development, then mathematics teachers are empowered and equipped to provide strong instructional practices that lead to improved student academic outcomes. Middle school principals have an increased opportunity to positively influence teacher practice and, thus, student academic outcomes through consistent application of these findings.

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Appendix A: Interview Protocol

Interviewee: _____ Date: _____

Introduction:

Thank you for your willingness to participate in this interview. The purpose of the interview is to gather information about how the MLD training seminar affected you as a middle school principal. This is meant to be an open conversation and I am not looking for specific answers. So please be honest. Your responses are confidential. This interview will be recorded so that I can accurately capture your comments.

Question 1: As the principal how do you spend the majority of your time when school is in session?

Question 2: Could you please share how your experience with MLD helped to inform your practice as an instructional leader in a middle school?

Question 3: How do you describe your role as the principal in shaping the climate of the building?

Question 4: As I prepared for this interview, I learned that teacher job satisfaction has an effect on school climate and student academic outcomes. How would you characterize teacher job satisfaction as you perceive it? And what do you do to improve job satisfaction for teachers teaching mathematics?

Question 5: What duties do you perform that you believe have the biggest effect on student academic outcomes?

Question 6: Could you describe the preparation you had to lead a middle school prior to MLD?

Question 7: What elements of the MLD project helped you to grow or change? And how do you enact instructional leadership to support teachers teaching mathematics? Can you provide specific examples?

Question 8: Can you share your pedagogical understanding of mathematics and how this understanding impacts the ways in which you support teachers teaching mathematics?

Question 9: Can you identify specific instructional practices you are looking for when you observe mathematics classrooms either informally or formally as part of the evaluation process.

Question 10: What else would you like me to know about your practice and your experiences with MLD?

Wrap Up:

Thank you for your time today. As you know I have recorded this interview. I will transcribe the interview and get back with you in about a week to review the transcription. When I share the transcript with you, please read it over and review the document for accuracy. I really appreciate your time today and thank you for helping me with this process.

Appendix B: Consent Form

You are invited to take part in a research study about middle school instructional leadership practices. The researcher is inviting middle school principals who participated in the Middle-grades Leadership Development (MLD) training to be in the study. I obtained your name/contact info via the MLD project team. This form is part of a process called “informed consent” to allow you to understand this study before deciding whether to take part.

This study is being conducted by a researcher named Sherry (Lambertson) Schock, who is a doctoral student at Walden University. You might already know the researcher as the Executive Director of The Institute for Excellence in Education but this study is separate from that role.

Background Information:

The purpose of this study is to understand the instructional leadership practices that middle school principals enact which effect student academic outcomes.

Procedures:

If you agree to be in this study, you will be asked to:

- Sign this informed consent form
- Participate in a 1hour interview via Zoom or Skype
- Participate in 30-minute meeting via Zoom or Skype to review the transcribed interview to confirm accuracy

Here are some sample questions: For questionnaire/interview research, provide a few sample questions to give the participants a reasonable idea of what to expect-- include any sensitive questions here.

- As the principal how do you spend the majority of your time when school is in session?
- Could you please share how your experience with MLD helped to inform your practice as an instructional leader in a middle school?
- What duties do you perform that you believe has the biggest effect on student academic outcomes?

Voluntary Nature of the Study:

This study is voluntary. You are free to accept or turn down the invitation. No one at Walden University or the Institute for Excellence in Education will treat you differently if you decide not to be in the study. If you decide to be in the study now, you can still change your mind later. You may stop at any time. The researcher will follow up with all volunteers to let them know whether or not they were selected for the study.”

Risks and Benefits of Being in the Study:

Being in this type of study involves some risk of the minor discomforts that can be encountered in daily life, such as fatigue.

This research has the potential to inform the middle school field by providing specific details about how middle school principals can impact student academic outcomes. This has the potential to influence university preparation programs as they examine middle school principal course work. Policy makers may use the findings to assist in decisions about middle grades state certification.

Payment: NONE

Privacy:

Reports coming out of this study will not share the identities of individual participants. Details that might identify participants, such as the location of the study, also will not be shared. The researcher will not use your personal information for any purpose outside of this research project. Data will be kept secure by coding participant names, saving video and transcriptions on password protected files, and on a password protected USB drive. The USB drive will be stored in a locked cabinet. Data will be kept for a period of at least 5 years, as required by the university.

Contacts and Questions:

You may ask any questions you have now. Or if you have questions later, you may contact the researcher via phone at 989-529-4397 or email at sherry.schock@waldenu.edu. If you want to talk privately about your rights as a participant, you can call the Research Participant Advocate at my university at 612-312-1210. Walden University's approval number for this study is 06-23-20-0689781 and it expires on June 21, 2021.

Please print or save this consent form for your records.

Obtaining Your Consent

If you feel you understand the study well enough to make a decision about it, please indicate your consent by replying to this email with the words, "I consent."

Printed Name of Participant

Date of consent
